

Summary of Discussions by the Research Group on Environment and Tariff Policies

Introduction

Tariff policies and customs administrations have been deeply related to environmental policies for years. For instance, the customs, as an enforcement authority at the border, implements border control measures required by domestic laws and regulations based on international conventions including the Washington Convention for wild fauna and flora conservation, the Basel Convention that deals with control of hazardous waste disposals, and Japan's unique environmental laws and regulations such as the Invasive Alien Species Act. Since climate change has been vigorously discussed in many countries as one of the most important issues in environmental policies in recent years, tariff policies are required to respond adequately to these demands of the times.

The concentration of atmospheric greenhouse gases¹ is rising, and consequently global temperature is increasing² owing to economic development around the world since the Industrial Revolution. Experts have pointed out that the acceleration in global warming is likely to, in the long run, exacerbate damage from floods and storms and have more negative effects on global food production and human health. In response to this growing international concern, the United Nations Framework Convention on Climate Change (UNFCCC) came into force in 1994, and its contracting parties (193 countries including Japan and the EU) have tackled with climate change. While the first commitment period of the Kyoto Protocol³ adopted in 1997 ends in 2012, the parties are currently discussing how the future framework (the next framework) should be designed. At the end of 2009, the Fifteenth Session of the Conference of Parties to the UNFCCC (COP15) was held in Copenhagen. During the conference, there were discussions with regard to issues such as shaping up a fair and effective framework, setting ambitious reduction targets, and responding to funding requirements to support developing countries. As a result of the summit, the Copenhagen Accord⁴ was drafted, but was not adopted at the conference. Negotiations on the

¹ General term for gases that would increase atmospheric temperature, such as carbon dioxide, methane, and dinitrogen monoxide (hereinafter referred to as "carbon").

² Over the last 100 years (1906–2005), the global average temperature has increased by 0.74 degrees Celsius. It is expected to further increase by 2.4–6.4 degrees Celsius by the end of the 21st century in societies where high economic growth is being achieved by focusing on fossil energy. (IPCC Fourth Assessment Report, 2007)

³ It requires developed countries and others to reduce their carbon emissions by a certain amount over a period of 5 years from 2008. Currently, the total number of contracting parties stands at 189 countries including Japan and the EU. Developing countries including China and India have no obligations for reducing their carbon emissions. The U.S. has not ratified it.

⁴ Overview of the Copenhagen Accord:

- 1) Setting a target to hold the increase in global temperature to a value 2 degrees Celsius below the levels before industrialization.
- 2) Annex I Parties (developed countries) are to submit their emission reduction targets, and Non-Annex I Parties (developing countries) are to submit their mitigation actions.
- 3) The mitigation actions that Non-Annex I Parties are to undertake at their own initiative will be subject to

scheme of the next framework are currently underway toward COP16, scheduled to be held in Mexico (November 29–December 10, 2010).

This group, which met four times since March 2010, objectively summarized international discussions about various issues where climate change was deeply related to tariff policies, particularly “countermeasures against carbon leakage” and “environmental goods,” and analyzed the issues from the technical perspective of jurisprudence, economics, etc.

Chapter 1. Effect of Carbon Leakage and Development of International Discussions

1. Background of carbon leakage

While multilateral efforts against climate change are being undertaken, each developed country has, in parallel, independently considered the introduction of domestic emission trading schemes or carbon taxes (hereinafter collectively referred to as “carbon constraints”), some of which have already been put into practice. For instance, the EU introduced the EU Emissions Trading System (EU-ETS, cap and trade approach) in 2005. This system, with the aim of reducing emissions to a certain degree, imposes an emission limit (“cap”) on the participating enterprises in the region and, at the same time, allocates corresponding emission allowances to them free of charge or with charge. This system also requires them to hold emission allowances equivalent to the amount of their actual emissions in the end by mutually selling or purchasing surpluses or shortfalls within their individual emission allowances. Further, the U.S. has also considered the introduction of similar types of domestic emission trading schemes and the Congress has discussed several related bills⁵.

If the introduction of carbon constraints progresses in developed countries, while the negotiations over the next framework takes time, it would cause a significant difference in carbon emissions costs between developed and developing countries. Given that this difference has a negative impact on the competitiveness of products from developed countries, it is likely to create a risk of shifting domestic demands in developed countries from domestic products to imported products⁶. This is generally called “carbon leakage” because carbon emitted in one country “leaks” to another.

2. Effects of carbon leakage

international analysis and consultation following their domestic monitoring, reporting, and verification (MRV). The actions supported will be subject to international MRV.

4) From 2010 to 2012, joint financial support of USD 30 billion will be provided. It aims to provide USD 100 billion annually by 2020.

5) Assessing the implementation of the accord by 2015.

⁵ The American Clean Energy and Security Act of 2009 (H.R.2454) or the so-called “Waxman–Markey bill” was passed by the House on June 26, 2009; the Clean Energy Jobs and American Power Act (S.1733) or the so-called “Kerry–Boxer bill” was passed by the Senate Committee on Environment and Public Works on November 5, 2009; and The American Power Act or the so called “Kerry–Lieberman bill” was published on May 12, 2010 (to be submitted to the Senate).

⁶ Even if the next framework is promptly agreed upon, the same discussion will be applied if the obligation of developing countries to reduce their emissions is alleviated more considerably than that of developed countries.

Carbon leakage refers to a shift in production from a country with stringent carbon emissions regulations (hereinafter referred to as a “stringent regulation country”) to another with less stringent regulations (hereinafter referred to as a “less stringent regulation country”), and an increase in carbon emissions in the latter country due to the shift. The shift may occur if the difference in the carbon emissions costs between the two countries results in a significant difference in the production costs. If carbon emissions per unit of output (hereinafter referred to as “emissions per unit of output”) in a less stringent regulation country are relatively high because of lower production technology than that in a stringent regulation country, this may result in increase of total global carbon emissions.

Carbon leakage would be a problem in terms of not only an environmental policy but also an industrial policy because it is caused by deterioration of the global competitiveness of industries in a stringent regulation country. Carbon leakage usually occurs through the following two effects: (1) a demand shift in a stringent regulation country from domestic products to imported products produced in less stringent regulation countries (hereinafter referred to as “import substitution”) and (2) a shift in the production base from a stringent regulation country to less stringent regulation countries (hereinafter referred to as “overseas transfer”)⁷. In a stringent regulation country, import substitution is likely to reduce corporate profits and employment as a result of decrease in sales share. Further, although overseas transfer may not result in a huge loss of corporate profits⁸, it may cause significant loss of domestic employment opportunities. Hence, carbon leakage is considered to be a serious problem for both the industrial and the employment sectors in developed countries⁹.

3. Significance of carbon leakage measures

When companies conduct production activities without bearing the costs associated with carbon emissions, negative externality of global warming caused by large amount of carbon emissions occurs. The introduction of carbon constraints by developed countries (stringent regulation countries) can be explained as an action aimed at internalizing this negative externality by imposing economic burdens on carbon emissions because these countries consider carbon emissions as “demerit goods.” On the other hand, if developing countries (less stringent regulation countries) do not implement any carbon constraints equivalent to the ones in stringent regulation countries, carbon leakage may occur and carbon emissions may shift from the stringent regulation countries to the less stringent regulation countries. Therefore, to deal with the global negative

⁷ In addition, there is also an effect where the sales share of products exported from a stringent regulation country in overseas markets is taken over by products manufactured in a less stringent regulation country. This kind of global competitiveness in overseas markets is discussed in detail in Chapter 4.

⁸ When a company shifts its domestic production base to overseas, its loss will be limited in the medium to long term.

⁹ During the hearing on “Trade Aspects of Climate Change Legislation” held by House Ways and Means Committee of the U.S. Congress (March 24, 2009), the Energy-Intensive Manufacturers’ Working Group on Greenhouse Gas Regulations and the United Steelworkers of America asserted that carbon leakage had a considerable negative impact on the domestic employment opportunity.

externality of global warming¹⁰, an international perspective is essential.

The best measure to internalize this negative externality on a global basis is to impose a uniform carbon constraint on each country under international frameworks. However, if developing countries refuse to accept such an obligation during negotiations over the international framework, it is not practical to implement the uniform carbon constraint. In such a case, the second-best measure is that a stringent regulation country independently implements measures to prevent carbon leakage (hereinafter referred to as “carbon leakage measures”) in order to ensure the effectiveness of domestic carbon constraints.

When carbon leakage measures limit trade at domestic border or respect global competitiveness of domestic industries, it may cause a conflict between environmental values that prevent global warming and industrial/economic values that promote free trade. These two values are coequal, universal, and should be respected. If carbon leakage has a negative impact on global warming, imposition of certain limitations on trade for its prevention would be inevitable. Further, implementation of domestic or border measures that are consistent with WTO rule would be required in order not to disturb competitiveness of domestic products in progressing leading action to reduce carbon emissions. On the other hand, it is obvious that measures which aim to protect trade using prevention of global warming as an excuse are unjustifiable.

4. Types of carbon leakage measures

The main methods among concrete carbon leakage measures¹¹ discussed at the international level are as follows:

(1) A method in which carbon emissions costs are imposed on imported products

This method imposes burden corresponding to sufficient carbon emissions costs on imported products manufactured without bearing such costs at the time of import¹² (hereinafter referred to as “inclusion method”), which may take the following forms: imposing an additional tariff on imported products¹³, a border tax adjustment (BTA) as a “border adjustment measure” of a carbon constraint (internal tax) that is implemented in the country¹⁴ (imposing carbon tax as an internal tax on imported products), and imposing a mandatory surrender of emission allowances for imported products. Among these, there is an active discussion about the BTA and the mandatory surrender of emission allowances overseas. In particular, the possibility to introduce the latter was mentioned in U.S. bills related to climate change and the EU directive.

¹⁰ The occurrence of carbon leakage would be a situation where less stringent regulation countries are free riders in terms of enjoying the effect of policy efforts (reduction of carbon emissions) by the stringent regulation countries without bearing any cost.

¹¹ In a broad sense, carbon leakage measures may include transfer of technology and financial aid with respect to energy saving and emission reducing facilities to developing countries, but we did not include these to be considered in this group.

¹² The general term “carbon tariff” is sometimes used in the media.

¹³ Tariff rates cannot exceed the internationally agreed level. In order to raise tariff rates, a World Trade Organization (WTO) Member country is required to obtain approvals of all other WTO Members, which would be unrealistic.

¹⁴ For example, consumption taxes imposed on imported products are rebated based on “the Destination Principle” that provides the country of destination with the right to levy taxes, which is consistent with WTO rules.

