Carbon Neutrality and Trade Challenges

– Focusing on Carbon Border Adjustment Mechanism

Miki Yanagi,
Senior Researcher, Climate Change Group,
Climate Change and Energy Efficiency Unit,
Institute of Energy Economics, Japan

Points

- ✓ The European Union (EU) has promoted the consideration of the Carbon Border Adjustment Mechanism (CBAM) towards carbon neutrality, planning to legislate the CBAM within 2022[1]. This is a scheme to adjust carbon pricing costs during the production of goods at the border. Carbon pricing imposes costs on emitters according to their amounts of CO_2 emissions to internalize their external cost on the environment, incentivizing them to cut emissions.

- ✓ The unprecedented mechanism is feared to be incompatible with most-favored-nation treatment and other basic principles under the General Agreement on Tariffs and Trade (GATT). If so, one of the challenges is whether the CBAM could be justified under GATT Article XX for general exceptions (The Chapeau, and its paragraphs).

- ✓ The United States and the EU are discussing methodologies for monitoring emissions from steel and aluminum in their negotiations under Article 232 of the 1962 U.S. Trade Expansion Act, “Global Arrangement on Sustainable Steel and Aluminum”.

- ✓ The EU CBAM is feared to come under fire from developing countries, which have historically accumulated less emissions than developed countries. It has the potential to deepen the north-south division and result in exclusionary economic blocs.

- ✓ Rules-based Japan is expected to contribute to resolving carbon neutrality and trade challenges. For Japan, with its economy supported by exports, it may become important to consider a border adjustment mechanism with export rebate that is compatible with WTO rules using carbon tax rather than Emission Trading[2].

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[1] This article was written by author in December 2022, based on the Commission's proposal before the final agreement on EU carbon border adjustment was reached by the European Parliament and the Council on April 25, 2023. The regulation then officially entered into force the day following its publication in the Official Journal of the EU on 16 May 2023. Further detail rule for emission accounting is published as Implementing Act and Delegated Act.

[2] In Japan, Green Transformation (GX) related legislation was passed and enacted by the 211

The Paris Agreement adopted at the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, many countries have set forth a goal of achieving carbon neutrality, or net-zero emissions, by 2050. In recent years, meanwhile, the CBAM and other issues regarding carbon neutrality and trade nexus have arisen.

This paper aims to explain the controversial CBAM. The following explains the background, outlines the CBAM mechanism in general, details the EU's consideration of the CBAM and discusses arguments in the United States and Japan and under the UNFCCC. Furthermore, this paper analyzes the compatibility of CBAM with WTO rules using previous studies and provides recommendations and prospects.

Emerging contacts between carbon neutrality and trade

In the EU, Ursula von der Leyen, who was inaugurated as president of the European Commission in December 2019, attracted attention by positioning climate change actions as a top policy priority and proposing the introduction of Carbon Border Adjustments Mechanism. The EU is considering its "Fit for 55" policy package to realize the goal of cutting greenhouse gas emissions by 55% from 1990 to 2030 under its Nationally Determined Contributions (NDCs) for the Paris Agreement.

Joe Biden took up the U.S. presidency in January 2021 and achieved the United States rejoin the Paris Agreement. During his presidential election campaigns, he promised to introduce Carbon Border Adjustment to protect U.S. manufacturers and workers.

The Paris Agreement was adopted in a manner to achieve a sensitive balance amid the north-south confrontation and various national political conditions. However, international asymmetries in costs for climate change countermeasures are emerging as NDC's ambitions are enhanced. Momentum is now rising to consider trade measures to level the playing field, and correct unfair competitive conditions attributable to such cost gaps.

In July 2021, the EU launched talks on the CBAM to be combined with the EU Emission Trade System (EU-ETS). The European Commission, the EU's executive arms, came up with the world's first CBAM design. While energy and

Diet on May 2023, which deal with Japanese Emission Trading Systems. Studies are underway to make the ETS operational in FY2026. A phased introduction of "auctions" for power utilities is being considered starting in FY2033.

other price hikes have become a social issue since Russia's invasion of Ukraine, the EU is reportedly still considering the CBAM.

