

17 March 2008

ENGLISH ONLY

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

**AD HOC WORKING GROUP ON FURTHER COMMITMENTS
FOR ANNEX I PARTIES UNDER THE KYOTO PROTOCOL**

Fifth session

Bangkok, 31 March to 4 April 2008, and Bonn, 2–12 June 2008

Item 3 of the provisional agenda

**Analysis of means to reach emission reduction targets and identification of ways to
enhance their effectiveness and contribution to sustainable development**

Views and information on the means to achieve mitigation objectives of Annex I Parties

Submissions from Parties

Addendum

1. In addition to the eight submissions contained in document FCCC/KP/AWG/2008/MISC.1, two further submissions have been received.
2. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the language in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the text as submitted.

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PAPER NO. 1: CANADA

**INFORMATION AND VIEWS ON THE MEANS TO ACHIEVE MITIGATION
OBJECTIVES OF ANNEX I PARTIES**

Summary

Canada is pleased to provide the following submission on the possible means to achieve the mitigation objectives of Annex I Parties.

This year, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (KP AWG) will focus on the possible means to achieve emission reduction objectives. This will need to include expert analysis by issue-specific sub-groups created at the first part of the fifth session of the KP AWG. The work of these sub-groups will also be relevant to the second review of the Kyoto Protocol and the work undertaken in the AWG on Long-term Cooperative Action (Convention AWG).

This year, the KP AWG is expected to adopt conclusions on a collective range for emissions reduction objectives of Annex I Parties and will begin consideration of the scale of collective ambition for Annex I Parties for the period beyond 2012. Consideration of these issues will need to be informed not only by what science is advising but also by what is technologically achievable, guided by the need to balance environmental protection and economic prosperity in particular national circumstances.

For Canada,

- It is particularly important that the work of the KP AWG proceeds in parallel with the work of the Convention AWG so that the international community can deliver a singular, effective long-term international climate change framework at COP 15 in 2009.
- For this to occur, an ambitious work plan must be agreed to and implemented for the Convention AWG without delay.
- To learn from our experiences and best practices to date, it will also be important to incorporate the results of the Article 9 Review of the Kyoto Protocol into both AWGs.
- It is also critical that the work of the two AWGs conclude together and result in the negotiation of a single agreement - only a single undertaking will allow the conclusion of an agreement that achieves the deep global emission reductions necessary to tackle this global challenge.

Introduction

This submission addresses the possible means that may be available to Annex I Parties to reach their emission reduction objectives¹. In addition, this submission also includes views on topics to be covered and experts or organizations to be invited to participate in both the in-session thematic workshop to be held at the first part of the fifth session of the KP AWG and at the round table on the analysis of means available to Annex I Parties to reach their emission reduction targets to be held at the resumed fifth session of the KP AWG.

¹ Paragraph 17 (b), sub-paragraph (i) of the KP AWG's work programme contained in Document FCCC/KP/AWG/2006/4.

Context

Canada welcomes the launch of formal negotiations under the Bali Action Plan to guide the development of a new agreement to address climate change in the period beyond 2012. The overall future Road Map consists of three key, interrelated parts: the KP AWG, the Convention AWG, and the second review of the Kyoto Protocol under its Article 9 that will take place at fourth meeting of the Parties to the Kyoto Protocol (CMP4) in December 2008.

The two AWGs must proceed and conclude in tandem if the international community is to deliver a single, effective long-term international climate change framework at COP15 in 2009. Therefore, an ambitious work plan that will respect the mandate of the Convention AWG must be developed and implemented without delay. To learn from our experiences and best practices to date, it will also be important to incorporate the results of the Article 9 Review into both AWGs.

It is critical that the two negotiating processes end together and result in the negotiation of a single undertaking. Only a single undertaking will allow the conclusion of an agreement that achieves the deep global emission reductions necessary to tackle this global challenge. Canada's economy is natural resource-based, export-driven and substantially integrated with one primary trading partner the recipient of nearly 80% of its exports. For Canada, the economic impacts – particularly with respect to trade and competitiveness – could vary drastically depending on the type and relative effort of commitments adopted by this key trading partner.