(2) A method for mitigating carbon emissions costs for certain domestic products

A typical form of this method is to allocate all or some of the emission allowances, under the domestic emission trading scheme, to certain domestic industries for free or to exempt all or some of the carbon tax burdens, in order to reduce carbon emissions costs imposed on certain domestic industries (hereinafter referred to as “alleviation method”). Among these, free allocation of emission allowances is characterized as an arrangement within the domestic emission trading scheme in U.S. bills related to climate change and the EU directive.

In addition, rebate of the cost associated with surrendering emission allowances or paid carbon taxes imposed on exported products (hereinafter referred to as “rebate on exports”) may be one of the border adjustment measures of carbon constraints that are introduced in a country. However, it is characterized as a measure that complements inclusion method rather than an independent carbon leakage measure.

5. Trends in International Discussions about Carbon Leakage Measures

(1) Movement in developed countries

For the EU, the EU directive 2003/87/EC stipulates that the European Commission may propose imposing a mandatory surrender of their regional emission allowances under the EU-ETS on importers of certain products; in other words, the Commission may propose introduction of a measure that includes importers of certain products in mandatory participants of the EU-ETS by June 2010. The directive also stipulates that emission allowances during phase III (2013–2020) shall be in principle auctioned in the end, but certain industries exposed to significant carbon leakage shall be allocated free emission allowances.

Among the EU members, France has showed particular interest in carbon leakage measures, and the necessity of a complement of domestic carbon tax through “border carbon tax” was advocated in President Sarkozy’s speech and its support materials in September 2009¹⁵. Moreover, in the same month, Sarkozy, with COP15 in mind, sent a joint letter with the German Chancellor Merkel to the Secretary General of the United Nations, in which the possibility of adopting a border adjustment measure when necessary was mentioned¹⁶. Further, in April 2010, Sarkozy and the Italian Prime Minister Berlusconi sent a joint letter to the European

¹⁵ Details of “border carbon tax” are not clear. In his speech, President Sarkozy claimed that “a border carbon tax is the natural complement to a domestic carbon tax. Far more importantly: a border carbon tax is vital for our industries and jobs.” (“France’s strategy in the battle against global warming,” September 10, 2009). However, in response to various situations, including a judge ruling out the domestic carbon tax in December 2009, he announced an indefinite extension on the introduction of the domestic carbon tax. In the announcement, he also stressed, “The domestic carbon tax will be established depending on the border carbon tax, which would protect our farmers and industries from unfair competition by countries that impudently continue polluting the environment. In addition, I will call on Europe to accept a behavioral principle that protects companies and employment from unfair competition and undertake the responsibility as a whole.”

¹⁶ “It would not be relevant for the most courageous countries to compromise carbon leakage stemming from the lack of or insufficient actions by other countries. For this reason, it should be possible to put in place appropriate adjustment measures targeting the countries that do not fully participate in or fail to support this accord.” (Toward the Copenhagen Accord on Climate Change, September 18, 2009)

Commission President Barroso calling on him to include the introduction of border adjustment measures in the European Commission's proposal to be made by June 2010¹⁷.

There are several related bills in the U.S., of which the Waxman–Markey Bill stipulates that the President shall determine the following along with the establishment of a domestic emission trading scheme by 2017: (1) the imposition of a mandatory purchase of “international reserve allowances” (emission allowances only for importers, independent from the domestic emission allowances) from the government on importers of certain products from countries that have not committed to greenhouse gas emission reductions at a level equivalent to the U.S. and (2) revision of the amount of free emission allowances allocated to certain industries. However, President Obama reportedly expressed a skeptical view on the border adjustment measure in the bill¹⁸.

Note that Europe and the U.S. seem to consider the border adjustment measures in an integrated manner with the perspective of international environmental policy that encourages developing countries to participate in the international frameworks, which are essential for worldwide emission reduction.

(2) Movements in developing countries

Developing countries have clearly opposed these movements in developed countries. China, for instance, has made its position clear by stating that “the proposal regarding a levy of carbon tariffs on imported goods made by some of the developed countries violates the principle of the WTO and is trade protectionism under the pretext of ‘environmental conservation’” adding that “the idea of a carbon tariff violates the very principles of the Kyoto Protocol that state that while developed and developing countries each undertake different responsibilities, they are to cooperate in dealing with the issue of climate change”¹⁹.

Further, at the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), the developing countries refused to undertake the obligations to take steps toward global warming in the next framework. At the same time, they proposed banning the developed parties from introducing any trade measure unilaterally, even if it is related to climate change including climate stability, carbon leakage, and environmental conservation cost²⁰.

¹⁷ “We believe it is essential to take the EU Commission report (scheduled for June 2010) as an opportunity to clarify, without prejudice, the conditions for establishing a mechanism of adjustments on European Union borders...this kind of mechanism is an indispensable lever that the European Union must have the power to use if we want to preserve the environmental integrity of our efforts while ensuring the engagement of our principal partners.” “Note that, in the U.S., comparable measures are being proposed in the bill under consideration. Like all other nations that hope for this mechanism, our interest is, of course, to tackle the problem along with U.S. partners.” (Letter from the French Republic President Nicolas Sarkozy and Italian Prime Minister Silvio Berlusconi to the European Commission President Jose Manuel Barroso)

¹⁸ “(At a time when the economy is still deep in recession worldwide) I think we have to be very careful about sending out any protectionist signals. I think there may be other ways of doing it than with a tariff approach.” (The New York Times, June 29, 2009)

¹⁹ A statement of a spokesman for China's Ministry of Commerce. (Article by Jiji Press Co., July 13, 2009)

²⁰ The Chair's text for the tenth session of the Ad Hoc Working Group on Long-term Cooperative Action under the

Chapter 2. Basic Points about the Methods for Implementing Carbon Leakage Measures

To assess carbon leakage measures concretely, considering the framework of the measures is necessary, e.g., which industry should be subject to the carbon leakage measure and to what extent the adjustment of carbon emissions costs should be made.

1. Industry sectors where carbon leakage would be problematic

(1) Difference in influence of carbon constraints between industries

The mechanisms under which carbon constraints create carbon leakage are the following: First, carbon constraints cause a certain extent of increase in costs to enterprises and if such an increase accounts for a major part of the production costs, it can be a significant burden to the enterprises. However, if such increase forms only a small part of the production costs, it may be a negligible burden. Second, the enterprises are forced to decide whether to pass on all or part of the cost increase through the product price. Passing on all of the cost increase may result in loss of their market share for competing imported products, and even the market share of their exported products to less stringent regulation countries would be overridden by the products made in less stringent regulation countries. As a result, the enterprises may have to transfer their production base overseas. On the other hand, there would be a case where enterprises are able to pass on the cost increase through product price without losing any market share to competing imported products. As just described, carbon leakage is most likely to occur in an industry where it generates a significant increase in costs and where it is difficult to pass on the cost increase through the product prices.

With regard to the two elements of (1) the degree of cost increase and (2) difficulty in passing on the cost increase through the product price, appearance of each item varies depending on the type of industry. Therefore, analyzing the appearance of these items in each industry is necessary in order to identify industries where carbon leakage would be problematic.

In practice, carbon leakage measures under consideration in the EU and the U.S. are planned to be applicable to particular industries rather than across the whole industry. Also, it appears that the applicability criterion is based on the degree of the cost increase and the difficulty in passing on the cost increase through the product price²¹.

For example, the European Commission discusses the criterion by plotting their trade intensity (which is considered to be the approximate value for the difficulty in passing on the increase in costs through the price of the product) on the vertical axis and the degree of increase in cost on the horizontal axis, and dividing the domain into four quadrants²². The image in

Convention (May 17, 2010, FCCC/AWGLCA/2010/6).

²¹ Emission reduction costs (indicator adopted by the EU directive) and energy intensity/greenhouse gas intensity (indicator adopted by the U.S. Waxman–Markey Bill) can be regarded as indicators of the level of increase in production costs due to carbon constraints, and trade intensity can be regarded as an indicator of the ability to shift the increase in costs to the price of the product. (Refer to attachment 5 for details.)

²² Measuring “a significant risk of carbon leakage” according to the proposed Art. 10a of Directive 2003/87/EC - The

attachment 6 shows that industries belonging to quadrant D are the most vulnerable to carbon leakage whereas industries belonging to quadrant A are the least vulnerable²³.

(2) Production cost increase due to carbon constraints

Generally, a carbon constraint is not likely to affect an industry whose carbon emissions costs or energy costs²⁴ are a smaller proportion of the production costs and the industry will not suffer resultant cost increases²⁵. Therefore, the industry is less likely to experience carbon leakage. Note that the degree of increase in costs varies from industry to industry and differs even within the same industry, depending on the manufacturing process²⁶.

(3) Passing on production cost increase through product prices

The EU and the U.S. use “trade intensity” as an indicator of the degree of difficulty in passing on an increase in costs²⁷. The European Commission explains that it is practical to use trade intensity as the approximate value of the degree for a robust analysis²⁸, but the degree for a particular industry, as the Commission itself admits, should actually be assessed in a more exhaustive and versatile manner. For instance, a report by the International Energy Agency (IEA)²⁹ argues that, in assessing the difficulty in passing on the cost increases, attention must be paid to (1) degree of international competition, (2) cost structure, (3) market structure, and (4) price elasticity of demand. Following is the outline of these items summarized by this group on the basis of the abovementioned report.

A) Degree of international competition

In general, the more the worldwide business deployment of an industry beyond regional market (e.g., the East Asia market) increases and the more the products manufactured by the industry are traded, the more is such an industry exposed to competition. Cost pass-through will

European Commission’s approach (European Commission, 2008).

²³ For selection of the eligible industry, the EU directive also adopts a criterion that regards an industry as the eligible industry if either the emission reduction cost or the trade intensity of that industry exceeds a specified level.

Therefore, it can be understood that those in quadrant B and C also qualify for protection. On the other hand, the U.S. Waxman–Markey bill also adopts a criterion to select an industry only according to energy intensity (greenhouse gas intensity), so it can be understood that quadrant B also qualifies for protection. The border lines that divide these four quadrants should be determined based on a detailed analysis on identification of industries in which carbon leakage is likely to occur.

²⁴ Energy costs are calculated based on both direct cost (that involves direct carbon emissions through combustion of petroleum, coal, etc.) and indirect cost (that involves indirect carbon emissions through the use of electricity supplied from power facilities emitting carbon with thermal power generation).

²⁵ Refer to attachment 7.

²⁶ For instance, we assume that there are two different processes—A and B—in an industry and there is a significant difference in emissions per unit of output between both processes. Even if the difference is minor in each country, there is a possibility that this would create a significant difference in average emissions per unit of output in the industry in each country as a result of a difference in the proportion of processes A and B to production in each country.

