
BORDER ADJUSTMENTS IN JAPANESE CLIMATE POLICY

POLICY DISCUSSION AND PERCEPTION OF STAKEHOLDERS

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Executive Summary

BORDER ADJUSTMENTS IN JAPANESE CLIMATE POLICY

The carbon leakage debate has been attracting much attention of policy makers, stake holders and researchers related to climate change policies in the European Union (EU). Their concern comes from an idea that unilateral carbon pricing at EU level could undermine international competitiveness of energy-intensive industries, and the industries' activities could be shifted to other countries where climate change mitigative policies are less stringent. Border adjustment is one of options that could be chosen to prevent or minimize carbon leakage.

The same logic could be applied to Japan. Many Japanese industries consider the target is a hard goal to achieve, and yet, they are making their best efforts to reduce greenhouse gas (GHG) emissions. They are also concerned that Japanese industries are affected by the stringent Kyoto target, while their main competitors, industries in the United States and China, do not face such obligations. Nevertheless, little debates on border adjustment have been heard in Japan so far. Why not in Japan? Is competitiveness issue not perceived serious in Japan? Otherwise, have the debates been made without being noticed?

This working paper aimed at reviewing Japan's perception on carbon leakage and on border adjustment measures to minimize the leakage. An investigation was made to examine Japan's recent climate change policies and policy making process, and an interview survey was conducted for some key stakeholders in Japan who could be affected by carbon leakage or its countermeasures. The key findings are as follows:

As this paper indicates, although Japanese climate policy has evolved over time, its main policies and measures are still on a voluntary basis, starting with the Keidanren Voluntary Action Plan. Even national emissions trading scheme recently introduced as a trial is still based on "voluntary" participation and target setting. Toyako Summit in July 2008 has brought a big change to Japanese decision making process, which would make more a drastic and higher level of political decision on climate change possible.

Carbon leakage or impact on international competitiveness has been one of the agenda in the discussion on carbon tax/ eco tax and emissions trading especially in the Central Council of the Environment (MOE) since 2001. According to analysis presented to the Subcommittee of the Central Council of the Environment, impact due to increase in energy cost are very diverse depending on industrial sectors: a couple of energy intensive sectors such as steel and ceramic are likely to be affected in case of increase in carbon price.

Policy debates on border adjustment appear inexistent in Japan. First reason is that Japanese climate policy based on voluntary actions might not be consistent with the idea of border adjustments. Second reason is that Japanese industries have been provoked by their perception that commitments under the Kyoto Protocol were not fair. Their perception of fairness consists not only of carbon leakage to developing countries, but also of levels of emission mitigation efforts which industries in other countries face. Thus, their frustration has been directed towards architecture of international institution as a whole, and not towards emission mitigation activities in developing countries exclusively.

Regarding perception of stakeholders, results of interview show that almost all the interviewees were of negative view about border adjustment measures, which seemed to reflect Japan's perception on this issue in general. This also might explain why there is almost no debate or research on this topic in Japan.

Although some merits were recognized, several barriers were suggested which need to be overcome in case of the implementation. Even those industries that are concerned of carbon leakage were not supportive of border adjustment measures. Some key points raised against border adjustment measures were;

(1) Environmental effectiveness: border adjustment measures will do good for environmental purposes in case of imports, but it will reduce effectiveness of domestic emission reduction measures on goods that are exported to other countries, because carbon tax or emission allowances will be cleared for export goods.

(2) Consistency with the WTO rules: industries that are likely to be affected by domestic emission mitigation policies are, at the same time, those that are basically in favor of free trade, because their products are sold outside Japan. Any measures that could be regarded as to be inconsistent with the WTO rules are not popular among Japanese industries, even if the measures were aimed at protecting themselves.

(3) Technical feasibility: It is difficult to track back all production process and to obtain data on GHG emissions. Even if the BA were implemented for selected materials only, BA could be evaded via the third country.

Japanese stakeholders as well as the government seem to consider BA to have too many barriers to overcome. Thus, many of them estimate the BA will not be introduced even in the EU and the United States, where debates on BA are made more actively. They consider that emission mitigation commitments for non-Annex I countries in multilateral agreements are more effective and simple to overcome the carbon leakage problem than unilateral BA measures. In fact, that is the logic underlying Japan's position at international negotiating meetings, which strongly insists on emission mitigation commitments for major emitting developing countries.

As discussions and studies on carbon leakage and border adjustment measure in the EU and United States progress, it will be interesting to compare the results of this interview survey with similar surveys conducted in the EU and United States and see whether any gaps exist. Should any such gap be found, it would be important for Japanese stakeholders to start discussing this topic. At the same time, it is also important for researchers to investigate the level of carbon leakage that is most likely to occur due to emission reduction policies taken by Annex I countries.

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I. Introduction

The carbon leakage debate has been attracting much attention of policy makers, stake holders and researchers related to climate change policies in the European Union (EU). Their concern comes from an idea that unilateral carbon pricing at EU level could undermine international competitiveness of energy-intensive industries, and the industries' activities could be shifted to other countries where climate change mitigative policies are less stringent. Border adjustment is one of options that could be chosen to prevent or minimize carbon leakage. There are several ways to adjust carbon leakage at borders. Imposing carbon tax on products that are imported from less-stringent countries is one option. Obliging importers of certain products from abroad to purchase emission credits is another. In any case, border adjustment is a means to maintain the level of environmental effectiveness of climate policies introduced unilaterally in one country, while at the same time a strategy to protect energy-intensive industries in those countries that could be over-affected by the unilateral climate policy.

The same logic could be applied to Japan. Although Japan has not introduced a cap & trade type of domestic emissions trading scheme at full scale, it is a Party to the Kyoto Protocol, and it sincerely aims at reaching its Kyoto target for the 2008-2012 period, which is six percent reduction from 1990 levels. Many Japanese industries consider the target is a hard goal to achieve, and yet, they are making their best efforts to reduce greenhouse gas (GHG) emissions. They are also concerned that Japanese industries are affected by the stringent Kyoto target, while their main competitors, industries in the United States and China, do not face such obligations. Nevertheless, little debates on border adjustment have been heard in Japan so far. Why not in Japan? Is competitiveness issue not perceived serious in Japan? Otherwise, have the debates been made without being noticed?

The objective of the paper is two-fold. The first objective is to understand Japan's perception on border adjustment at policy-makers' and industries' levels. This objective is fulfilled by over-viewing Japanese climate policy and its recent changes, and by analyzing how the arguments on border adjustment measures have been dealt with in Japanese climate policy. The second objective is to recognize actual Japanese stakeholders' perception on border adjustment arrangements. This goal is reached by conducting a series of interview survey on perception of major business sector and environmental NGOs in Japan.

