



Ministry of the Environment
Japan

Climate Regime Beyond 2012 Basic Considerations

Interim Report

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Global Environment Committee
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The Global Environment Committee of Japan's Central Environment Council, which is a top-level governmental advisory body on environmental policies, discussed from the environmental perspective what considerations Japan should abide by as a basis for international negotiations on the climate regime beyond 2012. A wide range of opinions was expressed from various standpoints. This document is an interim report of the committee based on such discussions. If you have questions or comments, please contact the following.

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1. Climate Regime beyond 2012 – Background

1.1 Why do We Need Further Progress beyond 2012 ?

- ? Climate change countermeasures are in progress in many countries. Now that the Kyoto Protocol was ratified by 119 countries and the European Community (including 32 of the 39 Annex I Parties of the United Nations Framework Convention on Climate Change; UNFCCC) as of November 2003, it may soon come into effect with ratification by the Russian Federation. Thus, there are increasing expectations from both in and outside Japan for new studies on the climate regime beyond 2012 (hereinafter referred to as "the next regime"), which is not specifically addressed in the Kyoto Protocol.

- ? The Intergovernmental Panel on Climate Change (IPCC) issued the Third Assessment Report in April 2001, which summarizes the latest knowledge on climate change and its impacts. Salient findings from this report include the following:
 - The warming over the last 50 years due to anthropogenic greenhouse gases (GHG) can be identified despite uncertainties in forcing due to anthropogenic sulfate aerosols and other natural factors (volcanoes and solar irradiance).
 - Recent regional climate changes, particularly temperature increases, have already affected many physical and biological systems.
 - The globally averaged surface temperature is projected to increase by 1.4 to 5.8°C over the period from 1990 to 2100. The results are for the full range of 35 SRES scenarios, based on a number of climate models. Global mean sea level is projected to rise by 0.09 to 0.88 meters between 1990 and 2100, for the full range of SRES scenarios.
 - Some plant and animal species, natural systems, and human settlements are highly sensitive to climate change and are likely to be adversely affected by changes associated with <1°C of mean global warming. Adverse impacts on species and systems would become more frequent and serious for climatic changes that would accompany a global mean warming of 1-2°C and are highly likely to become even more frequent and serious at higher temperatures.
 - The frequency and intensity of extreme events such as droughts, floods, heat waves, avalanches and storms are likely/very likely to increase, and would result in adverse impacts on human and ecosystems such as an increased risk of damage to a number of crops and ecosystems, and an increased incidence of deaths and serious illnesses in people of the older age groups and urban poor.

The IPCC report showed that increasing atmospheric concentrations of anthropogenic GHG constitute a threat to the adaptability of ecosystems to climate change, as well as to food production and economic development to proceed in a sustainable manner.

- ? In addition, other findings regarding the anthropogenic emissions of GHG and the stabilization of GHG concentrations include, for example, the following:

- The stabilization of climate and systems that are affected by climate can only be achieved long after anthropogenic emissions of GHG have decreased (CO₂ concentrations would stabilize after 100 to 300 years, temperature after several hundred years, and sea-level rise after several hundred to several thousand years).
 - For example, stabilization of CO₂ atmospheric concentrations at 450, 550, 650 or 1,000 ppm would require a downturn in global anthropogenic CO₂ emissions within a decade or so (between 2005 and 2015), a few decades (between 2020 and 2030), several decades (between 2030 and 2045), or about a century (between 2065 and 2090) respectively with a continual steady decrease thereafter.
- ? The Kyoto Protocol sets legally binding numerical targets for GHG emissions by developed countries between 2008 and 2012. However, in order to achieve "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC Article 2), international community will need to strengthen its efforts beyond 2012. New scientific findings on climate change will continue to serve as a basis for negotiations.

1.2 Discussions on Further Commitments beyond 2012 have Already Begun

- ? The Kyoto Protocol states that the Conference of the Parties serving as the Meeting of the Parties to the Protocol (COP/MOP) shall initiate the consideration of commitments for subsequent periods no later than 2005^{*1}. Discussions on the next regime are, therefore, gradually being initiated in international negotiations.

*1 The following provisions of varying scope are considered as the basis for launching negotiations on the next regime .