Domestically, Canada's approach to addressing climate change is one best suited to its national circumstances. Canada will achieve absolute reductions of 20% from 2006 levels – a reduction of 330 megatonnes from projected levels in 2020. These reductions will come from both industrial and non-industrial emissions, with industrial emissions being cut 21% from 2006 levels by 2020. To meet this target Canada will require new oil sands facilities and coal-fired power generation plants to put in place large-scale carbon capture and storage and other green technologies; generate 90% of our power from sources that do not emit greenhouse gases; increase electricity from renewable sources like wind and wave power by 20 times; cut greenhouse gas emissions from coal by more than 50%; increase average fuel efficiency in new cars by 20%; and improve Canada's energy efficiency by some 20%. The approach being taken is regulatory in nature, and includes concrete, challenging GHG emission reduction targets for all major industrial sectors. In the short term, industry will be required by law to reduce its GHG emissions per unit of production in 2010 by 18% from 2006 levels. After 2010, an annual 2% reduction in per unit emissions will be required.

To provide flexibility and to minimize the economic impact of these regulations, firms will have several options to meet their legal obligations:

- Reduce through abatement actions;
- Contribute to a technology fund which would promote the development, deployment and diffusion of emissions-reducing technologies across industry;
- Engage in emissions trading, including:
 - Inter-firm trading,
 - Participation in the Clean Development Mechanism (CDM), and
 - Participation in an offset system covering non-regulated activities.

These actions, coupled with initiatives being taken by provincial and territorial governments, mean Canada's emissions from all sources are expected to begin to decline in absolute terms as early as 2010 to 2012. In addition to reducing Canada's total emissions by 20% by 2020, the government is also committed to reducing emissions by 60-70% by 2050 relative to 2006 levels.

2008 Kyoto AWG Work Programme

This year, the KP AWG will examine possible means available for achieving mitigation objectives and revisit the issue of mitigation potential, based on effectiveness, efficiency, costs and benefits of current and future policies, measures and technologies at the disposal of Annex I Parties appropriate to their national circumstances.

This year, the KP AWG will also adopt conclusions on a collective range for emissions reduction objectives of Annex I Parties as well as begin consideration of the scale of collective ambition for Annex I Parties for the period beyond 2012. Consideration of these issues will need to be informed not only by what science is advising but also by what is technically and realistically possible, all guided by the need to balance environmental protection and economic prosperity.

The tasks identified in the KP AWG's work programme relating to the analysis of possible means to achieve the mitigation objectives of Annex I Parties are important because of the added flexibility and the potential certainty they will provide once the rules related to these means in a future agreement are decided and understood. In Canada's view, the work that will be undertaken is also relevant to the magnitude and structure of eventual commitments or actions that will be agreed to by Parties.

In carrying out the work on means and mitigation potential, Canada believes that the analytical work outlined in the work programme of the KP AWG should be undertaken by issue-specific experts in sub-groups created by the first part of the fifth session of the KP AWG (KP AWG 5.1), taking into consideration the outcomes of the in-session thematic workshop at that session. In particular, at least two sub-groups should be established to undertake analysis of the following means:

- Rules to guide the treatment of land-use, land-use change and forestry (LULUCF); and
- Emissions trading and the project-based mechanisms under the Kyoto Protocol.

These sub-groups should meet in conjunction with upcoming joint sessions of the KP and Convention AWGs, and their work should inform the conclusions at the first part of the sixth session of the KP AWG (KP AWG 6.1). The work of these groups should address both the further work required and how best to advance this work to ensure that the rules related to the means to meet emission reduction objectives are applied consistently and properly understood at the time when Parties make decisions on eventual commitments or actions that they are to undertake. It is imperative that Parties understand how the means available to them to meet their emission reduction objectives impact various other Parties due to their different national circumstances.

It is important that the work on LULUCF and Kyoto mechanisms begin without delay, starting with the in-session thematic workshop at KP AWG 5.1. Consideration of these means should:

- Include GHGs, sources and sectors, and some aspects of possible approaches to sectoral emissions, as these issues are cross-cutting across topics;
- Focus on identification of ways to enhance the effectiveness of these means and their contribution to sustainable development;
- Draw upon relevant work and discussion in the work of the Convention AWG, the work of the Subsidiary Body for Scientific and Technological Advice (SBSTA) on methodological issues related to reducing emissions from deforestation and forest degradation in developing countries, and the second review of the Kyoto Protocol.

Topics for the In-session Workshop

The workshop should include participation by Party experts as well as external experts/organizations, for example: the OECD/IEA Annex I Experts Group, the Pew Center on Global Climate Change, Resources for the Future, the Center for Clean Air Policy and the Harvard Project on International Climate Agreements. Additionally, it might be useful for Parties to have the opportunity to express their views on the workshop and the process going forward at the workshop's conclusion.