II. Overview and recent trends of Japanese climate policy

Japan has basically been a supporter of climate change mitigative activities since an early stage of international cooperation on climate change, and has been a supporter of Kyoto Protocol since its adoption. Hosting the 3rd Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) (COP3) in 1997 is one good example of such basic position of Japan. Development of Japanese climate policy has been accelerated since the adoption of the Kyoto Protocol.

10 days after the COP3, adoption of the Kyoto Protocol, the Global Warming Prevention Headquarters was established in the Cabinet so that specific and effective measures would be

promoted for implementation of the Kyoto Protocol. This Headquarters decided in June 1998 the Guideline of Measures to Prevent Global Warming. This 1998 Guideline put together all the measures proposed by the ministries concerned. And then, the Law concerning the Promotion of the Measures to Cope with Global Warming was adopted in October 1998 by the Parliament. The Law provides a legal framework for implementation of the 1998 Guideline. After the Marrakech Accords concluded in 2001, the 1998 Guideline were revised and the 1998 Law was also amended just before the Japan's ratification of the Kyoto Protocol. After entry into force of the Kyoto Protocol in 2005, mandated under the 1998 Law, the Cabinet adopted the Kyoto Protocol Target Achievement Plan (KPTAP) on April, 2005. Together with the revised Guideline, this Plan provides a list of planned measures for climate change mitigation at national level.

The climate policy in Japan has been evolved legally based on Law Concerning the Promotion of the Measures to Cope with Global Warming enacted in 1998. This Law establishes general framework for measures to cope with global warming, including institutional framework for instance, by putting in place Headquarter for promoting in the Cabinet, led by the Prime Minister and by stipulating each obligation of Government, local authorities, companies and citizens. The Law provides for legal basis for adopting measures by Government and local authorities. The above KPTAP mentioned above is a good example. It also provides for obligation for Government and local authorities to reduce and/or limit their emissions. At the same time, companies and citizens have duty to make efforts to reduce and/or limit their emissions and to cooperate on measures taken by Government and local authorities. Government, local authorities, designated large-emitter companies have obligation to report their emissions annually. In case of non-reporting or false-reporting, financial penalty (up to 200,000 yen□1560Euro) will be imposed.

On the other hand, any tangible climate policy directed at reducing GHG emissions including carbon tax and emissions trading have so far met strong objections from industries. Thus, most measures that have been introduced under the Law are on a voluntary basis, including the Keidanren Voluntary Action Plan, which is the core part of Japanese mitigation measures in the industrial sector (Nippon Keidanren, 2008). Under the latest Action Plan, each industry association voluntarily pledges its target, which is reviewed by government, on an annual basis. It is voluntary from two aspects: first, each industry association and each company belonging to the association voluntarily participates in the Plan; second, the form of target, absolute or relative, and level of the targets, are determined by participating company itself.

Most of mandatory measures in Japanese climate policy, which are very rare, are the ones taken to improve energy efficiency under the Law Regarding the Rationalization of Energy Use enacted in 1979 and amended. This Law tackles CO₂ emissions reduction from energy use, which occupy about 90 % of GHG emissions in Japan and it mainly provides for 4 measures. First, large emitting companies have obligation to improve their energy efficiency by 1% annually. They have to appoint energy managers, to submit their planned measures and to make a periodic report. About 13,000 factories are currently covered. Second, owners of buildings larger or equal to 1,500m² of total floor space (called designated buildings) have obligation to report on sufficient energy efficiency measures taken on new construction and large-scale renovation and to make a periodic report on the maintenance. Third, producers and importers of electrical appliances such as computer, domestic appliances specified by the Ordinance are obliged to keep energy efficiency of their products not lower than the standard

fixed on basis of the most efficient energy products commercially available in the market (called the Top Runner Method). Fourth, transportation companies and cargo owners have obligation to submit long- and medium-term plan and to make a periodic report on energy use (from Apr. 2007 on)

The KPTAP, which has compiled measures to fulfill Kyoto target, was enacted in April 2005, and has been reviewed periodically since then. Recommendations to introduce more stringent climate policies are made each time the Plan is reviewed, but they do not obtain enough support from the side of industries to move Japanese government. Carbon tax, or environment tax, have been discussed for a long time, mainly under the initiative of Ministry of the Environment (MOE), but no carbon or environmental taxes has been introduced so far. The theme has been observed in agendas of committees of the Ministry in the last two decades or so, but the argument is encountered by strong criticism each time it is dealt at the committees.

Similar experiences were observed as for debates on domestic emissions trading, until June 2008. Then Prime Minister Yasuo Fukuda proposed a vision so-called "Fukuda Vision", which called for a stronger position on climate policy, including domestic emissions trading scheme (Prime Minister's Office, 2008a). Based on the Vision, domestic emissions trading scheme was introduced on a trial basis in October 2008.

III. New trends of decision-making on climate change in Japan in 2007-2008

The current climate policy in Japan, as could be explained in the previous section, has not been able to exert enough environmental effectiveness to reduce Japan's GHG emissions to reach the Kyoto target, as well as to change the growing trend of the emissions. Despite a severe recession in the 1990s and even after the adoption of the Kyoto Protocol in 1997, emissions have not been on the decrease. And emissions level for recent 2-3 years is reported to be 6 to 8% above the baseyear level. In order to meet its reduction target under the Kyoto Protocol, 6% below its baseyear level, Japan needs to cut about 12 to 14% during 1st commitment period, 2008 to 2012.

On the other hand, atmosphere surrounding the insufficient climate legislations in Japan seems to have started to changes in several ways. In Japan, decisions on climate change have usually been made through discussions among related ministries and agencies (particularly the Ministry of Economy, Trade and Industry (METI) and the Ministry of the Environment (MOE)) (Kameyama, 2001; 2004). Very few decisions have been made by political leaders except in crucial situations, and the executive branch has almost always led the discussions and made the decisions. However, the situation has changed in recent years. Political leaders are now more actively involved in high-level discussions, and the Prime Minister himself sometimes makes decisions on climate change. This Chapter outlines the changes in the decision-making procedure in Japan, and the country's stance on the international framework for the post-2012 international framework (international institutions after the end of the first commitment period of the Kyoto Protocol), for which decisions are being made by a new procedure.