²⁷ Trade intensity = (export value + import value) / (shipment value + import value). Note that the validity of this formula has not been sufficiently discussed.

²⁸ Commission services paper on Energy Intensive Industries exposed to a significant risk of carbon leakage (European Commission, 2008).

²⁹ ISSUES BEHIND COMPETITIVENESS AND CARBON LEAKAGE: Focus on Heavy Industry (IEA, 2008)

be limited in this case as enterprises will fear loss of their market share. For instance, it is very difficult to pass on increase in costs through the product price in an industry with an extremely high level of international competition where, in tradition, the product price might be determined based on the prevalent international price³⁰.

B) Cost structure

Price of a product is determined on the basis of various costs such as raw material costs, manufacturing costs like fuel expenses and transport costs, and profit margins.

If the production cost is a small proportion of the total cost even if carbon emissions cost accounts for a major part of the production cost, it will be relatively easy to pass on a cost increase through product price since the size of the cost increase to be passed on through the price is small. Further, cost pass-through will not occur in an industry with higher profit margins if the industry adopts a strategy to absorb the increase in carbon emissions costs by reducing its profit margins. Moreover, with regard to a product with higher transportation costs³¹, it will be relatively easy to pass on costs in the domestic market not only because the product is less affected by the price increase due to the cost pass-through, but also because the cost pass-through is unlikely to increase imports of the same product.

C) Market structure

In general, if a product market of a particular industry is monopolistic or oligopolistic, the enterprises in such an industry act as price makers and would thus be able to easily pass on the production cost increase through the product price. On the other hand, if a product market is reasonably competitive, the enterprises act as price takers, and it would thus be difficult to pass on the production cost increase through the product price³².

D) Price elasticity of demand

In general, passing on a cost increase would be difficult when the price of a product increases in a market and the price is elastic to demand, because the demand would decrease considerably.

Price elasticity of demand is determined by product substitutability. Therefore, the more a product is differentiated (i.e., the less a product is substitutable), the less elastic demand is to price increase and the easier it will be to pass on the cost increase to consumers. For instance, the products which require high manufacturing technologies that are not available overseas or

³⁰ “This is the case in the aluminium sector for example, where the London Metal Exchange (LME) sets prices that apply to all internationally traded aluminum.” (the same IEA report)

³¹ In the case of the EU, which is connected to its adjacent countries by land, there is also a concern over carbon leakage in the power production business, whereas in case of Japan, which is located far from other countries across the seas, it appears that there is almost no possibility of carbon leakage in the power production business. In addition, in the so-called “heavy industry,” it is assumed that the proportion of transport costs to total costs is relatively high.

³² The so-called “heavy industry” seems to have a mechanism of natural monopoly because it often requires a large amount of fixed costs for capital investment, etc.; therefore, its product market tends to become oligopolistic.

the ones which are clearly differentiated from competing products overseas through a particular trademark or marketing strategy fall into such a product category³³.

In addition, even a product that is highly substitutable may become demand inelastic to price increase if factors other than its properties such as special contracting relationship (e.g., generous after-sales service, long-term supply scheme, etc.) affect consumers' preference considerably.

2. Adjustment technique for carbon emissions cost

(1) Consideration on the level of burden imposed on imported products from less stringent countries

Currently, methods for calculating carbon emissions per unit of output associated with production activities in each industry have been established to some extent internationally. When determining the level of burden to be imposed on imported products through inclusion method using this calculation method, the issue is how to make the criteria for determining the amount of carbon emissions embodied in imported products in terms of economic rationality.

The best method is to impose costs corresponding to carbon emissions associated with the manufacturing process, where the emissions are measured by the manufacturer's individual process of manufacturing imported products³⁴. This is not only the most appropriate and true method of calculating the amount of environmental burden, but also can give producers in less stringent regulation countries an incentive to reduce their carbon emissions by encouraging improvement of their manufacturing technology. However, if a similar calculation method is not dispersed in a less stringent regulation country, the country's products may not be imported with sufficient information required to calculate the amount of carbon emissions.

The second-best method is to uniformly impose a carbon emissions cost based on the amount of carbon emissions calculated by the internationally predominant method of production (PMP) on imported products from a less stringent regulation country³⁵. While this method is relatively easy to implement, it would make it difficult to give producers in the less stringent regulation country an incentive to reduce their amount of carbon emissions³⁶.

Another possible method is to impose a uniform carbon cost on imported products from a less stringent regulation country in accordance with the amount of carbon emissions calculated

³³ Regarding the manufacturing industry in Japan, it is assumed that, under the system of international horizontal division of manufacturing established in the East Asia region, domestic manufacturing relevant to the system tends to focus on high-value added products that require high manufacturing technologies, which are central to products exported from Japan.

³⁴ However, it is possible that this method may be deemed not to comply with the national treatment and the MFN treatment of WTO rules. (Refer to 1. (3) D) in Chapter 3)

³⁵ Apart from a method that uniformly applies the amount of carbon emissions based on one typical manufacturing method to each country, there is another possible method in which the amount of carbon emissions based on individual PMP for each country is applied to each country.

³⁶ When the cost of carbon emissions based on PMP is considerably higher than the actual individual cost of carbon emissions in each exporting country, the government of that exporting country may ask, when an importing country implements a border adjustment measure, the importing country to evaluate its exported products on the basis of the actual individual cost of carbon emissions before seeking to reduce the amount of carbon emissions.

on the basis of an internationally recognized manufacturing method where the least amount of carbon emissions occur (BAT: Best Available Technology). This method, which is relatively easy to implement, cannot provide producers in a less stringent regulation country with an incentive to reduce the amount of carbon emissions; moreover, it can underestimate the amount of carbon emissions associated with the manufacture of imported products because it would decrease the level of burden uniformly and significantly. Therefore, this method cannot have sufficient effects to ensure not only international competitiveness but also effectiveness as an environmental policy³⁷.

The combination of methods mentioned above would be possible where the amount of carbon emissions is measured on the basis of PMP only if the exporting country does not provide supporting information to calculate it, while the imposition of a carbon cost is, in principle, based on the manufacturing method of the individual imported products³⁸.

(2) Development and standardization of methods to measure carbon emissions amounts

To ensure that carbon leakage measures are effective and appropriate, it is important to ascertain the amount of carbon emissions associated with the manufacturing process of a product. Recently, the development and standardization of methods for measuring the amount of carbon emissions associated with industry activities has been developed against the background of implementing the Kyoto Mechanisms³⁹ and a domestic emission trading scheme⁴⁰, and growing consumer awareness related to the climate change issue⁴¹. Further, in industries such as iron and steel, cement, and aluminum, independent industrial efforts have resulted in tangible achievements in the development and standardization of methods capable of measuring with a common scale the amount of carbon emissions per unit of output in certain manufacturing processes regardless of the difference in production technology or energy used.

On the other hand, there still remain many challenges in the development and standardization of methods for measuring the amount of carbon emissions. First, with regard to the challenge on the development, taking into account that various manufacturers mutually use

³⁷ On the other hand, this method (as discussed in chapter 3) has little difficulties with the national treatment or the MFN treatment under WTO rules.

³⁸ This kind of method was approved in the Appellate Body report on the *US-Gasoline* case (1996).

³⁹ The Kyoto Mechanisms refer to flexibility mechanisms for achieving the commitment of each country based on the Kyoto Protocol by utilizing the reduction and removal of greenhouse gas emissions in other countries, and part of the assigned amount of other countries. The Clean Development Mechanism (CDM), one of the Kyoto mechanisms, certifies the effect of reducing greenhouse gas emissions by conducting energy saving projects in developing countries (assisted by developed countries) as “certified emission reductions” (credits). Developed countries can utilize these credits as the amount of reduced emissions in their own country toward meeting the commitment. In the certification process, a method for evaluating the amount of reduced carbon emissions by a relevant project has been established.

⁴⁰ In the EU-ETS, a third party verification organization that is approved by a certification body based on each country’s system is to verify the amount of carbon emissions by each relevant project; thus, the standardization of a method of evaluation for the amount of carbon emissions has been promoted.

⁴¹ A method for measuring the amount of carbon emissions is being used in the carbon footprint system, which promotes the “visualization” of carbon by specifying the amount of carbon emitted in a series of lifecycles from the raw procurement to the disposal and recycling of goods or services, and the International Organization for Standardization (ISO) has been working toward its standardization.

their products as inputs, which creates complicated linkage between them, it is necessary to develop a “carbon inter-industry relations table” that calculates the relationship between the input and output of carbon emissions in order to grasp how much a production increase in a manufacturing industry impacts the amount of carbon emissions in the whole manufacturing industry. Moreover, many methods measure the amount of carbon emissions based on energy inputs, and in such cases, it is necessary to grasp whether the input energy is oil or electricity and whether it is derived from thermal power generation (where emissions are large) or hydraulic power generation (where emissions are small) in case the input energy is electricity. However, tracking such information involves complex work, and trade complicates it further.

Second, regarding the challenge on standardization, for example, the work on the development and standardization of methods for measuring the amount of carbon emissions has been mainly promoted by large enterprises while small and medium-sized enterprises are reluctant to take part in it. In addition, international standardization is difficult to progress in some industries in which small and medium-sized enterprises in developing countries do not belong to any international industrial organization. Further, it is worth studying how to provide an incentive for industries to participate in the work on collection of the data for measurement as well as in the actual measurement.

It is technically possible to solve these issues, in order to develop accurate measurement methods and promote international standardization although it would involve difficulties in international negotiations, etc. However, since similar measurement methods do not sufficiently spread throughout less stringent regulation countries, it may be necessary to generally estimate the amount of carbon emissions embodied in imported products on the basis of certain criteria and certify it.

(3) Emission origin rule

To implement a measure that designates less stringent regulation countries with large amounts of carbon emissions and imposes a carbon cost on imported products from those countries, the idea of which is included in the U.S. Waxman–Markey Bill, identification of the country where carbon is emitted during the manufacture of the imported products is necessary⁴². For this purpose, it may be necessary to establish a system similar to the rules of origin⁴³ in the tariff policy (emission origin rule)⁴⁴.

⁴² It should be noted that there is a risk that this kind of method may be regarded as a breach of the MFN treatment in WTO rule. (Refer to chapter 3)

⁴³ A rule that determines whether an exporting country is considered as the country or region where production, manufacturing, or processing of those particular materials is carried out. For instance, in the Economic Partnership Agreement (EPA) that Japan has contracted, if the ratio of the costs of non-origin material in the price of final products produced in the exporting country falls below a certain threshold, the country of origin is conferred and a preferential EPA tariff rate is applied to imported products from that country, based on the evidence.