Rules to Guide the Treatment of Land-use, Land-use Change and Forestry

The rules around land-use, land use change and forestry (LULUCF) will in part determine the mitigation potential of Parties and have implications for the structure and magnitude of eventual commitments or actions they are able to undertake.

Experience to date has shown that the current rules to guide the treatment of LULUCF could be more effective in providing incentives to reduce emissions and enhance removals. In Canada's view, work needs to be undertaken to review the existing rules governing LULUCF under the Kyoto Protocol with a view to revising the framework for the treatment of LULUCF in a way that will enhance the sector's contribution to meeting the objective of the Convention in the period beyond 2012. With a view to guiding the work of the LULUCF sub-group, the workshop should focus on examining the existing rules from a number of perspectives including:

1. The need to improve the incentive structure for sustainable land management created by the rules, thereby enhancing their effectiveness
 - For example, a more holistic treatment of agriculture (treating agriculture as a sector rather than accounting for emissions and removals from agricultural land management separately from other agricultural activities) would make it easier for countries to implement integrated domestic policies that enhance sinks and reduce emissions. The 2006 IPCC GHG Inventory Guidelines provide a broader treatment in focusing on Agriculture, Forestry and Other Land Uses (AFOLU) rather than the more restrictive LULUCF categorization.
 - On the forestry side, caps on forest management can mean there is little or no incentive to increase sequestration if no credit is possible. As well, there is no incentive to explore policies that affect the production, storage and disposal of carbon in harvested wood products.
2. The need to more accurately reflect what happens to LULUCF carbon
 - A fundamental principle for a post-2012 framework is that it should reflect the atmospheric impacts of anthropogenic activities in LULUCF sectors. It is now well understood that the approach taken in the Kyoto Protocol – assuming that the carbon in harvested wood products is emitted at the point of harvest – is not accurate. The IPCC in its 2006 guidelines has provided methodological guidance for estimation of carbon in harvested wood products under different alternative approaches.

3. Ensuring that rules can encompass the range of national circumstances

- For Canada, a key issue is the impact of natural disturbances, such as fire and insect infestations on forest carbon, which can outweigh the impact of human-induced activities in the managed forest. The impact of emission-causing natural disturbances in managed forests in countries such as Canada is now better understood than when the framework of Article 3.3 and 3.4 of the Protocol and associated rules of the Marrakech Accords were agreed. It is fundamental that Parties consider how to revise the treatment of forest management to focus the emissions and removals directly associated with anthropogenic interventions.
- Canada continues to explore policies to reduce emissions and increase sequestration associated with forest management, including the inclusion of forest carbon projects in our domestic offset system.

The above issues above require both general discussion at AWG 5.1 and initiation of an in-depth methodological discussion at the second part of the fifth session of the KP AWG (KP AWG 5.2) that would be best undertaken by a LULUCF sub-group. Canada would be pleased to consider presenting at the roundtable to be held at AWG 5.2 on this topic.

Emissions trading and the project-based mechanisms under the Kyoto Protocol

1. Emissions Trading

- As we consider the period beyond 2012 and thereafter, our understanding of how different Parties will contribute to the effort will be increasingly important to understand whether and how the rules for emissions trading may need to be changed in order to accommodate different commitment structures in a new agreement and to ensure broad access to the flexibility afforded by this mechanism.
- In addition, it might be appropriate to consider linking to trading systems currently external to the UNFCCC system with a view to increasing the liquidity and effectiveness of the system created by Article 17 of the Kyoto Protocol, including trading systems at all levels of government. A complexity worth considering may be the varied domestic approaches to promoting renewable energy, including coverage under an emissions trading scheme, coverage under an offset system and coverage under programs.

2. Cross-cutting issues

- Several cross-cutting issues will need to be re-evaluated including the need for more extensive banking and borrowing provisions, the cap on use of credits from LULUCF CDM and an analysis of the potential for sectoral crediting mechanisms and how they could fit with existing mechanisms.