1. Changes in the decision-making procedure

When the Kyoto Protocol was negotiated in 1996 and 1997, the position of Japan was decided mainly by the Ministry of International Trade and Industry (present METI) and the Environment Agency (present MOE). The Ministry of Foreign Affairs (MOFA) participated in the discussions to form an integrated opinion of the Japanese government, but did not delve deeply into the actual issues. Upon those occasions when the ministries failed to form a consistent whole, the Prime Minister or the Cabinet suggested a compromise. This process has not been used in recent years. The change started in 2007 due to three main reasons:

(1) The Toyako Summit held in July 2008, at which global warming was discussed, encouraged the active involvement of the then Prime Minister and the Ministry of Foreign Affairs in discussing and deciding measures to tackle global warming. Unlike the Conference of the Parties to the United Nations Framework Convention on Climate Change, the body responsible for G8 summits is the Ministry of Foreign Affairs. Since the Gleneagles Summit in 2005, climate change has been a central topic of the G8. Thus the Ministry of Foreign Affairs, which had to play a central role in the Toyako Summit, was deeply involved in the discussions. Similarly, the Prime Minister, who hosted the Summit, was interested in demonstrating his leadership on the climate change issue (Ministry of Foreign Affairs, 2008).

(2) The increasing interest of the public concerning global warming stimulated the interest of politicians, resulting in increasing involvement of political leaders in administration. The increasing interest of the public was observed not only in Japan, but throughout the world. In 2007, the Intergovernmental Panel on Climate Change submitted the fourth report, which stated that global warming is scientifically beyond doubt and that air temperatures have already started rising (IPCC, 2007). Mr. Al Gore, who was vice president of the United States, won the Nobel Peace Prize for enlightening people on climate change, and in the autumn of 2007, the United Nations General Assembly on climate change was held. These factors increased the knowledge and interest of Japanese politicians on climate change.

(3) The Ministry of the Environment, which was at a disadvantage in the deliberations among ministries, welcomed the involvement of political leaders. In absence of political pressure, environmental protection is easily subjugated to economic interests. Decisions on environmental protection can be made only when they are supported by public opinion and political leaders.

With this background, the number of stakeholders who want to participate in making decisions on climate change has increased since 2007, resulting in Japan making decisions that were not seen during the negotiations for the Kyoto Protocol.

2. Decision-making process on climate change in Japan

As a result of such changes in procedure, Japan is capable to make more drastic decision in tackling climate change.

At the start of 2007, the Prime Minister of Japan was Shinzo Abe. He had been appointed Prime Minister in September 2006 but had rarely expressed opinions on climate change and was not known for being enthusiastic about environmental protection. In his address on

administrative policy on January 16, 2007, he mentioned a plan for achieving the goals of the Kyoto Protocol and giving support to developing countries but only after talking about creating a sound and safe society. Just before giving his speech, Abe visited European countries to seek their understanding on the abductions by North Korea. At that time, the EC proposed a package of climate and energy policies, and climate change was the central topic in all the countries he visited, thus sparking Abe's interest in climate change.

The result was "Cool Earth 50" proposed by Abe in May 2007 (Prime Minister's Office, 2007). It was not any ministry, but the Prime Minister himself who decided the proposal. The proposal consisted of three key components: (i) long-term strategies for halving global greenhouse gas emissions by 2050, (ii) medium-term approaches on the framework after 2012, and (iii) policies for fulfilling the 6% reduction commitment of the Kyoto Protocol. The long-term objective particularly attracted attention of political leaders around the globe. In the G8 Summit held in Heiligendamm, Germany, in June 2007, Prime Minister Merkel of Germany, who hosted the Summit, and other European nations requested the other members to commit to halving global emissions by 2050. However, the countries could not reach an agreement because President Bush of the United States strongly opposed, and so the summit countries announced that they would "aim to at least halve global CO₂ emissions by 2050". Japan could follow the topic because it had proposed the goal in advance.

Probably, Abe wanted to maintain the position obtained in Heiligendamm until the Toyako Summit in 2008. However, he resigned soon after the Heiligendamm Summit. His successor, Yasuo Fukuda, had no personal interest in environmental problems but had no reason to strongly oppose environmental measures. Fukuda made strategic arrangements slowly but steadily, and took the lead on climate change at the Toyako Summit.

The 13th Conference of the Parties to the UNFCCC (COP13) took place in Bali, Indonesia in December 2007. Central debate of the negotiation at the Bali meeting was on how to start a new negotiation process to reach an agreement on future international climate regime for beyond 2012. Japanese government's position held two main points (Government of Japan, 2007). The first point was that the expected outcome should include emission mitigation commitments not only for the developed countries but also for developing countries, at least for some major emerging economies such as China and India.

The second point was that commitments of the Parties should include "sectoral approach". At this moment, Japanese government had not consolidated its position on whether or not to accept a quantitative emission reduction target, a type of commitment similar to that contained in the Kyoto Protocol. This situation was mainly due to strong objection of some key industries in Japan against such emission targets. For those industries, six percent emission reduction target for Japan's first commitment period was perceived to be "unfair", because their competitors in China, India, or the United States had not faced such emission reduction requirements. They had perceived themselves as to be the most energy efficient companies in the world, and thus, they did not recognize the reason why only Japanese industries had to reduce CO₂ emissions. They strongly opposed to setting another emission reduction target for years beyond 2012. They rather preferred agreeing to sector-wide, non-legally-binding, energy-efficiency targets. As those industries' competitors were in the current non-Annex I countries, their intension was to set such sectoral targets in both Annex I and non-Annex I countries.

An agreement reached at COP13, Bali Action Plan, included a paragraph that called for a discussion on "nationally appropriate mitigation actions by developing country Parties" (UNFCCC, 2007). The first point of Japan's position to involve developing countries was reflected in this paragraph. On the other hand, its second point, Japan's suggestion to discuss "sectoral approach" was not reflected in a way Japan had expected. A paragraph on "sectoral approach" in the Bali Action Plan said; "cooperative sectoral approaches and sector-specific actions, in order to enhance implementation of Article 4, paragraph 1(c) of the Convention." This meant that the "sectoral approach" under the Bali Action Plan was mainly intended to motivate technology transfer in developing countries, and not to discuss it as a part of commitments of the developed countries.

Early in 2008, Japan's awareness on climate change negotiation as well as on Toyako G8 Summit began to swell. Soon after the Bali meeting, Japanese government began to discuss to consolidate Japan's position on whether or not to accept emission reduction target at national level. This closed meeting involved ministers of four ministries, MOE, METI, MOFA and Ministry of Finance (MOF), so the meeting was unofficially dubbed "four-ministers' meeting on climate policies". Most of the ministers were basically supportive of setting emission reduction target at national level, but minister of METI was strongly opposed to taking such an option, as he was in sympathy with industries' view.

The final decision was made by then prime minister Fukuda himself. In his speech made at the annual meeting of the World Economic Meeting in Davos in January 2008, he made a proposal called "Cool Earth Promotion Programme" which basically accepted a quantitative emission reduction target at national level (Prime Minister's Office 2008b). Such national target for each country should be set based on calculation of amount of emission reduction potentials in each country. He said, "Japan will, along with other major emitters, set a quantified national target for the greenhouse gas (GHG) emissions reductions to be realized from now on. In setting this target, I propose that the equity of reduction obligations be ensured. The target could be set based on a bottom-up approach by compiling on sectoral basis energy efficiency as a scientific and transparent measurement and tallying up the reduction volume that would be achieved based on the technology to be in use in subsequent years. This methodology has become a new definition of "sectoral approach" in Japan since this speech.