⁴⁴ In case of utilizing existing preferential rules of origin, only when the exporting country is regarded as a stringent regulation country and the country of origin, a method where the carbon emissions cost is not imposed on imported products may be applied. In this case, if the exporting country is regarded as a stringent regulation country but not as the country of origin or if the exporting country is a less stringent regulation country, the carbon emissions cost will

The criteria for identifying emission countries are critical in designing emission origin rule. For instance, some Japanese industries have formed a supply chain that concentrates on intermediate products (parts of a particular product) that are manufactured in and transported through various countries to a country where the final product is assembled in the horizontal division of manufacturing in East Asia. However, in such a complicated supply chain, it is anticipated to be difficult to track the amount of carbon emissions associated with the manufacturing process for each country.

For example, if a rule that recognizes a country whose emissions account for the largest amount of carbon in the total emissions accumulated during the manufacturing process as the emission country of the finished product, the issue is until which phase of the supply chain carbon emissions should be tracked back in order to calculate the cumulative total emissions. In this case, it would be theoretically appropriate to obtain information on carbon emissions generated during each phase of the supply chain at the border of every individual country and reflect this information in the selection of a final defrayer of the carbon cost. However, implementation of such a tracking process involves a complicated system and procedures, and thus it may not function properly. Realistically, it could be suggested that the emission country is determined on the basis of the summation of emissions accumulated during the manufacturing process up to one phase before the finished product (assembly process), but in this case, the issue arises that circumvention of export would be provoked.

Further, note that if emission origin rules provide importers of a less stringent country's products with disadvantage owing to self certification of the emission country, they give importers little incentive to conduct such self certifications.

Chapter 3. Compliance with WTO Rules

Carbon leakage measures must be in compliance with WTO rules. To simplify the argument, we assume a domestic emission trading scheme as a carbon constraint and have a discussion mainly on a method that imposes a mandatory surrender of emission allowances on imported products, as well as a method where free emission allowances are provided to specific industries⁴⁵.

1. A method that imposes a mandatory surrender of emission allowances on imported products

(1) Possible eligibility for BTAs of internal tax

A) What are BTAs?

In general, the imposition of customs duties that exceed the bound rate committed

be principally imposed. However, some supplementary remedy rules may need to be established. (For instance, this may apply when it is proved that more than a certain proportion of raw materials and parts used in the exported product are produced in a stringent regulation country.)

⁴⁵ When imposing a domestic carbon tax on imported products, almost the same discussion applies.

internationally is prohibited⁴⁶, but application of border adjustments of internal tax (BTAs) is permissible⁴⁷. A BTA is a scheme where imported products are subject to domestic internal taxes equivalent to the ones imposed on like domestic products or subject to charges equivalent to internal taxes imposed on inputs that are used during the manufacturing process of the imported products; on the other hand, internal taxes are remitted, exempted, or rebated with regard to exported products. In general, indirect taxes such as consumption tax possess this scheme.

B) WTO Requirements for BTAs regarding the mandatory surrender of emission allowances

To explain the mandatory surrender of emission allowances against imported products as a BTA, it needs to fall into internal taxes (charges) under WTO rules. However, since emission allowances can be purchased through private transactions, the mandatory surrender would not be necessarily regarded as a tax⁴⁸.

Even if the mandatory surrender of emission allowances is regarded as an internal tax, on the premise of a domestic emission trading scheme that imposes mandatory surrender of emission allowances on carbon emissions associated with energy consumption during the manufacturing process of domestic products, an issue arises as to whether BTAs include the imposition of burden on items that are not physically incorporated into products, e.g., energy consumption or carbon emissions during the manufacturing process (tax imposition based on the process and production method (PPM)). The “Report by the Working Party on Border Tax Adjustments” (BISD3464) in 1970 suggests the following two conditions for BTAs to be approved: (1) a tax is imposed directly on the products rather than on the producers and (2) it is an indirect tax rather than a direct tax. However, according to the report, there are different views on whether the BTA is applicable with regard to tax impositions on inputs like energy that are not physically incorporated in final end products.

Moreover, in case that the mandatory surrender of emission allowances is regarded as a tax imposed on carbon emitted during the manufacturing process, an issue arises as to whether the tax imposed on a byproduct generated during the manufacturing process is qualified as a BTA. Till date, there are no GATT or WTO precedents that evaluate this issue.

One referential precedent is a panel report on the *US-Superfund* case (1987), which mentions that U.S. taxation, at the time of import, on products manufactured using chemical

⁴⁶ WTO Members have pledged to exempt other WTO Members from ordinary customs duties in excess of those set forth and provided in the Schedule (the customs duties specified in the Schedule are the maximum ceilings). (paragraph 1(b) of Article II of GATT) In order to impose customs duty that exceeds the bound rate, it is necessary to modify the Schedule with the approval from all the WTO Members.

⁴⁷ GATT permits WTO Members to impose charges on imported products at the time of the import equivalent to internal taxes imposed in respect of like domestic products. (the chapeau and (a) of paragraph 2 of Article II of GATT)

⁴⁸ There is no definition of taxes in WTO rules. Normally, taxes refer to something that is paid to a nation or equivalent authority, but in a domestic emission trading scheme, emission allowances are not always purchased from a nation and payments that are equivalent to the emission allowances are also not always made to the nation. Therefore, the mandatory surrender of emission allowances may be interpreted as a regulation rather than a tax.

substances that are subject to internal taxes in the U.S. is a BTA compliant with GATT if the amount of taxes is determined in relation to the amount of chemical substances used during the manufacturing process. However, no reference could be made with respect to whether the chemical substances aforementioned are incorporated into the products.

C) Tax law requirements for BTAs regarding the mandatory surrender of emission allowances

To be qualified as BTAs under tax laws, it is necessary that the tax is a consumption tax to be paid by end-consumers based on the destination principle⁴⁹, and is supported by appropriate systems⁵⁰. When above requirements are applied to carbon constraints, under the system those who consume products that incorporate carbon emissions during the manufacturing process will pay the tax corresponding to the emissions in the country of consumption, regardless of where the product was manufactured. However, existing domestic emission trading schemes or those being currently studied in various countries aim to reduce carbon emissions by imposing a burden on carbon emissions in countries where production activities for the products are carried out. In other words, these are based on the origin principle.

Further, if BTAs are regarded as consumption tax adjustments based on the destination principle, the imposition of the mandatory surrender of emission allowances at the time of import as a BTA needs to introduce, in principle, a rebate scheme of import charges equivalent to the cost for surrender of emission allowances at the time of export⁵¹.

(2) Is the method eligible for domestic regulations on imported products?

When the mandatory surrender of emission allowances is interpreted as a regulation rather than an internal tax, the issue is whether the application of such a regulation to imported products is consistent with WTO rules. First, if it falls under import restrictions of Article XI of GATT, its imposition is prohibited.

Even if the mandatory surrender of emission allowances does not fall under import restrictions of Article XI of GATT, in case that it falls under “laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products” of paragraph 1, Article III of GATT, it should not be applied to imported or domestic products so as to afford protection to domestic production.

If the mandatory surrender of allowances is not subject to rules of abovementioned two

⁴⁹ In Destination Principle the destination country (the location of the end-consumer) has the right to impose tax, as opposed to the Origin Principle.

⁵⁰ According to the OECD, BTAs are defined as “any fiscal measure that puts into effect, in whole or in part, the destination principle (i.e. which enables exported products to be relieved of some or all of the tax charged in the exporting country in respect of similar domestic products sold to consumers on the domestic market, which enables imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of like domestic products).”

⁵¹ Since rebates on exports degrade the domestic carbon emission control effect, it may be worthwhile to consider not making rebates as a countermeasure against climate change at the time of export.

provisions and it does not violate the most-favored-nation (MFN) treatment or national treatment (Refer to the following (3)), it would be accepted under WTO rules.

(3) MFN treatment and national treatment

If the imposition of the mandatory surrender of emission allowances on imported products can be explained as a BTA of internal tax or a domestic regulation, further discussion should be made about the MFN treatment (Article I of GATT) and the national treatment (Article III of GATT) with respect to WTO rules. The MFN treatment prohibits discriminatory treatment of like imported products on the basis of the country of origin and the national treatment prohibits unfair treatment of imported products compared to like domestic products.

A) MFN treatment

WTO Members shall accord the most favored treatment that is granted to any member to all members with regard to like products as the MFN treatment. It is highly likely that imposing the mandatory surrender of emission allowances on products imported from countries only where there is no domestic emission trading scheme is regarded as a violation of the MFN treatment, and thus it is necessary to impose such mandatory surrender on imported products from all countries^{52 53}. Moreover, an issue is whether imposing heavier burden on imported products with higher carbon emissions during the manufacturing process than that on the like imported products with lower carbon emissions violates the MFN treatment, since the like imported products are being treated differently on the basis of their country of origin, if the countries of origin are different.

B) National treatment

WTO Members shall not impose internal taxes on imported products in excess of the level of internal taxes imposed on like domestic products as the national treatment. A precedent (the Appellate Body report on the *Japan-Taxes on Alcoholic Beverages* case (1996)) determined that if the burden on imported products exceeds “internal taxes or other internal charges of any kind” applied to like domestic products, it is a violation of the national treatment and is not accepted. Thus, if imported products whose manufacturers emit more carbon during their manufacturing process and domestic products whose manufacturers emit less carbon fall under the like products, imposing heavier burden on the imported products than that on the domestic product is not permitted.

⁵² The Waxman–Markey Bill in the U.S. stipulates that the manufacturing country of a product shall be specified in order to apply border adjustment measure, which is likely to be regarded as a violation of the MFN treatment.

⁵³ Imposing a mandatory surrender of emission allowances on imported products regardless of whether or not a domestic emission trading scheme is introduced in the exporting country will result in imposing double mandatory surrender of emission allowances on imported products from a country that has a domestic emission trading scheme. In order to avoid such a situation, an arrangement such as rebating the cost for surrendering emission allowances at the time of export will be necessary in the exporting country side.

In addition, even if they are not like products, internal taxes shall not be imposed on imported products in a way that protects domestic products directly competing with and substitutable for the imported products⁵⁴. Therefore, it is required to establish a system that does not “afford protection to” domestic products whose manufacturers emit less carbon than imported products during their manufacturing process.

C) Criteria for “Like products”

With regard to both the MFN treatment and the national treatment, the issue is whether carbon emissions during the manufacturing process could be taken into consideration when the scope of like products is determined⁵⁵. In accordance with the criteria regarding like products indicated in precedents (the Appellate Body report on the *Japan-Taxes on Alcoholic Beverages* case (1996), etc.⁵⁶)—the product’s end-uses; consumers’ tastes and habits; properties, nature, and quality of the product; and tariff classifications—it seems to be difficult to deny the likeness between imported and domestic products, only on the basis of the differences in the manufacturing process or method.