Nexus between climate change and trade are not limited to border adjustments but are diverse.

In October 2021, for instance, the United States and the EU agreed not to apply duties on steel and aluminum imports that the Trump administration imposed under Section 232 of the 1962 Trade Expansion Act, and related tariffs. The agreement called for establishing a global arrangement to address global overcapacity in the steel sector while reducing trade flows that have high carbon intensity. Within two years, they will establish a methodology to measure emissions from steel and aluminum goods and implement an initiative open to like-minded countries.

At the 26th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC/COP26) in 2021, the United States launched the First Movers Coalition as a platform for global companies to pledge to purchase "green steel" and other goods and technologies required for carbon neutrality to create initial demand for them. The coalition aims to develop markets for decarbonized goods, having some impact on trade.

At the World Trade Organization (WTO), 71 economies, including the United States and China, have participated in the Trade and Environmental Sustainability Structured Discussions (TESSD) to discuss whether trade-related climate measures or policies would be compatible with WTO rules and principles and how these measures or policies would contribute to climate and environment goals and commitments.

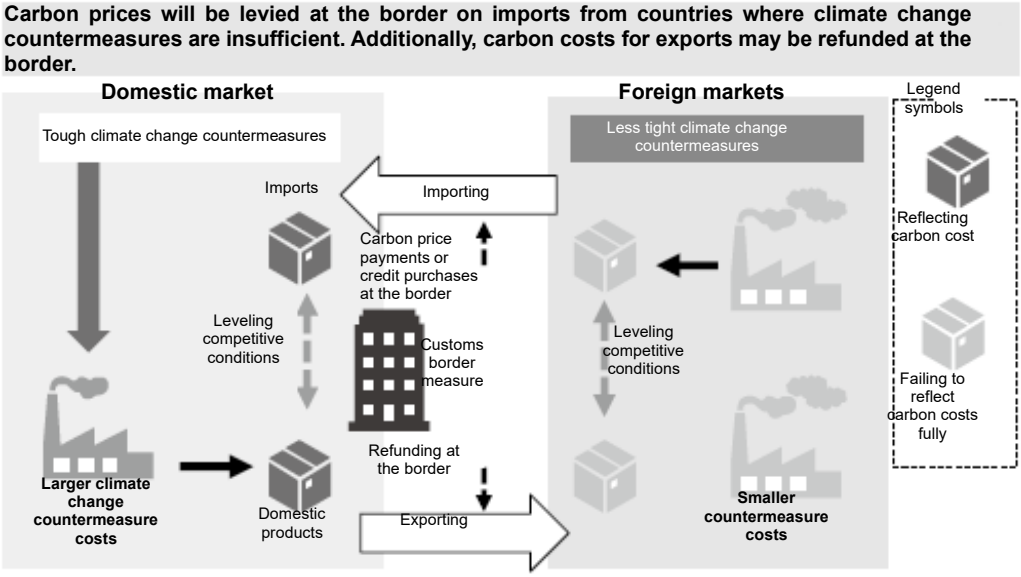
The Group of Seven (G7) and other forums, as well as the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD) and other international organizations, are also considering methodologies to measure emissions included in products and carbon costs for their production. These methodologies will be required for border adjustments.

In this way, rulemaking regarding carbon neutrality and trade has become a significant issue towards the realization of a carbon neutral society. As rulemaking talks now focus on carbon border adjustments, the following details the adjustments:

What are carbon border adjustments?

Carbon border adjustment would be used by countries that shoulder

heavy climate change policy costs as impose tax, surcharges, credit purchase obligations or the like on imported goods from those that do not take sufficient climate change countermeasures. As of the writing of this chapter, no country or region has introduced carbon border adjustments that are designed to prevent carbon leakage (Figure 1).



If a country imposes carbon costs only on domestic companies, they may be disadvantaged in international competition. This is why border adjustments is implemented to level the playing field and prevent carbon leakage.