3. Project-based mechanisms under the Kyoto Protocol

- Parties will also want to assess the role, shape and form of CDM and JI for developing countries and emerging economies. Key issues to examine may include whether new CDM projects after 2012 will be limited to only certain sectors or countries, and/or whether some countries should move to a JI-based approach. If some Parties graduate to JI, there will be a need to consider what changes might be necessary to the modalities and procedures for JI, in particular with respect to the accounting of emission reductions in national inventories.
- For the project-based mechanisms to contribute as an effective means, Parties will need to revisit certain fundamental aspects with a view to enhancing the functioning of these mechanisms. For example:
 - Moving to standardized or multi-project baselines to allow for a more straightforward assessment of business-as-usual, decrease transaction costs and remove any subjectivity with respect to consideration of project additionality.
 - A broader inclusion of LULUCF or AFOLU activities should be considered as well as a simpler accounting approach for LULUCF CDM. Experience with developing and implementing LULUCF activities under the current rules for this class of projects has shown that with the current structure, including the temporary nature of credits, these projects are unworkable. As a result, projects in this critical sector are not proceeding.
 - There should be comprehensive coverage of all technologies (e.g., nuclear) and sectors (e.g., agriculture).
 - Further revision of CDM modalities and procedures, including a re-examination of the governance structure of the CDM Executive Board in light of any changes or expansion of the CDM in the period beyond 2012.

PAPER NO. 2: JAPAN

**AWG ON FURTHER COMMITMENTS FOR ANNEX I PARTIES UNDER KYOTO
PROTOCOL**

**VIEWS AND INFORMATION ON THE MEANS TO ACHIEVE MITIGATION OBJECTIVES
AND THE ORGANIZATION OF THE IN-SESSION WORKSHOP,
VIEWS ON THE ORGANIZATION OF THE ROUND TABLE, AND
VIEWS AND INFORMATION ON METHODOLOGICAL ISSUES RELEVANT TO THE
MITIGATION MEANS**

Japan appreciates that the Parties reached to the agreement on detailed work programme in Bali COP/MOP3. Japan will contribute to the advancement of discussions in a positive manner.

Regarding Japan's actions, Japan presented that it will, along with other major emitters, set a quantified national target for GHG emissions reductions, ensuring the equity of reduction obligations among countries. This submission is timely, made in the same time as the work in underway in Japan towards setting its national target. On the basis of the past discussion, Japan submits its views as below.

1. The means to achieve mitigation objectives and the measure to enhance its effectiveness

In the consideration of means to achieve emission reduction, the following elements are indispensable.

- Means to achieve global emission reduction firmly and in a cost effective manner
- Means to provide incentives to positive mitigation actions, from the perspective of compatibility between environmental protection and economic development, while avoiding distortion of market competition

Sectoral approach is important as a way to realize both elements above.

A. Sectoral approach

- Sectoral Approach is important both from the perspective of maintaining the equity of measures within and outside the country, and of promoting effective reduction. Japan proposes the following schemes to be shared globally for setting the mid-term targets and technological cooperation.

(Setting Mid-Term Targets)

- Each major emitting country considers a sectoral reduction potential with indicators given to each sector, based on the technology to be in use in the future. Then, each country calculates the sectoral reduction volumes, based on the emission potential and prospects of productive activities which are examined through the review among countries. Sectoral reduction amounts are aggregated in the bottom up approach to set a quantified national GHG emissions reduction target.
- The types of technologies to be introduced, the timing of their introduction and the introduction rates should be identified based on the economic situation, geographic characteristics and development stage of each country.

- In case that some data(e.g. the diffusion rate) are not available, a certain percentage of improvement of efficiency from the current level would be a possible option to calculate the reduction potential, taking into account regional characteristics including geographic conditions.
- Other ways should be also kept open to be considered as methodologies for calculation of reduction potentials and setting quantified national GHG emissions reduction targets as long as they allow setting equitable burden sharing which is measurable, reportable and verifiable.

(Cooperative Sectoral Approach)