1. Kyoto Protocol Article 3.9: The COP/MOP shall initiate the consideration of commitments for subsequent periods by Annex I Parties in 2005 at the latest.
2. Kyoto Protocol Article 9.2: The first review of the Kyoto Protocol shall take place at COP/MOP2.
3. Kyoto Protocol Article 13.4(b): The COP/MOP shall periodically examine the obligations of the Parties under this Protocol.
4. The UNFCCC Article 4.2(d): The COP shall review the adequacy of subparagraphs (a) and (b), which define the commitments of Annex I Parties.
5. The UNFCCC Article 7.2(a): The COP shall periodically examine the obligations of the Parties and the institutional arrangements under the Convention.

- ? In the negotiations of the Delhi Ministerial Declaration at the eighth meeting of the Conference of the Parties to the UNFCCC (COP-8) held in New Delhi, India, in October - November 2002, both developed and developing countries were divided over the topic of

future actions and an urgent need to build mutual trust was recognized. Accepting opinions from both sides, the Delhi Declaration was finally adopted as follows.

(Excerpts from the Delhi Ministerial Declaration)

- Recognizing the findings of the IPCC Third Assessment Report, which confirms that significant cuts in global emissions will be necessary to meet the ultimate objective of the UNFCCC, "Parties should promote informal exchange of information on actions relating to mitigation and adaptation^{*2} to assist Parties to continue to develop effective and appropriate responses to climate change."
- "Parties have a right to, and should, promote sustainable development," and "the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and the impact of the implementation of response measures should be given full consideration." "Annex I Parties should ... demonstrate that they are taking the lead in modifying longer-term trends in anthropogenic GHG emissions, consistent with the ultimate objective of the Convention."

*2 mitigation: measures for reduction of GHG emissions and removals by sinks
adaptation: measures limiting the adverse effects of climate change

- ? In the ninth meeting of the Conference of the Parties to the UNFCCC (COP-9) held in Milan, Italy in December 2003, the COP9 President summarized the round-table discussions among ministers, wherein Parties declared that
 - Climate change remains the most important global challenge for humanity.
 - Immediate entry into force of the Kyoto Protocol, which is a significant step towards the ultimate objective of the Convention, is crucial.
 - The use and transfer of existing technology and the promotion of new technology should go hand-in-hand and are complementary.
 - Much more work needs to be done to stabilize atmospheric concentrations of GHG at a level that would prevent dangerous anthropogenic interference with the climate system.
- ? Meanwhile, the dialogues regarding the next regime have already begun.
 - In cooperation with the Government of Brazil, Japan's Ministry of Foreign Affairs (MOFA) invited negotiators from major developed and developing countries to the Informal Meeting on Further Actions against Climate Change, in July 2003. Co-chaired by Japan and Brazil, the meeting discussed strengthening future climate change regime and participation of developing countries.
 - At the "13th Asia-Pacific Seminar on Climate Change," held in Miyazaki, Japan in September 2003, participants from both developed and developing countries held a

dialogue, and recognized the need for continuous capacity building and information sharing on the Clean Development Mechanism (CDM).

- From the viewpoint of developing countries, important efforts are in progress, such as the drafting of rules by the CDM Executive Board for methods and procedures for CDM implementation, and adaptation-related activities supported by the Least Developed Countries Fund set up under the Convention.

- ? Several studies on the next regime are in progress in Japan and abroad by relevant Ministries, think tanks and other organization. Many studies present issues to be considered and options of possible solutions in building the next regime in an organized manner, while a few proposals discuss architecture for a concrete regime.

1.3 Purpose and Scope

- ? Reflecting these circumstances, the Global Environment Committee of Japan's Central Environment Council began discussions on the next regime.
- ? The ensuing international negotiation process is expected to initially decide on the principles and scope of negotiations before proceeding with the more detailed discussions, as in the case of Berlin Mandate that led to the Kyoto Protocol. Therefore, in preparation for launching negotiations on the next regime, the Global Environment Committee decided to lay out in this paper the basic considerations that the Government of Japan will follow in future negotiations, with the aim of building a common framework in which all countries of the world can join.
- ? The Committee will continue its discussions in accordance with how international negotiations would unfold over the next few years on the specific contents of the next regime such as methods for setting GHG targets and implementation procedures, topics which are already being discussed by think tanks and other organizations around the world.

2. Basic Considerations in Approaching the Climate Regime beyond 2012

The following considerations need to be reflected, so that Japan can actively contribute to building international consensus in future negotiations on the next regime.

2.1 Maintaining Progress towards Meeting the Ultimate Objective of the UNFCCC

The United Nations Framework Convention on Climate Change (UNFCCC) states that the ultimate objective is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system," and that this level "should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner" (Article 2). For the climate regime beyond 2012, it is vital to maintain progress to meet the ultimate objective, that is, to ensure environmental integrity of the climate regime.