This proposal became the Japanese proposal at the negotiating meeting (AWG-LCA and AWG-KP) held in Bangkok and the Chiba G20 Environment and Energy Ministerial Meeting in March 2008. The proposal was received with strong objection by developing countries, because Japanese proposal intended to set emission reduction targets to all "major emitting countries", which included some large emerging economies such as China and India.

On the other hand, Japan made progress internally in preparing for the Toyako G8 Summit. A "Council on the Global Warming Issue" was established under Prime Minister's Office in February 2008. This council consisted of twelve members, who were either from academia, business community, or other related organizations. The council met once a month until the G8 summit in July 2008. It discussed various aspects of the issue, including long-term target, a vision for a low-carbon society, technology transfer, etc. Japan had already proposed halving global emission by 2050 at the time of Abe administration a year ago. The next step was to investigate long-term emission target for Japan. In early June, Fukuda announced a

proposal called "the Fukuda Vision", which included Japan's emission target for 2050. He said that Japan is ready to aim at reducing its emission 60-80% of current level by 2050 and develop a low-carbon society. The Council on the Global Warming Issue also published its own proposal called "Proposal of the Council on the Global Warming Issue, in pursuit of Japan as a Low-carbon society" (Council on the Global Warming, 2008).

The Toyako G8 Summit highlighted agreeing on the 2050 global target, but the United States did not accept such emission target. The final Chair's summary wrote, "we seek to share with all Parties to the UNFCCC the vision of, and together with them to consider and adopt in the UNFCCC negotiations, the goal of achieving at least 50% reduction of global emissions by 2050, recognizing that this global challenge can only be met by a global response, in particular, by the contributions from all major economies, consistent with the principle of common but differentiated responsibilities and respective capabilities."

Soon after the Toyako G8 Summit, Fukuda suddenly resigned his position as Japanese prime minister. Mr. Taro Aso succeeded the position and became the new prime minister. Japan's decision making including that related to climate change policies stalled until the new administration began to take action in fall 2008. Prime Minister Aso generally accepted Japan's positions on future climate policies that were determined under Abe and Fukuda administrations. He also maintained Advisory Council on the Global Warming Issue, which met after several months' interval, in October 2008. Two significant items were discussed at the meeting. The first item was a discussion concerning introduction of domestic emissions trading scheme. Japanese government had not been able to introduce emissions trading scheme at domestic level due to strong objection of industries. Meanwhile, emissions trading scheme at domestic level was relatively supported in the EU, the United States and some other developed countries. Two distinct Committees to discuss the scheme were established both under MOE and METI. Thus, the Council played a role of paving the way to start the scheme in Japan.

The second important item approved by the Council was establishment of "Committee on Mid-term Emission Target" under the Council. Eleven years ago when Japan was internally discussing its emission target to be incorporated in the Kyoto Protocol, joint meetings of Central Environment Council and Industry Structural Council were held several times, while real internal negotiations were made between ministries, especially between MOE and METI. Compared with the process in the past, today's decision making body has been established at the side of prime minister's office, apart from MOE and METI. This newly established committee has been given a task to use several economic models to develop several scenarios that reflects Japanese people's concern such as how much Japan would be able to reduce GHG emissions at a certain cost, and how that certain level of effort could be compared with efforts of the EU or of the United States. The several scenarios will be used as references for Prime Minister to make the final decision on Japan's mid-term emission reduction target. As the decisions agreed at COP14 in Poznan, Poland, in December 2008 invited Parties to come up with their ideas on their relevant emission reduction target by the next AG-LCA meeting to be held in March 2009, the "Committee on Mid-term Emission Target" might be requested to speed up its task.

IV. Border adjustment in Japanese climate policy.

Discussion on border adjustment has appeared in the consideration of carbon/environment tax and emissions trading at national level, repeatedly in the consideration by the Central Council of the Environment (MOE) especially since 2001. Although the Ministry of International Trade and Industry (MITI, current METI), the Ministry of Transport (MOT, current Ministry of Land, Infrastructure, Transport and Tourism) and the Research Committee on Taxation System of the Government has dealt with the issue very occasionally, no substantial consideration has not made so far.

During the consideration of carbon tax and environment tax by the Central Council of the Environment, through its special committees and sub-committee, international competitiveness concern and possibility of introducing BA have been one of the agenda, as the business sector has been opposing to introduction of carbon tax by arguing that such tax may raise international competitiveness concern.

1. Debates on BA in the Central Council of the Environment

A typical discussion on international competitiveness and BA occurred in 2004 in the Subcommittee on General Planning of Policies and Measures established under the Central Council of the Environment when the Subcommittee discussed on carbon tax, aiming at providing a useful input to the revision of the 1998 Guideline of Measures to Prevent Global Warming for preparing implementation of the Kyoto target before entry into force of the Kyoto Protocol. Similar discussions have repeatedly occurred in other committees subsequently established under the Central Council of the Environment. Main points of discussion in the Subcommittee are introduced here, by making reference to the Subcommittee's interim report issued in 2004 (Central Council of the Environment, 2004) and other relevant materials presented for discussion in the Subcommittee:

(1) Impact on international competitiveness:

Increase in energy cost might cause a serious concern for international competitiveness vis-a-vis competitors of Japanese industries, especially those in the United States and China, which have no obligation to reduce emission under the Kyoto Protocol. Japanese industries consider that their counterparts of these countries are not probably required to reduce emission while they are obliged. For instance, as for steel and cement, only Japanese industry is required to reduce emissions while counterparts in four out of five most emitting countries would not be required to do so, at least under the Kyoto Protocol (see Table 1). As the result, the hollowing out of Japanese industry by the relocation to other countries and closure of installations in Japan might occur.