- This approach is aiming to identify the best practices by sector in terms of technologies, policies and measures, etc., and to enhance the public-private cooperation in transferring the best practices based on the actual conditions of each country such as current level of energy efficiency and status of technology diffusion.
- More specifically, we propose the following scheme:
 - ① Identification of sectors: Power generation sector (including coal-, petroleum- and natural gas-fueled power plants), energy intensity industries (iron & steel, chemical, cement, paper & pulp and aluminum industries), commercial and household sector, and transportation sector (freight and passengers). The calculation of efficiency in each sector will be based on the method of setting the mid-term target.
 - ② Review of the best practices: Review the best practices (in terms of technologies, policies and measures, etc.) for each sector, based on the IEA's works on collecting best practices and developing energy indicators, and existing technical cooperation demonstrated through APP and other works.
 - ③ Assessment on the status of technology introduction in developing countries: Experts will visit facilities in developing countries and identify their situations of technology introduction, available technologies for them, and possible policies and measures to be taken.
 - ④ Analysis of reduction potential: Analyze the reduction potential when the facilities in developing countries introduce the applicable best practices.
 - ⑤ Set reduction amount and implementation of technical cooperation: set the reduction amount, sectoral intensity rates etc., which are effective for reduction without distorting international competitiveness, based on the reduction potential. At the same time, implement necessary and appropriate technical cooperation to encourage each country's action to realize reduction potential.
 - ⑥ Implementation of reviews: Conduct reviews on the activities in □. Collect information of best practices and review them.
- In addition to the above, Japan is using the following approach as a domestic policy, to promote emission reduction actions by sector.

(Japan's major actions)

(1) Domestic institutional measures

- Kyoto Protocol Target Achievement Plan
 - Kyoto Protocol came in force in February 2005, where Japan committed to reduce its GHG emission in the first commitment period (2008-2012) by 6% from 1990 level. In order to achieve this goal, the Kyoto Protocol Target Achievement Plan was adopted in

the Cabinet in April 2005. Current domestic climate measures are implemented based on the Plan.

- Kyoto Protocol Target Achievement Plan states that, the necessary measures to be taken from FY2008 in the first commitment period will be determined through the comprehensive evaluation and review in FY2007, such as status of implementation of measures determined in the Plan and of emission of GHG. This evaluation and review of the Plan has started in November 2006 under the Joint Meetings of Industrial Structure Council and Central Environment Council, in which the evaluation of measures by sector, hearings from the key figures, relevant ministries and organizations, and review of measures by sector. It was vigorously discussed in the series of 30 meetings.
 - In December 2007, Industrial Structure Council and Central Environment Council announced the draft final report on the basic direction of evaluation and review of Kyoto Protocol Target Achievement Plan. The draft was publicized as “final report” on February 8th, with the recalculation of updated prospect of social and economic activity and statistical data which consists precondition of projection concerning emissions in FY2010.
- Top Runner Program
 - Japan introduced the so-called top runner program in 1998. The top runner program is a policy to improve the energy efficiency of the market as a whole by using the value of the product with the highest energy consumption efficiency on the market at the time of the standard establishment process as a base value and setting standard values by considering potential technological improvements added as efficiency improvements. As of September 2006, 21 items are covered by the program. The scope of the applicable appliances is expected to be expanded and the standards of respective appliances are expected to be reviewed in the future.
 - The top runner program has succeeded in efficiently promoting wide use of existing best available technology by capitalizing on market force. Moreover, technology development is promoted through competition among companies by setting high standard values in proportion to the prospects of technology progress. Setting such achievable targets creates fair markets, and the win-win relations to achieve compatibility between environmental protection and economic growth are created.
 - In reality, energy efficiency is now increased to levels much higher than the estimates at the time of setting the standards for applicable appliances and automobiles. As for the products whose markets are formed and energy efficiency can be compared with each other, such as home electric appliances, automobiles, etc., it is effective to set efficiency standards for each product, and promote wide use and development of technology through competition among companies.
 - Keidanren Voluntary Action Plan
 - In Japan, industrial world with the energy conversion sector (power generation sector) and the manufacturing industry as the central figures developed the Nippon Keidanren Voluntary Action Plan on the Environment, and continue to make voluntary actions to reduce CO₂ emissions. The industries that have participated in these actions cover about 44% of Japan’s overall CO₂ emissions and about 83% of the industrial sector’s overall CO₂ emissions.

- This action plan is aimed at reducing CO2 emissions in FY2010 to the level of 1990 as the base year. CO2 emissions increased by 3.7% from the base year and peaked in 1997, then started decreasing thereafter, and the action plan has achieved its target for six years in a row since FY2000.
- In setting the targets, individual industries are required to pledge their respective targets to achieve the target of the industrial community as a whole.
- The progress of the action plan is reported to an advisory council, and the efforts to achieve the targets are reviewed by the government and the experts of academic community. The effects of such efforts are checked as appropriate.
- For Japanese industries that have maintained the world's top level energy efficiency, further improvement of energy intensities through energy conservation not only reduces CO2 emissions but also strengthens the international competitiveness of Japanese industries. The production of high-quality products and environment-friendly activities of such companies have realized sustainable development.