Figure1: The structure of Carbon Border Adjustments

Source: Prepared by the author from METI (2010) “On 2010 Review Report on Unfair Trade Practices”

Carbon leakage refers to a situation where global emissions fail to decline as a country enhances climate change countermeasures at the cost of a production drop and another country with lower policy costs regarding carbon emissions increases production. In such a situation, domestic products in a country are replaced with imports that emit more carbon, leading to an adverse economic impact that would force the country’s industries to be transferred abroad.

The EU and some others have grown interested in carbon border adjustment in recent years because they must reduce the adverse effects of their policies for raising carbon emission costs on their domestic industries and workers.

To avoid carbon leakage, a country may impose the same carbon costs as its own on imports and refund the equivalent to once-imposed costs for exports.

In this way, the same carbon costs are imposed on domestic products and imports in one country, with its products being exported without carbon costs. This means that border carbon adjustments are useful for a country to enhance climate change countermeasures while preventing carbon leakage. Conceptually, carbon border adjustments can be summarized in this way. For their implementation, however, detailed institutional designs are required. Marcu et al. (2020)[1] indicated eight major components of an institutional design (Table 1).

Table 1 Carbon border adjustment design components

Design elements	Design options
1. Coverage of trade flows	Imports only / including rebate for exports/ their combination
2. Policy mechanism (Domestic systems for adjustment)	Carbon tax, emissions trading system / regulatory measures / both
3. Geographic scope	Exemption of climate leader countries / exemption of least developed countries (LDCs)
4. Sectoral scope	Limited to basic materials and electricity / expanding the scope to include complex goods
5. Emissions scope	Direct emissions at plants (Scope 1) / including purchased electricity and steam (Scope 2) / Lifecycle emissions including emissions from mining and final consumption (Scope 3)
6. Determination of embedded emissions (estimated for each good)	Actual emissions from each plant or company / benchmarks (best practice, average) Whether to combine benchmarks with voluntary notification using international standards
7. Carbon prices for calculation of adjustment	Equivalent to or less than domestic carbon prices (carbon tax, emissions trading system, regulations, etc.) in principle. Considering exporters' carbon prices that are paid in export countries.
8. Use of revenue	Domestic environmental measures / support for developing countries

Source: The author added options for each of the elements based on the

elements by Marcu et al. (2020)

Depending on the selection and combination of these components, leakage-reducing effects, legal feasibility, and technological and management feasibility may differ. Basically, no design exists to produce excellent results in all aspects. Some elements and their effects are traded off with each other. Because of the lack of institutional precedent, no model combination of the elements has been found.

EU-ETS and CBAM

The EU is considering combining EU-ETS with the CBAM. Table 2 summarizes the CBAM proposal in line with the eight elements. Some important points of the proposal are discussed below.

Table 2 Elements of European Commission CBAM proposal

Design elements	Design options
1. Coverage of trade flows	**Adjustment for imports only** / including rebate on exports / their combination
2. Policy mechanism (Domestic systems for adjustment)	Carbon tax, **explicit carbon pricing through the EU-ETS** / regulatory measures, including implicit carbon pricing / both
3. Geographic scope	**All countries** / exemption of LDCs / specific countries
4. Sectoral scope	**Limited to materials vulnerable to carbon cost impact** / expanding the scope to include complex goods[3]
5. Emissions scope	**Limited to direct emissions** / Scopes 1 & 2 [4]/ wider scope (*Including Scope 2 during a transitional period)
6. Determination of embedded emissions (estimated for each good)	**Requirement for reporting actual emissions from each good** (prorated according to weight / prorated according to prices / prorated according to broken down process. **Prorating methods are unknown**.)
7. Carbon prices for calculation of the	**Emissions from goods at each**

[3] European commission will submit a report on products further down the value chain of the goods by 2024, at latest according to the regulation published in the Official Journal of the EU.

[4] direct emissions (*Steel and aluminum, Hydrogen) and indirect emissions (*cement, fertilizer, electricity) published in the Official Journal of the EU

adjustment	**company or plant are multiplied by EU-ETS carbon prices. Only exporters' explicit carbon pricing is taken into account.** / benchmarks / + voluntary reporting when emissions are below benchmarks.
8. Use of revenue	Financial resources for the EU (called "own resources", estimated revenue at €2.1 billion for 2030.)