Further, the Appellate Body report continues that even if two products do not have identical physical characteristics, they are recognized as directly competitive or substitutable products as long as they have common end uses as shown by price elasticity. Given that carbon leakage measures are introduced to correct the changes in competitive conditions between domestic products and imported products that are attributable to the introduction of carbon constraints, it is difficult to deny the competitive relationship between domestic products and imported products that would be subject to BTAs or domestic regulations. Therefore, as described in B) above, it is important to elaborate a system that does not “afford protection.”

D) Burden level of carbon emissions costs when a mandatory surrender of emission allowances is imposed

With regard to the burden level of carbon emissions costs when a mandatory surrender of emission allowances is imposed on the importers, the national treatment or the MFN treatment becomes a particular issue to be considered. Imposing a burden based on actual

⁵⁴ The first sentence of paragraph 2, Article III of GATT stipulates the national treatment with respect to like products, and the second sentence of the same paragraph prohibits protection to domestic products with respect to directly competitive or substitutable products. In addition, paragraph 4 of the Article III of GATT stipulates that domestic regulation over imported products “shall be accorded treatment no less favourable than that accorded to” like domestic products.

⁵⁵ With respect to internal tax, while a BTA is implemented in accordance with paragraph 2 (a), Article II of GATT, there are discussions about whether BTA charges applied to imported products should meet the requirements of the national treatment in paragraph 2, Article III at the same time. If the charges are subject to paragraph 2, Article III, it will be questioned whether the national treatment is ensured between imported products and like domestic products. However, if the charges are not subject to the regulations of the above paragraph, but are solely subject to the regulations of paragraph 2 (a), Article II, it would be arguable that whether the national treatment will be ensured with regard to the internal taxes imposed on raw materials (article).

⁵⁶ *Japan-Taxes on Alcoholic Beverages* case (1996) raised “likeness” of products in paragraph 2, Article III of GATT (internal taxes), and the *EC-Asbestos* case (2001) raised “likeness” of products in paragraph 4 of the same article (domestic regulations).

emissions during the manufacturing process makes a difference in costs burden between domestic and imported products or among imported products from different production countries. Therefore, unless the likeness of the products is denied depending on the amount of carbon emissions during the manufacturing process, a critical difficulty will arise between the imposition of mandatory surrender and the two treatment i.e., MFN treatment and national treatment. Further, when imposing a uniform burden on imported products on the basis of the amount of carbon emissions measured on the assumption that the products are manufactured with the internationally predominant method of production (PMP), if the burden imposed on domestic products is lower than what is required according to the carbon emissions measured on the basis of PMP, the national treatment will also be an issue⁵⁷. Therefore, imposing a burden based on carbon emissions measured on the assumption that the products are manufactured with the best available technology (BAT) may best conform to WTO rules, with respect to both the national treatment and the MFN treatment⁵⁸.

(4) Application of GATT Article XX

If countermeasures against carbon leakage cannot be expounded as BTAs and domestic regulations, and even if they violate the MFN treatment or the national treatment, they could be still justified under the general exception rule in Article XX of GATT. Considering that this article aims to maintain an interface between trade values and other values including environmental ones, in order for a carbon leakage measure to be regarded as a general exception provided in Article XX, it is necessary to show that, as a result of introducing carbon constraints, the environmental values that are not trade values will be impaired due to carbon leakage and that the countermeasures against carbon leakage also compose effective and legitimate environmental policy, instead of showing whether the carbon constraints introduced have adverse effects on products of a country in terms of international competition.

A) Paragraph (g) of GATT Article XX

In paragraph (g) of GATT Article XX, “measures relating to the conservation of exhaustible natural resources” are justified as a general exception. In the precedents after the

⁵⁷ Not only the level of burden but also the methods of burden may be an issue with regard to violations against the national treatment. For instance, the Appellate Body report on the *US-Standards for Reformulated and Conventional Gasoline* (1996) states that it is discriminatory treatment that a statutory baseline is applied to importers instead of a uniform baseline while an individual baseline is applied to domestic gasoline refiners. In addition, the Appellate Body report mentions that it is possible to apply a statutory baseline if the export source for imported gasoline cannot be identified, or if the individual baseline cannot be determined due to a shortage of data. When the essence of the report is applied to the discussion in question, it can be inferred that imposing a cost on domestic products based on individual carbon emissions while applying a uniformly statutory baseline for carbon emissions to like imported products can be regarded as a violation of the national treatment. In addition, applying a statutory baseline for carbon emissions uniformly on imported products when individual carbon emissions cannot be identified at the time of import is acceptable.

⁵⁸ However, from the perspective of considering international competitiveness, that standard may not have a sufficient effect.

establishment of the WTO, requirements regarding “relating to” were eased⁵⁹, indicating that a reasonable relationship between the measure and the purpose should suffice to fulfill the requirement. As a result, paragraph (g) is easier to verify than paragraph (b) of the Article XX that states “measures necessary to protect human, animal or plant life or health.” For this reason, if it is possible to verify that carbon leakage measures are reasonably related to prevention of global warming on the ground that “atmosphere without excessive carbon” is an “exhaustible natural resource,” they are highly likely to be regarded as “measures relating to the conservation of exhaustible natural resources”⁶⁰.

Also, the latter part of paragraph (g) of Article XX provides that “such measures are made effective in conjunction with restrictions on domestic production or consumption.” Therefore, to impose a mandatory surrender of emission allowances on imported products, the existence of carbon constraints on domestic products will be a premise even if paragraph (g) of Article XX is invoked. It can be understood that if carbon constraints such as domestic emission trading schemes fall under the “restrictions on domestic production or consumption,” even handed treatment to imported and domestic products is sufficient and identical treatment is not required as long as carbon leakage measures are “made effective in conjunction with” this restriction⁶¹.

B) The chapeau of GATT Article XX

With regard to conditions that deem measures provided in each paragraph as general exceptions of GATT, the chapeau of GATT Article XX stipulates that such measures are not applied in a manner that would constitute a means of (1) arbitrary or unjustifiable discrimination between countries where the same conditions prevail or (2) a disguised restriction on international trade.

According to a precedent (the Appellate Body report on the *United States-Import Prohibition of Certain Shrimp and Shrimp Products* (1998)), introduction of a uniform control measure without taking into account the difference in condition in each export country would be regarded as an “unjustifiable discrimination.” To justify a carbon leakage measure on the basis of Article XX, the measure is required to be justifiable as an environmental policy, and in that sense, it is compliant with the UNFCCC regulating global warming countermeasures. Since the convention has defined “common but differentiated responsibilities” for developed and

⁵⁹ “Relating to” in paragraph (g) of Article XX used to be interpreted as “primarily aimed at.” However the Appellate Body report on the *US-Standards for Reformulated and Conventional Gasoline* (1996) eased the criteria reflecting a criticism that the scope of the application of (g) of Article XX is too narrow and mentioned that “reasonably related to” should be sufficient.

⁶⁰ When explaining the imposition of the mandatory surrender of emission allowances on imported products like a BTA of internal taxes, it is assumed that rebate on exports will be introduced along with it. However, with respect to supporting these measures with Article XX of GATT, it is possible to assume that, since the rebate on exports will increase domestic carbon emissions, reasonable relationship between the carbon leakage measure and the global warming measure is impaired, making the application of paragraph (g) of Article XX difficult.

⁶¹ Based on the Appellate Body report on the *US-Standards for Reformulated and Conventional Gasoline* case (1996)

developing countries⁶², if a developed country imposes the same level of mandatory surrender of emission allowances on products imported from a developing country as its domestic products, it is possible for the developing country to claim that it is a violation of the “common but differentiated responsibilities” principle and may fall under “means of unjustifiable discrimination” in Article XX.

To refute these claims persuasively, a carbon leakage measure that meets the requirements in the chapeau of Article XX must be designed considering the compliance with the UNFCCC⁶³.

Further, since a carbon leakage measure is a strategy that prevents carbon leakage, maintaining international competitiveness of domestic products, it is required to have sufficient effects of improving the environment without being regarded as a “disguised restriction on international trade.”

2. A method that allocates free emission allowances to specific industries

If employing a method that allocates free emission allowances to specific industries, it is necessary to consider the relationship with the WTO Agreement on Subsidies and Countervailing Measures (the SCM Agreement). If free allocation of emission allowances falls under subsidies and is regarded as specific under the SCM Agreement, it may be subject to the rules in the SCM Agreement.

(1) Whether free allocation of emission allowances falls under subsidies

To be qualified as subsidies, the SCM Agreement requires that there is a financial contribution by a government or any public body (1.1 (a) of the SCM Agreement) and that a benefit is thereby conferred⁶⁴ (1.1 (b) of the SCM Agreement).

Of the four examples of “financial contribution” in Article 1 of the SCM Agreement, “government revenue that is otherwise due is foregone or not collected” in 1.1(a)(1)(ii) is the

⁶² Paragraph 1, Article III of UNFCCC stipulates that “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country parties should take the lead in combating climate change and the adverse effects thereof”.

⁶³ In doing so, it is not necessarily appropriate to suggest what kind of attention has to be paid to which kind of developing country to satisfy the requirements for the application of Article XX of GATT, therefore, consideration is necessary based on a concrete system taking into account the impact on the effectiveness of environment improvement. Although the U.S. Waxman–Markey Bill exempts the mandatory surrender of emission allowances with respect to imports from LDC, it may be regarded that the treatment does not satisfy the requirements for application of Article XX of GATT, since it does not pay similar attention to developing countries other than LDC.

Further, in order to take into account the differences in developing countries’ responsibilities for global warming countermeasures, it does not always have to mitigate the burden of developing countries under the whole anti-carbon leakage scheme, but, for instance, it may be possible for developed countries to support developing countries through transfer of technology and financial aid with respect to energy saving and emissions reducing facilities, utilizing the income from the sales of emission allowances, etc.

⁶⁴ Apart from “a financial contribution,” “any form of income or price support in the sense of Article XVI of GATT” (1.1(a) (2) of the SCM Agreement) could be regarded as a subsidy, but it is “a financial contribution” that relates to free allocation of emission allowances.

most relevant to free allocation of emission allowances⁶⁵. With respect to criteria for what falls under “revenue that is otherwise due is forgone,” the Appellate Body report on the *US-Tax Treatment for “Foreign Sales Corporations”(FSC)* (2000) mentions the necessity to compare the revenue that is normally due and the revenue that has actually been collected. The interpretation of “a financial contribution” is quite broad, indicating that transfer of economic value is sufficient⁶⁶. Therefore, it is assumed that free allocation of emission allowances cannot be denied as “a financial contribution” since trade in emission allowances with charges is prerequisite under domestic emission trading schemes. On the other hand, whether a benefit is conferred is determined on the basis of comparison with the case wherein emission allowances are purchased in markets. In general, a benefit is possibly conferred if the government only provides a particular industry with emission allowances for free and they are traded with charges among private entities.