(2) International Cooperation

● APP

The Asia-Pacific Partnership on Clean Development and Climate (APP) joined by Japan, Australia, Canada, China, India, South Korea and the U.S. is an effort of cooperation between the government and private sectors to supplement the Kyoto Protocol. These seven countries account for about half of CO2 emissions in the world, and the potential of reduction by their energy-saving cooperation, etc. is very large. The ratio of contribution of the cooperation fields to the energy consumption and CO2 emissions of the seven countries is as much as about 60%.

- The characteristic of this partnership is the sector-by-sector bottom-up approach, in which the private companies that actually possess clean and efficient technologies cooperate in the development, spread and transfer of such technologies and the government supports such activities. Japan aims to contribute to global-scale reduction in greenhouse gas emissions by transferring and diffusing of not only the most advanced equipment and technology but also the energy-saving technologies, know-how, etc., which Japan has developed to date.
- For example, Japan's electricity industry has achieved the world's top level thermal efficiency of thermal power stations through the introduction of the most advanced equipment and technology. To maintain such high efficiency over a long period of time, the industry has developed various methodologies and know-how of operation, maintenance and management. Sharing them with the engineers of participating countries makes it possible for Japan to contribute to global-scale reduction in greenhouse gas emissions.
- As experts of the eight fields gather by each field, identify efficient technologies and discuss the problems of and measures for spread and transfer of such technologies, efficient measures for reduction can be promoted. Specifically speaking, energy efficiency is benchmarked by sector (comparison and analysis of best practice), the potential of reduction in each sector as a whole is clarified, and the efficiency improvement technology to be transferred is specified.

B. The treatment of LULUCF

(1) Forest

- In consideration of rules for the treatment of forest, particular attention should be paid to the following description in IPCC Fourth Assessment Report:

“In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.”
- In other words, it is expected that the rules should be established in a manner that sustainable forest management would be promoted in each country in order to contribute to the mitigation of global climate change and the establishment of the Sound Material-Cycle Society.
- Specifically, the following points should be taken into consideration:
 - Efforts toward sustainable forest management by each country are properly recognized;
 - Effect of carbon storage in harvested wood products is properly recognized; and
 - Effect of substitution of woody biomass for fossil fuels is properly recognized.
- In addition, the following points need to be paid attention in consideration of the rules:
 - Sufficient recognition on efforts already taken by each country towards sustainable forest management;
 - Consistency with forest/forestry policies in each country during the first commitment period;
 - Appropriate evaluation of potentials as mitigation means based on the sound analysis;
 - Recognition that forest/forestry policies take long time for realizing effects; and
 - Realization of multiple functions of forest including carbon sequestration and storage as well as other important functions.

(2) Cropland

- With regard to cropland soil, accounting rules should take into consideration such factors as natural and ecological condition, land condition, actual state of food, agriculture and rural areas, and particularity of farming practices of each country, and should fully respect the knowledge each country has accumulated about those factors and farmers' efforts for promoting good farming practices.
 - In consideration of rules for the treatment of cropland soil, particular attention should be paid to the following description;
 - *“Any practice that increases the photosynthetic input of carbon and/or slows the return of stored carbon to CO₂ via respiration, fire or erosion will increase carbon reserves, thereby ‘sequestering’ carbon or building carbon ‘sinks’.”* in IPCC fourth assessment report, and
 - *“Management activities influence organic C inputs through changes in plant production (such as fertilization or irrigation to enhance crop growth), direct additions of C in organic amendments,”* in 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
- In addition to them, particular attention should be paid to the fact that farming practices differ widely among countries and localities.
- In addition to carbon sequestration, multiple functions borne by cropland soil should be performed properly in relation to food security and conservation of global and local

environment through the promotion of appropriate farming practices and the development of agricultural infrastructure.

(3) Settlement

- On IPCC guideline, annual carbon change in living biomass pools in settlement remaining settlement is the sum of biomass change in three components; trees, shrubs and herbaceous perennials. Because of that, the followings should be considered.
 - Not only trees newly planted but also trees already planted, shrubs and herbaceous perennials should be grasped their abundance and estimated their biomass change.
 - Biomass change in the three components should be estimated based on difference among the countries or the regions.