Note: Underlined parts are from the European Commission proposal.
Source: Prepared by the author from the European Commission proposal.

1. Overview of EU-ETS

The EU-ETS implements a "cap-and-trade" regulation for restricting the total amount of emissions. The EU-ETS has been in place since its introduction, with emission allowances decreasing over time. The EU-ETS covers combustion and manufacturing installations (e.g., 20-megawatt or larger combustion installations, pig iron production installations, etc.), targeting carbon intensive sectors.[2)] Its fourth phase started in 2021.

Free allowances under the EU-ETS are a key issue related to the CBAM. Free allowances are allocated to carbon intensive sectors with high export and import shares in sales to level the playing field.

"Sectors producing over 90 % of industrial emissions received as free allowances for free," according to the European Court of Auditors (2020). Particularly, the steel sector received free allowances equivalent to some 120% of its actual emissions in 2018.[3)] In 2020, blast furnaces in the steel sector could have received free allowances equivalent to some 130% of actual emissions in 2020.[4)] Unspent free allowances can be transferred to a subsequent phase, so-called "banking". Fee allowances transferred to 2013 and on can be used indefinitely, according to an EU-ETS Directive article.

Since 2021, auction prices of emission allowances have continued to rewrite record highs due to energy price spikes. The benchmark price topped €50 per ton in May 2021 and rose close to €100/t in February 2022.

2. Design of EU CBAM

The EU is considering the design of the CBAM in a bid to legislate the CBAM before the end of 2022. In the run-up to the legislation, the European Commission, the EU's executive branch, came up with a proposal first. Later, the

European Parliament as the legislative branch and the Council discussed amendments to the proposal. Finally, the European Parliament, the Council and the European Commission will reach an agreement through their trialogue process. As of the writing of this paper, the European Parliament and the Council have completed the consideration of their respective amendments. The trialogue is now under process. In the following, this paper examines the European Commission proposal as the basis for the CBAM design and checks symbolic items in European Parliament and Council amendments available as of the writing of this paper in October 2022.

(1) European Commission proposal 5)

The European Commission published its CBAM proposal in July 2021. The proposal subjected iron and steel, cement, aluminum, fertilizers and imported electricity to the CBAM. EU imports from Japan in the five sectors are extremely limited (no electricity import from Japan).[6)]

The proposal set forth a transition period between 2023 and 2025, during which importers will be required to report the amounts of embedded emissions from imported goods. From 2026, they will be required to pay for CBAM certificates according to emissions from imported goods. CBAM certificates will be sold at week-earlier EU-ETS market prices, while importers pay for CBAM certificates according to emissions from imports. Payments for CBAM certificates will be effective import imposition. Carbon prices in countries of origin for imports will be adjusted upon payments for CBAM certificates. Then, EU-ETS free allowances will be reduced, with the equivalent to the reduction being replaced with CBAM certificates, as discussed later. Revenue from CBAM certificates is planned to become financial resources for the EU (new “own resources”). Such revenue is estimated at €2.1 billion for 2030. Table 2 summarizes the European Commission proposal according to the eight elements given in Table 1.

EU-ETS free allowances will be reduced by 10 percentage points each year over 10 years from 2026 for the commencement of payments for CBAM certificates, being phased out by 2035. In line with the phaseout, CBAM certificates will be increased by 10 percentage points each year from 2026, covering all emissions from imported goods from 2035. CBAM certificates will thus replace free allowances completely in 2035.

(2) European Parliament and Council Amendments

In June 2022, the European Parliament and the Council came up with amendments to the European Commission proposal. Particular amendments is as follow:

・Expansion of sector and goods

The European Parliament amendments proposal added chemicals (organic chemicals, hydrogen, and ammonia) and polymers (plastics and plastic molding) to the five sectors proposed by the European Commission. The added organic chemicals and polymers are among massive imports from the United States, leading to concern about the EU's political dispute with the United States. The Council amendments expanded downstream goods for the five sectors proposed by the European Commission.

・Expansion of the emissions scope

Regarding the emissions scope for the CBAM, the Council amendments almost endorsed the European Commission proposal that subjected direct emissions alone to the CBAM. However, the European Parliament amendments added indirect emissions (embedded emissions for purchased energy including electricity, so-called "Scope 2").