Table 1 Top Five Emitters in Steel and Cement sectors (2000)

	Steel	MtCO2	Cement	MtCO2
1	China	290	China	500
2	Russia	91	USA	104
3	Japan	88	India	78
4	USA	75	Japan	70
5	India	59	South Korea	42

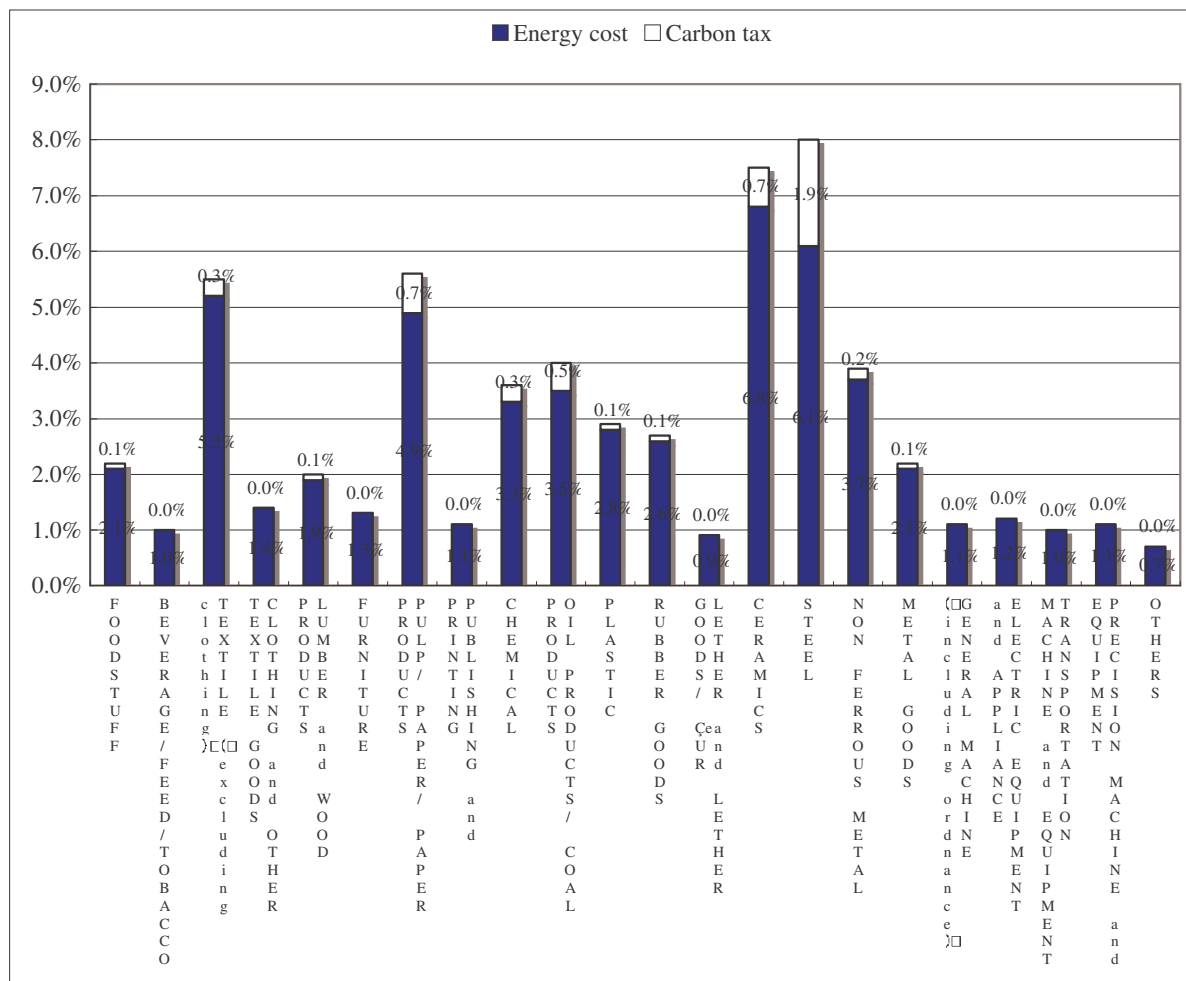
Source: Schmidt et al. 2006

The report of the Subcommittee indicates that energy cost is one of the factors affecting international competitiveness together with exchange rate, labor cost and infrastructure and increase in energy cost due to carbon tax should not be considered as the single factor determining international competitiveness of Japanese companies. According to materials presented for discussion in the Subcommittee, the ratio of energy cost vis-a-vis production amount is 2.1% on the average, which shows that impact on production cost is relatively limited.

However, some energy intensive industries might actually be affected by increase in energy cost. Supposing that energy cost should increase due to carbon tax (3400 Japanese yen/t-C, which is almost equivalent to 26.5 Euro), among energy intensive industrial sectors (of which the ratio of energy cost is more than 2.5% out of their production amount), industries that could be considerably impacted by increase in energy cost are (i) steel (1.9%*), (ii) ceramic (0.7%*), (iii) pulp and paper products (0.7%*), and (iv) oil products/ coal products (0.5%*)(see Figure 1). These industrial sectors are considered as the ones that are likely to be affected by domestic carbon tax to a great extent. On the other hand, impact on international competitiveness of some other sectors such as pulp and paper and chemical, of which the ratio of exports over imports is relatively small (respectively 4.5% and 4.8%), will relatively be less affected by the domestic policies.

* These 4 figures show the ratio of increase in energy cost out of production amount for each industrial sector.

Figure 1: The ratio of energy cost and carbon tax vis-a-vis production



Source: Material presented to the meeting of the Subcommittee on 2004

(2) BA in the discussion

Having discussed comprehensively on the possibility of introducing BA, the report of the Subcommittee indicates, as one of the options, a possibility of introducing BA in case of carbon tax being introduced. Although the report identifies several examples of BA introduced by other countries such as Superfund tax in the United States, it indicates three barriers necessary to be overcome in case BA is to be introduced.

The first problem of BA is that BA might reduce mitigation effect of carbon tax, as incentive of carbon tax on exports will be lost.

The second is possible incompatibility with the WTO rules. There has been a divergence of views about whether indirect tax on input used and completely consumed in the production process is compatible with the current WTO rules.

The third barrier is technical feasibility to apply BA to every product by collecting information on energy input used in the process and the ratio of exports and so on. In particular, in case of the assembly industry, its products will face the most serious difficulty because of its more complex supply chain. Diversity in production method is another difficulty of BA to be applied.

The report of the Subcommittee suggests that if the BA might be difficult to introduce, it would be necessary to introduce other measure to respond to competitiveness concern.

2. BA in the domestic emissions trading newly introduced in autumn 2008

Following "Fukuda Vision", a national emissions trading scheme just started last year (October 2008). The emissions trading scheme has two components: (i) "voluntary" cap and trade system and (ii) national "CDM", emission reduction project assisting small companies in reducing their emissions through large emitting companies' financial and technological support. In the first component, participation in the scheme is voluntary in that, first, each company can choose whether to participate or not in emissions trading and, second, the companies participating in the scheme can decide the form - absolute or relative -, and the level of their own emission reduction targets by themselves. There is no verification of the emissions of each company unless the company wishes to sell its emissions allowances (Global Warming Prevention Headquarters 2008).

The scheme has not introduced elements dealing with international competitiveness concern for two reasons. First, because of lack of time for consideration, and second, as it has not introduced "mandatory" scheme, and as most of business sectors expect the scheme to be only a "trial", BA has not seriously been considered as an essential element of the scheme.