(2) Whether free allocation of emission allowances is specific

A subsidy may be subject to certain disciplines in the SCM Agreement if the subsidy is specific to “an enterprise or industry or group of enterprises or industries” (Articles 1 and 2 of the SCM Agreement). Whether a subsidy has specificity is determined on the basis of both de jure specificity (2.1(a) of the SCM Agreement) and de facto specificity (2.1(c) of the SCM Agreement). Regarding de jure specificity, if the legislation explicitly limits access to a subsidy to certain enterprises, such subsidy shall be specific. However, if the legislation establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, specificity shall not exist. De facto specificity is based on the use of a subsidy program by a limited number of certain enterprises, predominant use by certain enterprises, the granting of disproportionately large amounts of subsidy to certain enterprises, and the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy.

(3) Whether free allocation of emission allowances falls under prohibited subsidies

If free allocation of emission allowances falls under subsidies and it has specificity, the issue is whether it is qualified as prohibited subsidies in the SCM Agreement (so-called red-light subsidies). Red-light subsidies under Article 3 of the SCM Agreement consist of export subsidies (subsidies contingent in law or in fact upon export performance) and preferential subsidies for domestic products (subsidies contingent upon the use of domestic over imported products). However, if free allocation of emission allowances is not granted under the conditions of export performance or the use of domestic over imported products, it does not fall under the

⁶⁵ In addition to this, the examples in the SCM Agreement include situations where “a government practice involves a direct transfer of funds,” “a government provides goods or services other than general infrastructure, or purchases goods,” and “a government makes payments to a funding mechanism.”

⁶⁶ It is suggested that “a financial contribution” is a transfer of economic values from the government to a receiving party and it is acceptable for the transfer to be made in a non-monetary form.

red-light subsidies.

(4) Whether free allocation of emission allowances is subject to countervailing duty if it falls under other subsidies

A subsidy with specificity that does not fall under red-light subsidies (so-called yellow-light subsidies) is subject to disciplines of the SCM Agreement only if the granting thereof has adverse effects, such as injury, to the domestic industry of another WTO Member. When free emission allowances are allocated to certain industries where a domestic emission trading scheme is implemented, although burden level of the industries remains the same as that before introduction of the scheme, it does not necessarily mean that such free allocation does not have adverse effects on the domestic industry of another country because issues to be considered under the SCM Agreement are nothing but a causation between subsidized exports and injury to domestic industry of another country caused by the subsidized exports⁶⁷.

3. Whether a method where the costs of surrendering emission allowances are rebated at the time of export falls under export subsidies

The issue is whether rebate of the costs associated with surrendering emission allowances at the time of export is not deemed to be export subsidies prohibited by the SCM Agreement. For the rebate not to be regarded as an export subsidy, such rebate must be considered as “an exemption or remission of internal tax borne by the like product when destined for domestic consumption (BTAs on exports)”⁶⁸. In this case, it is essential that the rebate on exports is introduced along with implementing the imposition of a mandatory surrender of emission allowances at the time of export, which is mentioned in section 1 above⁶⁹.

Even though it is mentioned in section 1, in order to determine whether a BTA of the mandatory surrender of emission allowances might be permitted, it is necessary to consider the relationship with a provision in the SCM Agreement (item (h) of Annex I of the SCM Agreement) stipulating “if the prior-stage of cumulative indirect taxes are levied on inputs that are consumed in the production of the exported product” such exemptions of indirect taxes do not fall under export subsidies. First, it is assumed that the mandatory surrender does not fall under “the prior-stage of cumulative indirect taxes,” but the issue is whether this provision can be reasonably

⁶⁷ There are no precedents yet regarding whether applying the general exception rule of Article XX of GATT can be justified or whether the rule is applicable when a problem arises regarding the relationship with the SCM Agreement with respect to free allocation of emission allowances. Even if the rule is supposed to be applicable, Article XX of GATT can only be applied on the premise that free allocation of emission allowances will contribute to environmental protection.

⁶⁸ Notes on 1.1(a)(1)(ii) of the SCM Agreement: “In accordance with the provisions of Article XVI of GATT 1994 (Note of Article XVI) and provisions of Annexes I through III of this Agreement, the exemption of an exported product from duties or taxes borne by similar products when destined for domestic consumption, or the remission of such duties or taxes for an amount that does not exceed those which have accrued, shall not be deemed to be a subsidy.”

⁶⁹ Since rebates on exports induce an increase in domestic carbon emissions, it may be necessary to consider an option not to implement them as an environmental measure while they are regarded as BTAs.

applied to the mandatory surrender of emission allowances. Second, “inputs that are consumed in the production of the exported product” are described as “energy, fuels and oil used in the production process and catalysts which are consumed in the course of their use to obtain the exported product” in another provision (footnote 61, Annex II of the SCM Agreement) and it is stipulated that the burden levied on these is subject to BTAs (paragraph 1 of I of Annex II of the SCM Agreement). However, it is necessary to consider if the mandatory surrender of emission allowances, which can be considered a burden imposed on a byproduct (carbon emitted during the manufacturing process) can be treated the same as the burden levied on the inputs⁷⁰.

Chapter 4. Analysis and theoretical assessment from the perspective of economics

1. Effect of restraining carbon leakage

Industries of a country face competition from competing foreign industries in not only domestic markets but also overseas markets. This group studies the primary effect⁷¹ of restraining carbon leakage (import substitution and overseas transfer) by the type of carbon leakage measures discussed in section 4 of Chapter 1, focusing on the international competitiveness of domestic industries in domestic and overseas markets^{72 73}.

(1) Effects on import substitution

Inclusion method secures the international competitiveness of domestic products in the domestic market by raising the prices of competing imported products from less stringent regulation countries, and limits import substitution consequently.

Alleviation method does this by lowering the prices of domestic products, and thus limits import substitution.

(2) Effects on overseas transfer⁷⁴

Inclusion method can contribute to the restraint on overseas transfer in the sense that the international competitiveness of domestic products in the domestic market is secured⁷⁵. On the other hand, since the prices of domestic products are raised owing to carbon constraints, there is a possibility that the method is not sufficient to succeed in securing the international competitiveness of domestic products in overseas markets, resulting in a

⁷⁰ When rebates on exports cannot be explained as a BTA, they may fall under export subsidies. In that case, see footnote 67 for whether they can be justified by applying the general exception regulation of Article XX of GATT.

⁷¹ Direct effects of carbon leakage measures are studied in this section and ripple effects in each economic sector are studied in a quantitative assessment in section 4 of this chapter.

⁷² When evaluating effects of carbon leakage measures, as a benchmark for comparison purposes, this group envisages a condition where the price of a domestic product rises with the introduction of carbon constraints in the country.

⁷³ Refer to attachments 11 and 12 for a summary of this discussion

⁷⁴ Equalizing competitive conditions for domestic industries to foreign industries with carbon leakage measures may help in restraining overseas transfer, but it should be noted that there is a risk of slowing down further development of low-carbon technologies or progression of new low-carbon projects within the country if such measures are continued over the long term.

⁷⁵ It is possible to restrain overseas transfer that aims for reverse importing to the home country.

situation where overseas transfer cannot be sufficiently restrained. If rebate on exports methods are used at the same time, it will secure the international competitiveness of domestic products in overseas markets and be able to limit overseas transfer.

Alleviation method restrains overseas transfer because it secures international competitiveness of domestic products in both the domestic and overseas markets by lowering the prices of domestic products.

2. Qualitative assessment on the effects of carbon leakage measures

On the basis of the discussions so far, this group assesses the primary effect of each carbon leakage measure qualitatively, including effects on not only participating domestic industries but also non-participating domestic industries and competing industries in less stringent regulation countries, from the perspectives of both environmental policies and industrial policies⁷⁶.

(1) Evaluations from the perspective of environmental policies

Inclusion method, where it is possible to limit carbon leakage to a certain extent, can also reduce carbon emissions in non-participating domestic industries using imported raw materials and intermediate goods to which the method is applied, as the method increases these product prices. This method can also provide an incentive to the participating domestic industries to reduce carbon emissions while carbon constraints are maintained. In addition to the imposition of a certain amount of carbon emissions costs on competing industries in less stringent regulation countries, under this method, provision of incentive to reduce carbon emissions with competing industries becomes possible depending on the design of the method⁷⁷. However, if this method is used in parallel with the rebate on exports, it cannot provide the incentive to export industries because carbon emissions that are emitted during the manufacturing process are not practically subject to carbon constraints.

Although alleviation method prevents carbon leakage, this method may not provide participating domestic industries with the incentive to reduce carbon emissions, because carbon emissions corresponding to exports as well as domestic sales are outside the scope of carbon constraints. In addition, non-participating domestic industries may increase their carbon emissions as this method decreases the prices of raw materials and intermediate goods procured from the participating domestic industries⁷⁸. Further, this method cannot provide an incentive for reducing carbon emissions to the participating industries in less stringent regulation countries since this method does not impose costs on imported products directly.

⁷⁶ Refer to attachment 13 for a summary of this discussion.

⁷⁷ Refer to section 2. (1) of chapter 2.

⁷⁸ In case of a free allocation of emission allowances, participating domestic industries may regard the marketable price of emission allowances allocated for free (opportunity cost) as the emissions cost and pass on this through the price of their products. In this case, it should be noted that non-participating domestic industries cannot enjoy a price decrease of raw materials etc., and thus carbon emissions can be restrained.

(2) Evaluation from the perspective of industrial policies

Inclusion method used in parallel with rebate on exports contributes to securing the international competitiveness of the participating domestic industries in both the domestic and overseas markets. In contrast, this method will increase the cost of non-participating domestic industries by raising the prices of the imported raw materials and the intermediate goods to which this method is applied⁷⁹. In addition, to avoid an increase in carbon emissions in the country, non-participating domestic industries have to bear the costs equivalent to the carbon emissions costs that are caused by the use of rebate on exports.

Alleviation method contributes to securing the international competitiveness of the participating domestic industries in domestic and overseas markets. This method will also mitigate the costs of carbon emissions attributable to the manufacture of products for not only exports but also domestic sales of the participating domestic industries. On the other hand, while the non-participating domestic industries will be able to enjoy a decrease in the prices of raw materials and intermediate goods provided by the participating domestic industries⁸⁰, they will have to bear the carbon emissions costs equivalent to remission or exemption of the costs that is granted to the participating industries in order not to increase the total amount of carbon emissions in the country.