・Period for replacement of free allowances of EU-ETS with CBAM

The European Commission proposal called for the replacement over 10 years between 2026 and 2035, which was almost accepted by the Council. However, the European Parliament came up with a six-year replacement period between 2027 and 2032.

・Export rebates

While the European Commission proposal and the Council amendments proposal did not include any export rebates, the European Parliament amendments proposal included effective export rebates that take the form of a continuation of free allowances for goods for exports to third countries that do not have any carbon pricing systems similar to the EU-ETS.

Non-EU Discussions on Carbon Border Measure

Although only the EU is considering a specific carbon border adjustment

mechanism, I would like to outline discussions on such border measures in the United States and Japan and under the United Nations Framework Convention on Climate Change (UNFCCC).

1. U.S.

In the United States, an initiative to legislate an emissions trading system gained momentum just after the inauguration of the Obama administration. The Waxman-Markey Bill (H.R. 2454 the American Clean Energy and Security Act of 2009), which cleared the House of Representatives in 2009, included a mechanism for the president to require importers to purchase “International emission allowances” if carbon leakage through emissions trading is identified. However, the bill failed to pass the Senate and was scrapped.

As noted earlier, current President Biden included carbon border adjustments into his presidential election campaign promises. After his inauguration, a Senator proposed a relevant bill, but the bill has failed to be considered fully in Congress. This may be because the United States has no nationwide carbon pricing system for adjustment.

2. Japan

The Japanese government set forth a basic approach to carbon border adjustment measures in its Green Growth Strategy considered in 2021. It called for taking the following four measures while considering a domestic carbon pricing system:

(1) Consider possible actions for carbon border adjustment measures with close attention to discussions taking place in other countries, with a prerequisite that the carbon border adjustment measures are designed to be consistent with WTO rules.

(2) Lead the development and application of global rules on measurement/evaluation methods for carbon emissions per product unit that are internationally reliable in terms of both accuracy and feasibility (e.g., development of ISO standards). Promote data transparency securement.

(3) Verify carbon costs that are associated with products subject to carbon border adjustment measures in Japan and countries that implement the measures.

(4) Address carbon border adjustment measures in cooperation with like-minded countries from the perspective of preventing carbon leakage and ensuring fair competitive conditions.

3. UNFCCC

Article 3-5 of the UNFCCC reads, “Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.” This quotes the chapeau of Article XX of GATT.

The Paris Agreement, adopted at the conference of the parties to the UNFCCC in 2015, has no provision regarding border measures.

Column: Germany-proposed Climate Club

In 2022, when Germany took the chair of the Group of Seven, German Chancellor Olaf Scholz advocated a Climate Club to address carbon leakage. The G7 summit communique in June stated that the G7 would seek to establish an open, cooperative international Climate Club consistent with international rules by the end of 2022. The G7 will enhance talks with major emitters, the Group of 20, and developing countries towards the establishment. The club will address carbon leakage involving carbon emission-intensive goods through the enhancement of national emission reduction goals and emission measuring and reporting mechanisms under the Paris Agreement.

The export-oriented German business community appeared reluctant to accept the EU CBAM that could invite retaliatory measures by export destination countries. As a result, there had been a lot of attention on whether the Climate Club would replace the EU CBAM.

Compatibility with WTO rules

Carbon border adjustments represent policy intervention in trade, indicating that their compatibility with WTO rules will become a controversial issue.

1. Proposals in earlier studies

There are many earlier studies on the issue.

For instance, former WTO Appellate Body member Hillman (2013)[7)]

advocates an approach combining a carbon tax in the form of an indirect tax[8] like the consumption tax with border adjustment measures including rebates on exports. The approach represents the mutatis mutandis application of consumption tax border adjustments based on Articles II.2 and III.2 of the GATT to a carbon tax. This assumes that if the approach is difficult to justify with Article II or III, general exceptions under Article XX will be used. The study concludes that export rebates can be designed as compatible with the WTO Agreements because “the WTO rules on export subsidies permit a tax on domestically produced fossil fuels to be rebated when a product is exported, provided that the rebate is not larger than the actual tax levied on ‘like’ products ‘when sold for domestic consumption. It also points out that many problems remain as open questions, including whether the internal tax in Article II.2 can be interpreted widely and whether a carbon tax on processes can be adjusted.