3. Conclusion

As was observed in the previous two sections, there has been almost no substantial discussion on carbon leakage in Japanese decision-making process on climate change so far. According to analysis presented to the Subcommittee of the Central Council of the Environment, impact due to increase in energy cost are very diverse depending on industrial sectors: a couple of energy intensive sectors are likely to be affected in case of increase in carbon price. The Japanese industries have been provoked by their perception that commitments under the Kyoto Protocol were not fair. Their perception of fairness consists not only of carbon leakage to developing countries, but also of levels of emission mitigation efforts which industries in other countries face. Thus, their frustration has been directed towards architecture of international institution as a whole, and not towards emission mitigation activities in developing countries exclusively.

At the same time, debates on border adjustment provisions are inexistent in Japan. Almost all types of border adjustment measures assume either domestic emissions trading scheme or carbon tax to have been implemented in the country. Japanese climate policies based on voluntary actions might not be consistent with border adjustment measures. This point is further elaborated in the interview section of this report.

V. Perception of Japanese stakeholders on the BA: Result of interview survey with key business sectors and NGOs¹

1. Purpose

A series of interview surveys was conducted in December 2008 on individuals who were affiliated with either private companies or environmental non-governmental organizations (NGOs) in Japan. The purpose of the survey was to investigate the perception of Japanese major stakeholders regarding (1) carbon leakage that may occur due to introduction of emission reduction policies only in Annex I countries, and (2) border adjustment measures to avoid such leakage. The questions asked during the interviews are listed in Appendix 1 of this report.

2. Results

(1) Voluntary emissions trading scheme at the domestic level, pilot phase

The interviews started by asking about interviewees' perception of the domestic emissions trading scheme, which had just been introduced as a pilot phase in October 2008 in Japan. The scheme differs in many aspects from the emissions trading schemes introduced in other regions such as the European Union Emissions Trading Scheme (EU/ETS). First, participation in the scheme is voluntary: each company can choose whether to participate or not in emissions trading. Second, the companies that decide to participate in the scheme can set their own emission reduction targets by themselves. Thus, there is no verification of the emissions of each company unless the company wishes to sell its emissions allowances. Third, the scheme allows companies to set an emissions cap either at an absolute value or in carbon-efficiency terms. Fourth, there is an additional mechanism called "domestic Clean Development Mechanism (CDM)", by which Japanese companies could invest in another company in Japan that would reduce emissions less costly. For these reasons, the scheme is considered to be only in the pilot phase to see whether the scheme would be workable in Japan.

Nearly all the interviewees answered that the current pilot-phase trading scheme in Japan is a failure with many problems. All the respondents forecasted that the current pilot scheme would end without much actual trading occurring, as the rules were considered to be a compromise between the Japanese government and the private sector. Furthermore, nearly all the interviewees were uncertain as to how the current scheme would evolve after the pilot phase. Some considered the scheme would not evolve at all within Japan, but might change according to changes outside Japan, such as an agreement on a post-2012 international institution that is expected to be reached at the 15th Conference of the Parties to the UNFCCC (COP15) in 2009. Others thought that the best guess might be the introduction of a type of cap-and-trade (C&T) scheme similar to EU/ETS, but without being able to agree on emission reduction targets for each entity. Nobody expected that Japan's introduction of the pilot-phase emissions trading scheme would affect international negotiations on a climate agreement beyond 2012. Some were supportive of domestic CDM scheme, emphasizing that

¹ We would like to thank all the anonymous individuals who kindly agreed to be interviewed by us.

emission reduction in Japan would be realized in a cost-effective manner by such domestic investment.

The interviewees cited the names of some organizations and companies that might support introduction of the emissions trading scheme in Japan, particularly the Ministry of the Environment (MOE) and environmental NGOs, especially WWF Japan. The only private company in Japan that was considered to be supportive of the emissions trading scheme was Ricoh, a manufacturing company that produces copy and fax machines. Why only Ricoh? One interviewee said that it was because Mr. Masamitsu Sakurai, President of Ricoh, is personally very concerned about climate change. Another person stated that Ricoh was concerned about debates on border adjustments in the EU, and that Ricoh might have thought that accepting emissions caps on its own emissions might help justify Ricoh as a climate-friendly company, and could help Ricoh from being taxed by the EU government. Another interviewee said that the current emissions trading scheme was introduced merely because it was mentioned in Fukuda Vision in June 2008, and that he had no idea who had actually persuaded then Prime Minister Fukuda to mention the scheme in his Vision.

Responses differed when they were asked of preferences of financial and investing companies such as banks for the scheme to be implemented in Japan. Many were pessimistic, saying that not much actual trading would be likely to occur under the current rule, so there would be little opportunity for traders to make profits in Japan. Some said the verification business might flourish in Japan, while others said such company activities did not necessarily have to be restricted in Japan, and that they could make profits by participating in emissions trading in other countries.

All the interviewees cited steel companies when asked to name stakeholders that are firmly opposing to emissions trading in Japan. Others included electric power companies, chemicals, and almost all the members of Keidanren. They had mixed guesses as to the positions of the Ministry of International Trade and Industry (METI). Some said that domestic C&T would only result in Japanese companies buying up carbon credits outside Japan, as few Japanese entities are likely to be sellers of carbon allowances. This means that Japanese companies would lose money to invest in further technology development, which was perceived to be a serious concern by industry. Some others went on to argue cultural differences of business community in each country. They said that Japanese business community is more or less harmonized, so that policies such as "Top-runner Approach" are more effective than emissions trading.

(2) Debates on border adjustments in Japan

All the interviewees said they were unaware of almost any substantive discussions underway in Japan on border adjustment provisions. One said that this topic was briefly discussed among members of the Keidanren but no real conclusion was reached. Another said there is no point in discussing border adjustment measures unless Japanese companies started committing to compulsory emission reduction targets, which were considered by Japanese industries to be ineffective or inappropriate.

Almost all interviewees had negative views on border adjustment provisions. Many said that they recognized the concerns of certain sectors that might lose international competitiveness,

but said such concerns should be alleviated by means other than border adjustments. Many reasons were given for such negative impressions:

- Conflict with the World Trade Organization (WTO): First and foremost, such provisions were considered to be inconsistent with WTO rules. The WTO rules differentiate products mainly by comparing products themselves and not by comparing production processes. As long as two products are considered to be the same product, neither of them can be subject to border adjustments even if one production process emits more greenhouse gases (GHGs) than the other. In the case of border tax adjustments according to the amount of emissions during the production process, it was perceived to violate the Agreement on Technical Barriers to Trade (TBT) rules.