3. Effect of border adjustment measures under trade patterns of the participating industries

The discussions in the above sections are based on the assumption that competing industries in less stringent regulation countries export their products mainly to stringent regulation countries. However, in reality, there could be various trade patterns; hence, we study the effects of the other trade patterns on border adjustment measures⁸¹.

(1) Reverse import by overseas subsidiaries

In the above section, this group has an assumption that exporters are industries in less stringent regulation countries that are competing with domestic industries. However, in reality, the domestic industries are actively importing products from less stringent regulation countries by establishing subsidiaries or cooperating with the local industries there (reverse import). It is a form of carbon leakage whereby domestic carbon constraints cause expansion of such type of trade. While applying border adjustment measures to such reverse-imported products from less stringent regulation countries may contribute to limiting carbon leakage, it may reduce the profits of the domestic industries and diminish the international competitiveness. To take into account the merits and demerits of implementing border adjustment measures with respect to

⁷⁹ In accordance with the general concept of trade theory, if cost is imposed on certain imported products especially in a small country, the producer's surplus will increase while the consumer's surplus will decrease, and the total surplus will decrease. This decrease of surplus cannot be made up with revenue based on a levy of the said cost.

⁸⁰ Refer to footnote 78.

⁸¹ Refer to attachment 14 for a summary of this discussion.

the international competitiveness of domestic industries in domestic markets, it is necessary to compare the merits attributable to an increase in prices of products imported from overseas industries in competitive relationships with the domestic industries, which bear the increase in costs of the carbon constraints, with the demerits attributable to an increase in price of the reverse-imported products.

(2) The import of intermediate goods

The above discussions are mainly based on the assumption that “finished products” are traded. However, in reality, “intermediate goods” such as parts and input goods are also being actively traded. Carbon leakage may be generated by importing intermediate goods from less stringent regulation countries if an industry has a series of manufacturing processes some of which have a large amount of carbon emissions and others do not, against the background of such differences in the amount of carbon emissions between the manufacturing processes.

If a carbon constraint is imposed on an industry, the industry may avoid the carbon constraint by moving the process that has a large amount of carbon emissions⁸² to a less stringent regulation country. Then, the industry imports intermediate goods manufactured in the less stringent regulation country and conducts the manufacturing process that has a small amount of carbon emissions. Applying the border adjustment measure to such imported intermediate goods may diminish the profits of the domestic industry (i.e., the importers of the intermediate goods) and weaken the international competitiveness although it may contribute to carbon leakage reduction.

4. Quantitative evaluation of the effect of carbon leakage measures

Analyzing the effect of carbon leakage measures using a more detailed general equilibrium economic model⁸³ that includes household and business sectors in a country and overseas will enable us to conduct quantitative evaluation of the effects on broader economic aspects like volume of trade, production, and consumption in each country as well price increase.

According to the results of a recent general equilibrium analysis⁸⁴, it has been confirmed that, in developed countries, implementing a rebate on exports in combination with the imposition of a border adjustment measure on imported products has stronger effects on preventing carbon

⁸² In cement manufacturing, for instance, the process in which the clinker (intermediate goods for cement) is manufactured by burning powdered raw material in a kiln consumes more than half the amount of energy required in the entire process.

⁸³ The general equilibrium analysis is a relatively short-term analysis, and there are some criticisms claiming that it does not take into account structural changes such as innovation of technology and the spill-over effect. For instance, there is an argument (Porter’s assumption) that introduction of a properly designed carbon constraint triggers an innovation of technology, resulting in improving the international competitiveness of domestic enterprises. However, it is difficult to assess the accuracy of such an argument with the general equilibrium analysis.

⁸⁴ The Effect of Border Adjustment Measures as a Countermeasure to Climate Change: Qualitative analysis on the Japanese economy (Takeda, Shiro, Tetsuya Horie, Toshihide Arimura, 2010) (Supporting material of the third meeting of the Research Group on Environment and Tariff Policies), Reconciling Climate Change and Trade Policy (World Bank Policy Research Working Paper, 5123, 2009)

leakage than only applying the border adjustment measure. This implies that industries in developed countries compete vigorously in overseas markets as well as domestic markets. For Japan that entirely depends on exports, it is strongly required to secure the international competitiveness of domestic industries in overseas markets. On the other hand, attention has to be given to the upward pressure on domestic carbon emissions attributable to rebates on exports.

In addition, if the level of cost to be imposed on imported products with the border adjustment measure is determined on the basis of carbon emissions during production in the exporting country, a more effective outcome for carbon leakage measures is achieved than if the cost level is determined on the basis of carbon emissions during production of the like domestic products in the importing country. This suggests that imposing the costs based on the predominant method of production (PMP) is more effective in reducing carbon leakage than that based on the best available technology (BAT)⁸⁵.

Further, with regard to the effect of carbon leakage on carbon emissions around the world, the above-mentioned analysis shows that emissions reduction in developed countries attributable to carbon constraints is higher than emissions increase in developing countries attributable to carbon leakages. As a result, carbon emissions of the whole world do not increase.

On the other hand, one study⁸⁶ shows that over protection of the participating industry could cause a strong adverse effect of increasing carbon emissions in the country where the measure is implemented (reverse leakages), which depends on the design of border adjustment measures. In such a case, less stringent regulation countries are strongly affected by trade because these countries are forced to reduce more carbon emissions (production volumes) than the ones attributable to carbon leakage actually generated.

A report by the Organization for Economic Co-operation and Development (OECD)⁸⁷ compiled the various results of a general equilibrium analysis recently conducted by experts from various countries and summarized their trends. This summary is as follows:

- Outcome of analyses showing that border adjustment measures reduce domestic economic welfare can be found in most of the general equilibrium analyses. An example analysis points out that net base economic gain can be ensured from border adjustment measures, but even when that is the case, the gain is small and ensured in only part of the countries amongst those adopting the measures.
- Border adjustment measures may not have the anticipated effects of preserving industry's competitiveness. The results of analyses are divided in this regard. A majority of analyses conclude that border adjustment measures would have at least a mild protective effect on trade-exposed and energy-intensive industries while others conclude the opposite.
- If domestic emissions reduction targets exist, because border adjustment measures would

⁸⁵ Refer to section 2. (1) of chapter 2.

⁸⁶ Tackling Leakage in a World of Unequal Carbon Prices, Climate Strategies (Dröge, S., 2009)

⁸⁷ BORDER CARBON ADJUSTMENT AND FREE ALLOWANCES : RESPONDING TO COMPETITIVENESS AND LEAKAGE CONCERNS (OECD [2009])

raise the domestic costs of mitigation of global warming, domestic demand including demand for the output produced by the industries that have to be protected through border adjustment measures will be suppressed. Further, some energy-intensive industries face cost increases due to the rise in the price of imported inputs for production. The net impact can be a decline in production in energy-intensive industries.

- The increase in domestic cost due to border adjustment measures (carbon price) for global warming mitigation is incurred increasingly by the sectors that are not targeted for protection via border adjustment measures. This finding is important in terms of the scope of implementation of border adjustment measures. Narrowing the scope may simply transfer emissions costs from high polluting industries to low polluting ones with potentially no net environmental gain. A border adjustment measures scheme with wider scope may minimize this transference of cost, but could be costly to implement.
- Border adjustment measures in one country are likely to have a negative effect on economic growth of another country. While such measures will impose costs on the overseas economy as a whole, it is unlikely that all countries to which border adjustment measures are applied would bear a net cost. This would depend on the intensity of trade and economic relationships between countries, the concentration of border adjustment measures-applicable products in a country's export, and the extent to which countries are able to shift production in response to border adjustment measures. Countries highly subject to the highest costs are those with strong economic ties to other countries implementing border adjustment measures, energy intensive exports, and rigid or possibly small economies. Negative effects on trading partner's economic growth could offset the beneficial effects of border adjustment measures.
- While border adjustment measures may impose costs on whole economy or global economy and may not adequately resolve competitiveness issues, they do appear to have potential for reducing global carbon emissions and carbon leakage. However, the key question is whether scale of such reductions is sufficiently large. The estimations of the effectiveness of border adjustment measures in reducing carbon leakage vary from zero to nearly 100%.

5. Effect of encouraging developing countries to participate in international frameworks

As shown in section 5 (2) of chapter 1, when Europe and the U.S. referred to the introduction of border adjustment measures, their intention to encourage developing countries to participate in the international framework could be observed.

There is an argument about whether introduction of carbon leakage measures by stringent regulation countries or its pronouncement will encourage less stringent regulation countries to participate in international frameworks and induce them to introduce carbon constraints. A previous study⁸⁸ shows that inclusion method may have such effects while the alleviation method

⁸⁸ INTERNATIONAL TRADE LAW AND THE ECONOMICS OF CLIMATE POLICY: EVALUATING THE LEGALITY AND EFFECTIVENESS OF PROPOSALS TO ADDRESS COMPETITIVENESS AND LEAKAGE

may not. However, it is mentioned that, even in the case of inclusion method, as there is a risk that introduction of such measures or its pronouncement may cause developing countries to take a hard line toward the negotiations and provoke a cycle of protectionist trade measures. Therefore, it would be fruitful to design a measure in a way that will reduce the risk, such as combining it with necessary assistance for developing countries that will introduce carbon constraints.

6. Conclusion

(1) Inclusion method

This method will encourage less stringent regulation countries to reduce their carbon emissions to a certain degree and contribute to curb domestic carbon emissions by maintaining the domestic carbon constraint, preventing carbon leakage that shifts carbon emissions to less stringent regulation countries by restraining import substitution. However, because this method cannot affect overseas transfer significantly, it alone may not be sufficient enough as a carbon leakage measure. On the other hand, this method in combination with rebate on exports will restrain overseas transfer and can be a very effective measure to prevent carbon leakages. However, it is likely to have an adverse effect on reducing domestic carbon emissions.

Furthermore, as this method can have a strong impact on trade as well as carbon emissions, it is necessary to carefully assess its impact on the international economy.

On the international legal aspect, there are still various issues with introducing this method of carbon emission measures in relation to WTO rules. To resolve these issues, a measure based on this method must have a sufficient effect in terms of an environmental policy and include attention to developing countries to ensure consistency with the UNFCCC⁸⁹.

(2) Alleviation method

While this method may contribute to maintaining the international competitiveness of the participating domestic industries and prevent carbon leakage by limiting import substitution and overseas transfer, it is highly likely to have adverse effects on the reduction of domestic carbon emissions by excluding these industries from the scope of the carbon constraints.