Regarding the exemption of least developed countries (LDCs) and others from border adjustments, the paper recommends the exemption of countries that have emitted little CO_2 in the past, based on “the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail” in GATT Article XX of the GATT and the principle of “Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC)” in Article 3 of the UNFCCC.

Mehling et al (2019)[9] also proposed a carbon border adjustment design based on earlier studies and precedents in the Appellate Body of WTO. The paper describes carbon border adjustments as “the only unilateral policy option” that can help level uneven carbon constraints and offers both effective protection against carbon leakage and an incentive for other countries to strengthen their climate efforts, at a time when concerns exist on heterogeneous and asymmetrical domestic climate efforts under the Paris Agreement and carbon leakage. Based on the Appellate Body Report, Brazil—Measures Affecting Imports of Retreaded Tyres [10] where relations between the chapeau and each item of Article XX were questioned, the paper concludes that whether any carbon border adjustments can be harmonized with policy purposes is important.

This means that carbon border adjustments should be designed not only to level the playing field but also to contribute to the purpose of emission reduction. In this sense, the paper pointed out that export rebates could create an incentive for carbon emissions and undermine the justification of a carbon border

adjustment based on Article XX.

Article I stipulates the Most-Favored-Nation treatment for one country to be provided to other countries, but allows exceptions for developing countries or LDCs. As LDCs emit little carbon, their exemption from carbon border adjustments may not run counter to the purpose of emission reduction. Given the European Commission's conditions for Tariff Preferences for developing countries, part of the revenue from carbon border adjustments should be used for supporting LDCs, according to the paper.

The above two proposals on carbon border adjustment were given in previous studies. For more details, see "2022 Report on Compliance by Major Trading Partners with Trade Agreements"[11] by the Ministry of Economy, Trade and Industry, Japan which generally and carefully covers arguments regarding carbon border adjustments' compatibility with WTO rules based on Appellate Body Reports.

2. Discussion points on EU CBAM

The CBAM being considered in the EU will also be subject to debate on its compatibility with WTO rules if it reaches a trialogue agreement among the European Parliament, the Council, and the Commission. At the time of writing this paper, the final CBAM institutional design is yet available, it is premature to discuss whether the EU CBAM is compatible with WTO rules. However, some experts have raised some points of the CBAM that could run counter to the GATT. For instance, Bacchus (2021)[12] points out that the EU CBAM could run counter to Article I of the GATT on the most-favored-nation treatment, Article II on schedules of concessions and Article III on the national treatment of internal taxation and regulation. The paper also notes the EU will likely intend to set up the CBAM as an internal regulation (Article III.4) rather than a customs measure.

The EU CBAM could have a problem with the "like products" requirement of GATT Article III. CBAM charges would be calculated based on embedded carbon emissions, if this is considered to discriminate against like products.

CBAM determines the size of the burden based on carbon content, if this is considered to discriminate against like products.

If the CBAM violates Article III, the justification of the CBAM under the chapeau

and each item of Article XX on general exceptions (health and environmental purposes such as the restoration of the atmosphere before warming) may become an issue. Export rebates, as noted by Mehling et al. (2019), are difficult to be interpreted as compatible with the purpose of emission reduction and may not be compatible with Article XX.

While unspent free allowances under the EU-ETS ("Banking") can be transferred to a subsequent period, imports subject to the CBAM have no access to such allowances, indicating the discrimination of domestic products from imports.

Recommendations

Carbon border adjustment represents an attempt to fill international carbon price gaps ("asymmetry") at the border in preparation for carbon price hikes accompanying decarbonization, bringing to light on various issues between trade and climate change policies. Carbon price gaps, their asymmetry arise as emission reduction targets pledged as Nationally Determined Contributions under the Paris Agreement have different ambitions, called "asymmetry". Particularly, the EU, which attempts to enhance emission reduction through the EU-ETS and other measures under the goal of cutting emissions by 55% from 1990 by 2030, is planning to introduce the CBAM.