<Need for Constant progress to meet the ultimate objective of the Convention>

- ? The UNFCCC, ratified by 188 Parties (including the European Community), is the basis for international efforts to address climate change, and various mechanisms have been built. For these reasons, it is appropriate to consider the next regime under the UNFCCC. It means making advance over the long term to reverse the increasing trends in GHG emissions and to shift to reduction, with the aim of achieving the ultimate objective as stated in Article 2 of the UNFCCC. In this context, it is necessary to make constant progress to reduce GHG emissions substantially and to ensure environmental integrity in the next regime.

- ? In order to meet the ultimate objective, it is critical that every country should share the burden of and cooperate in taking GHG reduction measures, based on the global emission limits necessary for stabilizing GHG concentrations. From this perspective, it is important to take every possible advantage of each country's resource contributions and reduction efforts. Therefore, it is important for Japan to establish a basic vision in this area.

<Scientific knowledge on climate change and implementation of countermeasures>

- ? There is no international consensus on either accurate GHG concentration levels that would meet the UNFCCC ultimate objective or on the level of global emissions that would achieve their stabilization. Total GHG emissions are path-dependent and are affected by socio-economic development, which in turn is determined by policies that each society chooses. Lack of consensus also stems from uncertainties in the assessment of climate change impacts and

differences among countries in their concern on the magnitude and nature of impacts¹. However, relevant scientific work over several decades has reduced scientific uncertainty. Countries around the world need to share scientific findings on climate change compiled by the IPCC and other institutions, and further efforts are necessary to enhance scientific knowledge, including that relating to the roles played by carbon sinks and reservoirs, including forests, and the oceans.

- ? There are many paths to attain the ultimate objective. But in view of the irreversibility of climate change and the risk of serious impacts, it is necessary to take responsible measures in accordance with the provision of the Convention that “lack of full scientific certainty should not be used as a reason for postponing such measures” (Article 3.3). At the same time, development of innovative technologies must be pursued in the medium and long term through better international cooperation. Meanwhile, already commercial technologies must be more widely diffused. Appropriate technology diffusion can be stimulated through improved allocation of natural and financial resources, reflecting national circumstances, to this end.
- ? *<Equity between the current and future generations>* To ensure equity between current and future generations, we need to begin taking measures now so as to help future generations avoid unacceptable risks from climate change. The current generation needs to leave open a wide range of options for future generations to take further action to limit climate change should that be necessary

2.2 Bringing the Kyoto Protocol into Effect and Fulfilling Commitment

The Kyoto Protocol is the first step for achieving specific reductions of GHG emissions. In approaching the climate regime beyond 2012, Japan should first of all make efforts to bring the Protocol into effect and fulfill its commitment.

<Bringing the Kyoto Protocol into effect>

- The Kyoto Protocol is the first step by the international community towards meeting the ultimate objective of the UNFCCC. Prior to all other actions, therefore, the Kyoto Protocol should be brought into force in order to steadily complete that first step².

¹ The IPCC Third Assessment Report, using emissions scenarios based on 35 socio-economic assumptions, confirmed clearly that the prediction of future climate change will vary depending on what kind of economic society is taken as the goal.

² As of November 26, 2003, the Kyoto Protocol was ratified by 119 countries and the European Community. The total emissions from developed countries that have ratified the Kyoto Protocol account for about 44.2 percent of total emissions from all developed countries. Ratification by additional developed countries accounting for another 10.8 percent or more is required for the Protocol to come into effect.

<Leadership by developed countries and participation of developing countries in the next regime>

- ? The UNFCCC states that the developed countries should take the lead. Therefore, discussions on the next regime must be based on the premise that developed countries comply with legally binding numerical targets of the first commitment period of the Protocol.
- ? Since total GHG emissions from developing countries are expected to exceed those from developed countries in the future, it is important that, developing countries besides developed countries participate in GHG emission reduction efforts in some form in the next regime. In order to promote participation of developing countries, developed countries need to make demonstrable progress in achieving their commitments, and show that measures to abate climate change, such as energy efficiency improvement, can stimulate the economy.