- Technical dimension: Even if border adjustments were accepted institutionally, it would be technically difficult to monitor GHG emissions from production processes in each country. There is no motivation for exporting companies to provide emissions data. Criteria would be necessary to define "those countries that are not adequately implementing emission reduction policies". Verification might become necessary, and the whole institution may become complex. One interviewee said "the establishment of an appropriate emission monitoring and reporting system could effectively mitigate emissions, rather than trying to implement border adjustment provisions".

- Effectiveness: The primary objective of border adjustment is to avoid carbon leakage from those countries that take measures to reduce emissions to those countries that do not implement such measures. Imports of products, however, could still be possible by transferring to a third country that does not take such border adjustment measures. One person quoted an example of timber trade and discussion over "reducing emissions from deforestation in developing countries (REDD)", saying that putting a carbon price on wood has done little to stop illegal logging."

The interviewees could not name almost any stakeholder in Japan that could be in favour of border adjustment schemes. Most of them responded that Japan would be a country that imports goods from less carbon-reducing countries such as China, while several considered that Japan could be targeted by the EU. One interviewee mentioned Ricoh again, suggesting the possibility that Ricoh might be concerned of being targeted by EU markets. One person mentioned energy-intensive industries, such as steel, cement, chemical and paper, as potential supporters of border tax adjustment in Japan.

A question was asked as to whether Japan's perception on border adjustment could change if the EU or United States implemented such schemes. Most of the interviewees responded that the EU or United States was unlikely to take such action to begin with, and so they had no idea what position Japan would take under such an unlikely scenario. Most of them said Japan would not implement border tax adjustments even if the EU or United States introduced such schemes against imports of goods from countries that were taking less action.

(3) Japanese perceptions regarding ways to avoid carbon leakage

As almost all the interviewees were not supportive of implementing border adjustment measures, they were requested to offer other strategies to avoid carbon leakage to

developing countries. Many said that carbon leakage should be dealt with by multilateral agreements. This means that, first and foremost, the post-2012 multilateral regime should include commitments for major new emerging economies so that leakage would not occur. Only if such international agreement was not reached should additional measures be introduced partially by each country. Some measures mentioned other than border tax adjustments were labelling and bench-marking energy efficiency. One said that even labelling could conflict with WTO rules. Another respondent suggested the reduction of tariffs for those products that are less carbon-emitting. Actually, the Environment Commission of the WTO has now developed a list of products that are environmentally-friendly, and discussions are underway on whether the tariffs on those products could be reduced. This proposal would be much more consistent with WTO rules and principles, according to one respondent. Another concluded by saying "the only way for emerging economies to take action is to convince them that improving energy efficiency is good for their economies."

Some respondents said they were not sure whether carbon leakage could actually occur at such a serious level. The steel industry, for instance, is considered to be heavily affected by international competitiveness. As Japan is an archipelago, carbon leakage is not a problem for the electric power sector. Aluminum is not produced in Japan. Many stressed the need for more research if sectors such as steel and cement wanted to focus on the carbon leakage problem in Japan. One respondent questioned the definition of carbon leakage. He said that one case of carbon leakage was Japanese manufacturing companies investing in other countries and producing their products outside Japan, while another case of carbon leakage was Japanese companies losing their markets and the markets being taken over by companies in emerging economies. "The consequence of the two cases could be quite different", he emphasized.

Another person argued that there was the third definition of carbon leakage, which was the most serious and realistic in Japan. He said Japanese steel industry is currently the only steel industry in the world that has been burdened by emission reduction targets. The Japanese companies, however, has not put the additional cost onto price of steel, not to lose international competitiveness. Thus, actual leakage has not occurred. Nevertheless, cost of carbon has been covered by reducing companies' profit, which is not beneficial for the companies' financial condition. "This could be called as the potential carbon leakage", he said.

Some noted that the price of steel consisted of many elements, such as the price of labor and land, and that the price of carbon was only one of those many elements. They also pointed out that it was necessary to consider whether steel produced in Japan and that produced in China should be considered the same product, because the quality of steels could be quite different. It is natural that high-quality products can be sold for more than low-quality ones. Japanese steel manufacturing companies could maintain their international competitiveness even if their products became expensive, as long as the quality of their products remained high. Others quoted the example of anti-HIV medicines, which is a well-known success story which proved that reducing the price of intellectual property rights (IPR) dramatically lowered the prices of medicine and helped to cure HIV-related diseases. "The example of anti-HIV is an exceptional case," one said, "because most of its price was for IPR. The prices of many other products are determined by other factors such as the cost of materials and labor. The same could be said for the carbon price. Technology transfer is normally more complex."

Concerning the Japanese government's agreement to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat regarding the Bali Action Plan, industry-related interviewees were basically supportive. They stressed the significance of some emerging economies such as China and India to make some kind of commitment. They considered commitments for some developing countries not as a tool to resolve international competitiveness issues for each specific sector, but as a way to mediate equity regarding efforts between developed countries and some emerging economies. Another interviewee thought the Japanese proposal on a "sectoral approach" was one way of avoiding loss of international competitiveness in certain sectors.

(4) Japanese perception on US and EU measures

Almost all the interviewees said they did not think either the US or EU was likely to take border adjustment measures. One said he had had discussions with people from Business Europe, and they were strongly against border adjustment provisions. "Many manufacturing sectors in the EU were against such schemes", he said, "for fear of basic materials becoming more expensive". The same interviewee said he had also talked with the American business community called the US Council of International Business (USCIB) and found they had the same views as the EU business community. He said that border adjustment provisions were accepted in the United States only at the legislative level.

On the other hand, another interviewee said he had talked with people affiliated to an aluminum company in the EU who were concerned about losing international competitiveness due to higher electricity prices in the EU as a result of EU/ETS and the increase of renewable energy in the power sector. He thus said that the situation in the EU was understandable.

Were the EU or United States to introduce such measures, many respondents expected Japan to condemn such countries as protectionist, rather than Japan implementing similar measures. Some interviewees went on to explain Japan's experience in the 1980s when its products were heavily taxed by the United States' anti-dumping legislation. "Japanese industries suffered greatly", said one interviewee, "and do not wish to inflict the same on other countries. Retaliation is not an option for Japan on this matter".

Some said the EU was more likely to introduce border adjustment measures than the United States, while others felt the opposite was true. If the EU were to adopt any measure, the United States would closely consider the best way to respond. The United States might retaliate by implementing similar measures, or maintain its emphasis on free trade. Japan would not be particularly interested in other countries' introduction of trade restrictive measures unless Japan were targeted. Many people considered border adjustment provisions in the current McCain-Lieberman proposal targeted Chinese industries, not Japanese.

One interviewee explained a fundamental difference between Japan and Western countries. He said that much of the current economic activities in both the EU and United States were based on post-industrialized economies such as financial businesses. In Japan, on the other hand, the business community still consisted of various manufacturing sectors. He said this could be one reason why Japan is more concerned about international competitiveness with developing countries as a whole, and the reason why "participation of major emerging

economies” in the future international framework beyond 2012 was considered more important in Japan than in the EU or United States.