On the international legal aspect, the introduction of this method has issues in relation to the SCM Agreement, where the system must be designed in a way that does not make export performance or the use of domestic over imported products a condition for the cost mitigation in order for the measure to fall into prohibited subsidies and that does not have adverse effects on the interest of WTO Members in order for the measures not to fall into countervailing measures.

Chapter 5. Environmental Goods

1. Significance of the reduction or elimination of tariffs on environmental goods

CONCERNS (Jason E. Bordoff [2009]), Encouraging Developing Country Involvement in a Post-2012 Climate Change Regime: Carrots, Sticks or Both? (Zhang, Z. X. [2009])

⁸⁹ Refer to footnote 70.

Another approach to climate change from the perspective of tariff policies is the liberalization of trade in environmental goods. The importance of trade liberalization in environmental goods has been noted in recent international fora such as G8. For instance, a declaration by the leaders of the summit held in L'Aquila, Italy in July 2009 states that the elimination or reduction of tariffs to trade in environmental goods and services is essential for promoting the dissemination of cleaner, low-carbon energy technologies and associated services worldwide⁹⁰.

A WTO Secretariat note in 2007⁹¹ states that the reduction or elimination of tariffs on environmental goods has three beneficial aspects: trade, environment, and development (“triple win”). From the trade aspect, consumers will be able to purchase environmental goods at more reasonable prices. Moreover, from the environmental aspect, it is expected that standard of living would be improved as a result of better access to goods required for environmental protection and enhanced efficiency in the use of energy. Further, benefits from the developmental aspect are being pointed out that will realize a better access to goods required by developing countries for coping with environmental issues at each phase of development, and enhancing the innovation of technologies in developing countries as well as technology transfers.

2. Discussions on environmental goods in the WTO Doha Round

In the WTO Doha Round (Doha Development Agenda) established in November 2001, against the background of an increasing global awareness on environmental issues, “trade and environment” became one of the categories of negotiations in addition to conventional talks on tariff reduction for agricultural products and non-agricultural products (industrial products, forest/fishery products). The Doha Ministerial Declaration at the launch of the Doha Round clearly specifies trade liberalization of environmental goods as a subject of talks in “trade and the environment”⁹².

During the Doha Round negotiations, with regard to the free trade of environmental goods, discussions on approaches in promoting the reduction/elimination of tariffs and identifying the environmental goods to be included therein have been conducted. A report issued by the Chairman

⁹⁰ Declaration by leaders of Hokkaido Toyako G8 Summit in 2008 (abstract of paragraph 34) “Efforts in the WTO negotiations to eliminate tariffs and non-tariff barriers to environmental goods and services should be enhanced with a view to disseminating clean technology and skills. Additionally, consideration should be given to the reduction or elimination of trade barriers on a voluntary basis on goods and services directly linked to addressing climate change.”

Declaration by leaders of L'Aquila G8 Summit in 2009 (abstract of paragraph 68) “The elimination or reduction of tariff and non-tariff barriers to trade in environmental goods and services is essential to promote the dissemination of cleaner, low-carbon energy technologies and associated services worldwide. Efforts should be intensified to ensure a successful outcome of the ongoing WTO negotiations on the liberalization of environmental goods and services.”

⁹¹ WTO Secretariat note “REVISION OF THE SYNTHESIS OF SUBMISSIONS ON ENVIRONMENTAL GOODS” (JOB (07)/137 on September 17, 2007). It discusses goods related to climate change measure as well as goods related to countermeasures against various environmental issues such as air pollution, water contamination, and waste disposal.

⁹² Paragraph 31 of the Doha Ministerial Declaration. The subjects of negotiations include the following: (1) the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs) (Basel Convention etc.), (2) procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for granting observer status, (3) the reduction or, as appropriate, elimination of tariff and non-tariff barriers of environmental goods and services.

of the Special Session of the Committee on Trade and Environment at the stock taking of the Doha round negotiations in March 2010⁹³ presented a list of various proposals submitted by the members since July 2008, and encouraged them to submit further proposals. In future, it is expected to have further discussions by considering additional proposals from various countries.

(1) Discussion on approaches in promoting the reduction/elimination of tariffs on environmental goods

In promoting trade liberalization of goods effective for environmental measures, a discussion has been held on approaches regarding how to specifically determine the goods applicable for the reduction/elimination of tariffs.

a) List approach

There is an approach known as the “list approach” in which members of the WTO agree on a list of individual goods applicable for the reduction/elimination of tariffs (tariff line base) and each country decreases its concession rate based on that list. Till date, nine developed countries and regions including Japan⁹⁴ (Friends of environmental goods), the Philippines, and Saudi Arabia made proposals based on the list approach.

The merit of this approach is that it enhances the predictability of the relevant parties by specifying applicable goods in advance. Ensuring tariff preferences for specified environmental goods in terms of tariffs is expected to stimulate the economic activities of parties involved in the manufacturing and sales of such goods, leading to an expansion of trade. Further, it is expected that manufacturers promote the input of human and financial resources to such goods and innovate the technologies that are indispensable in dealing with environmental issues. Moreover, under this approach (unlike the after-mentioned “project approach”), there is a practical merit for which it is expected that only a review and checkup of the application form is required in customs import clearance and investigation after import is not required.

However, it is not easy to reach a multilateral agreement on the definition of environmental goods. Since the majority of the products that are regarded as environmental goods use advanced technology that has a comparative advantage for developed countries, developing countries strongly express their concerns claiming that this approach is advantageous for developed countries. In addition, if new goods are developed using innovative technology that was not expected during the initial agreement, re-negotiations on the list of applicable goods would be required. Further, with this approach if the reduction/elimination of tariffs is applied to “parts and components” (which is not finished products), it cannot be denied that such parts and components may be used for purposes other than environment-related issues after being imported. Moreover, technically, if goods with the latest technology are recognized

⁹³ “Report by the Chairman, Ambassador Manuel A. J. Teehankee, to the Trade Negotiations Committee for the purpose of the TNC stocktaking exercise” (TN/TE/19 on March 22, 2010).

⁹⁴ Japan, the U.S., EU, Canada, New Zealand, Switzerland, Norway, South Korea, and Taiwan.

as environmental goods, it is difficult to implement with respect to tariff classifications or identification at customs.

b) Project approach

The “project approach” in which the reduction/elimination of tariffs is applied to goods used in environment-related projects based on the usage and objective of the products, has gained support from some of the developing countries. For instance, in a joint proposal by Argentina and India in 2007, the reduction/elimination of tariffs is applicable to goods that are imported by an entity that conducts environmental activities. This approach has the merit that it involves no need to discuss the definition of environmental goods; however, another issue is to ascertain what an environment-related project is. As with the case of environmental goods, it is difficult to reach an international agreement on the definition of environment-related project; in reality, it is expected that it relies on the operations of countries that implement the projects. In that case, it is possible that the authority of importing countries in which a project is conducted certifies the project, selects entities that operate it, etc. in an arbitrary manner. It must be acknowledged that the predictability for the exporter is significantly lower compared with that of the list approach⁹⁵. In addition, in terms of implementing the project approach, it is necessary to confirm that the imported goods are, in fact, used in environmental projects not only at the time of import customs inspection but also after importation by conducting follow-up investigations, which is expected to be cumbersome on a practical level.

(2) Discussion on the definition of environmental goods

When employing a list approach, it is necessary to reach an agreement on a common list of products subject to the reduction/elimination of tariffs by the end of the Doha Round negotiations. Till date, Friends of environmental goods, which include Japan, the Philippines, and Saudi Arabia, have proposed a list of items of interest. In April 2007, as a base for discussion, Friends of environmental goods proposed 153 items across 12 categories, which comprise air pollution control, management of solid and hazardous waste and its recycling system, clean up or remediation of soil and water, renewable energy plants, heat and energy management, waste water management and potable water treatment, environmentally preferable products, cleaner or more resource efficient technologies and products, natural risk management, natural resources protection, noise and vibration abatement, and environment monitoring (the same list was re-submitted in October 2009). In addition, the Philippines proposed 17 items of renewable

⁹⁵ In a proposal by Argentina in November 2009, it was suggested that the reduction/elimination of tariffs should be applied to those goods used for projects under the “Clean Development Mechanism” (CDM project) of the Kyoto Protocol, and it is assumed that a certain amount of predictability is ensured. However, since CDM projects require a tremendous amount of time for processing before performing operations, such as the approval by governments of the investing country and host country, review by a third party certifier, and approval of registration by the CDM Executive Board, the number of registered projects has not increased as expected when the CDM had been originally established.

energy-related goods and Saudi Arabia proposed 263 items that included carbon capture and storage-related goods, and goods related to gas flaring emission reduction technologies (those that undergo the incineration treatment), which is generated during crude oil production. In addition to submitting a proposal as a member of Friends of environmental goods, Japan independently proposed a list of 53 energy efficient goods as stated below.

(3) Proposal on energy efficient goods by Japan

In November 2009, Japan proposed including goods with high energy efficiency and less greenhouse gas emissions (so-called “energy efficient goods”) in the definition of environmental goods with the aim of contributing to the resolution of climate change issues, and submitted a list of 53 items in February 2010. The list includes hybrid vehicles, electric vehicles, LED lighting, and energy efficient home electronics (inverter air conditioners, inverter refrigerators, liquid-crystal display, and so on).

Further, since it is not easy to identify the targeted environmental goods as stated in (1) (a) because of the fact that energy efficient goods normally employ the latest technology, Japan proposed that each country should adopt harmonized energy efficient standards⁹⁶ and certify the energy efficient goods as per such standards to identify the energy efficient goods subject to the reduction/elimination of tariffs.

Conclusion

Although carbon leakage measures can be designed as a system that restrains global carbon emissions by limiting carbon leakages, they can also be disguised as protective trade. When the U.S. and Europe try to enhance carbon constraints such as domestic emission trading schemes in the future, it is expected that carbon leakage issues will be discussed more vigorously at the international level. Japan should participate in such discussions assuming not only a position that implements carbon leakage measures but also the one that is subject to carbon leakage measures by foreign countries.

Further, with regard to trade liberalization of environmental goods, although the discussion is already being held at the WTO Doha round, efforts should be made continuously to achieve concrete tariff reduction/elimination. In doing so, with respect to the energy efficient goods that Japan has proposed, it is necessary to put forward consideration on establishing an international energy efficient standard, which will become a base for the proposal as well as for technical problems like identification capabilities at customs.

Given that environmental efforts including issues in the present study have become socially important, it is necessary, in planning tariff policies, to consider the relationship between them and environmental issues.

⁹⁶ With respect to energy efficient standards, “International Energy Star Program” that was agreed upon by seven developed countries is implemented, and various countries have established independent standards.