Amounts of removal in LULUCF are largely different depending on the territorial conditions of each country. In some countries, the amount may be fairly large. Therefore, the scale of removal amount in each country needs to be properly considered in setting quantified national targets for GHG emissions reductions.

C. GHGs, sectors and source categories to be covered, and possible approaches targeting sectoral emissions

(1) Method and potentials of the reduction of GHGs except CO₂

- GHGs to be targeted should be based on the six gases in Kyoto Protocol. In addition to them, other gases which have greenhouse effect should be considered whether to be included in targets, based on their impacts.

(2) Emissions from fuel used for international aviation and maritime transport

- It is crucial to limit and reduce emissions from fuel used for international aviation and maritime transport, considering the ultimate goal of the Convention.
- Under the article 2 paragraph 2 of the Kyoto protocol, the Parties included in Annex I shall pursue limitation or reduction of emissions of GHG from aviation and marine bunker fuels, working through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO), respectively. ICAO and IMO have been making efforts to develop the policy and measures of limitation and reduction of the emissions, including the improvement of energy efficiency, in accordance and cooperation of all members.
- In considering the policy and measures, it is necessary to stand on the following remarks;
 - Actions of the emissions are conducted in the open seas, not within territorial lands and waters. It is indispensable to newly develop common rules of assignment of the emissions.
 - Airplanes and ships of both developed and developing countries are operated on the same route. The equity of all countries should be secured.
 - It is necessary to secure the consistency of the measures of limitation and reduction and the methodologies of assignment.
 - Various countries, such as operation countries, ownership countries and shipper countries, are involved in these transportations. The measures and methodologies should be based on the circumstances of, for example, the operation of the machinery and the transportation of baggage and passengers.

- The development of the measures of limitation and reduction and the methodologies of assignment should be simultaneously treated. And, it should be based on professional knowledge and scientific information. ICAO and IMO continue to have capabilities and responsibilities to lead the discussion of the framework beyond 2012 and make consensus over the all countries. The parties, therefore, should conduct the following action;
 - The parties should urge ICAO and IMO to develop the framework beyond 2012, including global long-term goal and action plan, and inform COP15 in 2009.

D. Emissions trading and the project-based mechanisms under the Kyoto Protocol

- CDM, JI and emissions trading system as Kyoto flexible mechanism is providing certain contribution to the achievement of commitments in reducing GHG in the first commitment period, but there are following challenges in its implementation.
 - Some point out and are concerned that current CDM and JI contribute neither to the overall global emission reduction nor to the sustainable development. In order to enhance the sustainable development perspective, it is necessary to introduce the system of evaluate not only the effect of GHG emissions reduction, but also the co-benefit to the development.
 - Current CDM needs fundamental review, because it is based on Parties which have committed reduction of absolute amount of emission and Parties which have not, and because eligibilities for CDM projects are limited to certain fields.
 - Introduction of emissions trading in countries and regions depends on political decision of each country, taking into account of the difference in their social, economic and institutional situations.
- How to design the flexible mechanism or similar system after the first commitment period should be discussed in the process of international dialogue on the future framework. In the discussion, building a framework where all the major emitters participate in a responsible way should be the top priority, and the carbon trading system should be regarded as a flexible measure complementally to the overall system.

2. Relevant methodological issues

- Gathering data of energy efficiency and emission for each sector
 - In order to promote the sectoral approach internationally, it is necessary to gather data to be used as a basis for calculation of reduction potential and setting targets (e.g. sectoral efficiency indicators, the amount of activity in each sector, technology introduction menu, the rate of technology introduction).

3. The topics to be covered and the experts/organizations to be invited to participate in the in-session workshop and the round table

(1) Topics

- Sectoral approach
- Development of innovative technologies

(2) Experts/organizations

- World:
 - IEA
 - OECD
 - IPCC
- Japan:
 - AIST (Advanced Industrial Science and Technology)
 - IAE (The Institute of Applied Energy)
 - CRIEPI (Central Research Institute of Electric Power Industry)
 - IEE (The Institute of Energy Economics)
 - IGES (Institute for Global Environmental Strategies)
 - JICA (Japan International Cooperation Agency)
 - NEDO (New Energy and Industrial Technology Development Organization)
 - RITE (Research Institute of Innovative Technology for the Earth)
 - NIES (National Institute for Environmental Studies)
 - Nippon Keidanren (Japan Business Federation)