(5) International forum to deal with border adjustments

Again, many responded that the EU or United States was unlikely to introduce border adjustment measures. Nevertheless, they commented that border adjustment measures would greatly affect countries like China. Even in the current multilateral negotiations under the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA), proposals that were intended for developing countries’ participation had been heavily criticized by the emerging economies such as China, India and Brazil. They were concerned about any measures that could harm the international competitiveness of their industries, said one interviewee.

In response to a question about the most appropriate forum for discussing matters related to border adjustment measures, many chose the WTO as the right forum to deal with the issue. “Basically, UNFCCC is not the place to discuss anything related to international competitiveness”, one person said. Another considered this question from the side of the Chinese government. “For many developing countries including China”, he said, “the United Nations is an advantageous forum. On the other hand, China has a great chance of winning negotiations under WTO rules if it were targeted by border adjustment provisions in developed countries. Both regimes may work in China’s favour.”

3. Analysis on results

Almost all the interviewees were pessimistic about border adjustment provisions, which seemed to reflect Japan’s perception on this issue in general. This might explain why there is almost no debate or research on this topic in Japan.

They also shared the view that the EU or United States was unlikely to introduce border adjustment provisions. There were many reasons for such view. For many, the WTO rules were considered to be a priority in Japan. For others, the free-trade regime was less important, but border adjustment measures were not considered to be effective for solving carbon leakage, let alone climate change.

As discussions and studies on carbon leakage and border adjustment measure in the EU and United States progress, it will be interesting to compare the results of this interview survey with similar surveys conducted in the EU and United States and see whether any gaps exist. Should any such gap be found, it would be important for Japanese stakeholders to start discussing this topic. At the same time, it is also important for researchers to investigate the level of carbon leakage that is most likely to occur due to emission reduction policies taken by Annex I countries.

VI. Conclusions

This report aimed at reviewing Japan’s perception on carbon leakage and on border adjustment measures to minimize the leakage. An investigation was made to examine Japan’s recent climate change policies and policy making process, and an interview survey was

conducted for some key stakeholders in Japan who could be affected by carbon leakage or its countermeasures. The key findings are as follows:

1. On carbon leakage

The findings show that there exists concern in the Japanese business sector that increase in energy cost due to mitigation measures might cause a serious problem vis-a-vis their competitors. Carbon leakage was a serious concern for some sectors that could be affected by domestic emission reduction policies, but that it was not much an issue for other industries. Those who were concerned about carbon leakage consider "carbon leakage" by several different meanings. First, it could mean reallocation of production by Japanese firms. Second, it could mean increase of production by companies in developing countries. Third, it could mean Japanese companies slowing eating up its profit and losing its gain in the long run.

Analysis suggest that possible impact on international competitiveness could differ according to sectors and subsectors and that more detailed analysis would be needed on a sector basis: except a couple of energy intensive sectors such as steel and ceramic, impact on international competitiveness might be relatively small.

2. On border adjustment measures

Border adjustment measures have been discussed in some committees set up under the Japanese government. Although some merits were recognized, several barriers were suggested which needed to be overcome in case of the implementation. Even those industries that are concerned of carbon leakage were not supportive of border adjustment measures. Some key points raised against border adjustment measures were;

(1) Environmental effectiveness: border adjustment measures will do good for environmental purposes in case of imports, but it will reduce effectiveness of domestic emission reduction measures on goods that are exported to other countries, because carbon tax or emission allowances will be cleared for export goods.

(2) Consistency with the WTO rules: industries that are likely to be affected by domestic emission mitigation policies are, at the same time, those that are basically in favor of free trade, because their products are sold outside Japan. Any measures that could be regarded as to be inconsistent with the WTO rules are not popular among Japanese industries, even if the measures were aimed at protecting themselves.

(3) Technical feasibility: It is difficult to track back all production process and to obtain data on GHG emissions. Even if the BA were implemented for selected materials only, BA could be evaded via the third country.

3. On perception of the future direction of BA

Japanese stakeholders as well as the government seem to consider BA to have too many barriers to overcome. Thus, many of them estimate the BA will not be introduced even in the EU and the United States, where debates on BA are made more actively. They consider that

emission mitigation commitments for non-Annex I countries in multilateral agreements are more effective and simple to overcome the carbon leakage problem than unilateral BA measures. In fact, that is the logic underlying Japan's position at international negotiating meetings, which strongly insists on emission mitigation commitments for major emitting developing countries.

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Appendix: Questionnaire for Interview Surveys of Japanese Stakeholders (business sector and NGOs) Yukari Takamura and Yasuko Kameyama
Survey conducted in December 2008

A. Voluntary emissions trading scheme at the domestic level, introduced in October 2008

1. A voluntary emissions trading scheme was introduced as a pilot phase in October. How do you think this scheme will evolve after the pilot phase? Will it be related to the outcome of the Copenhagen process?
2. For those who speculated on the official emissions trading scheme to be followed after the pilot phase, what amendments would be needed in order for the scheme to be workable in Japan?
3. Who are the most active stakeholders in Japan in favour of the C&T type of emissions trading scheme?
4. Who are the most inactive stakeholders in Japan who are opposed to the introduction of C&T schemes?

B. History of border adjustment provisions in Japan

1. Are you aware of any discussions underway in Japan on border adjustment provisions to avoid carbon leakage?
2. What are your personal views on border adjustment provisions to avoid carbon leakage? What are the merits and demerits?
3. Who are the most active stakeholders in Japan in favour of such provisions?
4. Who are the most inactive stakeholders in Japan who are opposed to such provisions?
5. Would your response to the above questions differ according to how the EU and United States consider such provisions?

C. Japanese provisions regarding ways to avoid carbon leakage

1. What kind of schemes would be most preferable to avoid carbon leakage? Apart from border adjustment schemes, there could be other instruments such as labelling, international standards, etc.
2. Which products or sectors should be considered under the instruments suggested in the previous question?
3. How compatible are the schemes mentioned in the previous questions and the WTO rules?
4. Are you aware of any researches being conducted in Japan on these issues?

D. Japanese perceptions on US and EU measures

1. To what extent would Japanese stakeholders consider border adjustment to be protectionist in case the United States or EU introduced such measures?
2. If the EU were to adopt any measures (and the US did or did not), what are the chances of trade retaliation from the US?

E. International cooperation and limiting border adjustments

1. Do you think border adjustment measures appearing in the US or EU might affect the positions of emerging economies such as China and India during the post-2012 discussions?
2. Which forum, the WTO or UNFCCC or elsewhere, do you think should discuss border adjustment measures?

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