While the EU CBAM is planned to give consideration to carbon costs in countries of origin for imports, proposals cover only explicit carbon taxes and emissions trading systems. The proposals fail to take into account the diversity of carbon policy measures in countries including Japan, lacking flexibility. The EU CBAM may come under fire from developing countries from the viewpoint of responsibilities for accumulated emissions (Carbon Budget) and equity in the context of Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC). Exemptions from the CBAM should be considered prudently.

At a time when the formation of economic blocs is feared, Japan should promote talks with other Indo-Pacific countries to act as a bridge to prevent any new conflict and fragmentation of the world from deepening. Hopes are placed on rules-based Japan's contributions. When Japan designs its carbon border adjustment system, the Hillman (2013) approach, which combines a carbon tax in the form of indirect tax with border adjustment measures including rebates on exports, may become an option.

Notes

1) Marcu, A., M. Mehling and A. Cosbey (2020), “USA-EU Town Hall on Border Carbon Adjustment: An Update on Developments in the EU,” European Roundtable on Climate Change and Sustainable Transition.

2) Article 27 of the EU Directive 2003/87/EC, the European Commission’s guidance, etc. indicate that the EU members can exempt installations that emit 25,000t-CO_2/year or less and consume 35MW or less and are required to address verifier’s recommendations of improvements for such installations. Brock, J., Bonifazi, E., Thorpe, C., Morgan-Price, S. and Kaar, A. (2019), “Preparation for the implementation of the EU ETS provisions for small installations, Best Practice Guidance,” CLIMA-FWC-001/FRA/2015/0014.

3) European Court of Auditors (2020), “Special Report 18/2020 The EU’s Emissions Trading System: free allocation of allowances needed better targeting.”

4) Estimated by the author from European Environment Agency, European Union Transaction Log (EUTL)

5) European Commission (2021), “Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a carbon border adjustment mechanism,” COM/2021/564 final.

6) Details about exporters are explained by Miki Yanagi, Soichi Morimoto, Hiroko Nakamura (2021), “The Carbon Border Adjustment Mechanism: Collaboration or Confrontation?” IEEJ 438th Forum on Research Works. As of 2019, iron and steel exporters to the EU (including the United Kingdom) included Russia, Turkey, Ukraine and China. https://eneken.ieej.or.jp/data/9943.pdf

7) Hillman, J.A. (2013), “Changing Climate for Carbon Taxes: Who’s Afraid of the WTO?” Climate & Energy Policy Paper Series, Georgetown University Law Center.

8) The WTO’s Agreement on Subsidies and Countervailing Measures (ASCM) defines “indirect taxes” as “sales, excise, turnover, value added, franchise, stamp, transfer, inventory and equipment taxes, border taxes, and all taxes other than direct taxes and import charges.”, Hillman, J.A. (2013), “Changing Climate for Carbon Taxes: Who’s Afraid of the WTO?” Climate & Energy Policy Paper Series, Georgetown University Law Center, Footnote 13.

9) Mehling, M., H. Van Asselt, K. Das, S. Droege and C. Verkuijl (2019), “Designing Border Carbon Adjustments for Enhanced Climate Action,” American Journal of International Law, 113(3), 433－481.

10) “The chapeau Article XX of the GATT (instead of each item of the article) was

interpreted in reference to policy purposes." Details are explained in Tsuyoshi Kawase (2007), "Measures related to Brazil's retreaded tire imports," in 'Study on FY2007 WTO Panel/ Appellate Body Report,' Ministry of Economy, Trade and Industry.

11) Details are explained by the Ministry of Economy, Trade and Industry (2022), "2022 Review Report on Unfair Trade Practices," in Overview of WTO Agreements, Column, Trade and Environment: Carbon Border Adjustments' Outline and Compatibility with WTO Rules.(In Japanese)

12) Bacchus. J. (2021), "Legal Issues with the European Carbon Border Adjustment Mechanism," BRIEFING PAPER No. 125, CATO Institute.

Contact : report@tky.ieej.or.jp