<Japan's achievement of its target under the Kyoto Protocol and leadership in negotiations on the next regime>

- ? Japan ratified the Kyoto Protocol in June 2002. In order to achieve its six percent reduction target, Japan is required to show good results in its reduction of GHG emissions, which are currently above the base year. In other words, a premise for Japan prior to the consideration of the next regime is the steady implementation of policies and measures according to the New Climate Change Policy Programme (March, 2002). Japan should first strive to put the Kyoto Protocol into effect and ensure fulfillment of its commitments.
- ? Those countries that have not made advances in achieving their commitments are expected to become relatively less influential in international negotiations on the next regime. However, Japan, which has advanced environmental and energy conservation technologies, should lead discussions in ensuing international negotiations by achieving its commitments under the Kyoto Protocol.

2.3 Achieving Global Participation

Ensuring environmental integrity of the climate regime requires global participation. The climate regime beyond 2012 needs to achieve the participation of all countries, including the USA and developing countries.

<Participation of the United States>

- ? The United States of America, the world's largest GHG emitter, has not changed its policy of withdrawal from the Kyoto Protocol. In order to increase the effectiveness of global climate regime, it is necessary to patiently encourage participation of USA and other countries that have not ratified, and to create a regime for the next commitment period in which all

developed countries, including USA, can take the lead under the UNFCCC.

- ? In USA, efforts emphasizing scientific research and technological development, and a Voluntary Greenhouse Gas Reporting Program based on federal law, are in progress at the Federal government level. A basic consensus is also reached on introduction of a "cap and trade" emissions trading system for power plants in some states. Actions on climate change in the private sector are also in progress. For example, the Chicago Climate Exchange has already introduced actual emissions trading.
- ? In addition, Japan-U.S. High-Level Consultations on Climate Change have been initiated to explore common ground and areas for common actions on climate change. These government-to-government consultations were held three times so far, and consensus has been reached on the implementation of joint projects, including development of innovative technology in the medium and long term perspective. Under the High-Level Consultations, there are working level consultations in three areas - Science and Technology, Market Mechanisms, and Developing Country Issues.

<Global participation including both developed and developing countries>

- ? To meet the ultimate objective of the Convention, global emissions of GHG need to be limited to certain levels. The Kyoto Protocol embodies that developed countries should take the lead, but does not contain quantified commitments for developing countries. However, because emissions in developing countries are expected to exceed those of developed countries in future, it is clear that the ultimate objective of the Convention cannot be met through efforts of the developed countries alone. Ensuring environmental integrity of the climate regime indeed requires global participation. The climate regime beyond 2012, therefore, needs to achieve the participation of all countries, including the USA and developing countries.
- ? Japan and other developed countries therefore believe that, in addition to developed countries, developing countries should set some kind of target in the next regime. However, developing countries hold the view that developed countries should undertake emission reduction obligations because past economic growth in developed countries caused the increase in GHG. There is thus still mistrust between the two sides regarding the future regime. In order to build mutual trust between developed and developing countries, while all countries fulfill the commitments imposed on all Parties by the Convention^{*3}, developed countries should show concrete progress in achieving their commitments under the Kyoto Protocol, based on Article 3.1 of the Convention, which states, "In accordance with their common but differentiated responsibilities and respective capabilities," ... "the developed country Parties should take the lead in combating climate change". They must also assist developing countries in technology transfer, capacity building, etc. as stated in the Convention and the Protocol. Furthermore, the issue of adaptation measures in countries particularly vulnerable to adverse

effects of climate change should also be taken into account.

*3

The commitments of all Parties by the UNFCCC (summary of Article 4)

- (a) to develop, update, publish and make available to the Conference of the Parties inventories of anthropogenic emission and removal of GHG;
- (b) to formulate, implement, publish and update programs containing measures for mitigation of and adaptation to climate change;
- (c) to promote and cooperate in the diffusion and transfer of climate change technologies in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;
- (d) to promote and cooperate in the sustainable management and conservation of sinks;
- (e) to cooperate in preparing for adaptation to the impacts of climate change;
- (f) to take climate change into account, to the extent feasible, in their relevant social, economic and environmental policies and measures;
- (g) to promote and cooperate in scientific, technological, socio-economic research, systematic observation intended to further understanding and to reduce the remaining uncertainties regarding climate change;
- (h) to promote and cooperate in the exchange of relevant scientific, technological, technical, socio-economic and legal information related to climate change;
- (i) to promote and cooperate in education, training and public awareness related to climate change; and
- (j) to submit national communications to the Conference of the Parties.

The Delhi Ministerial Declaration on Climate Change and Sustainable Development

- (d) All Parties, taking into account their common but differentiated responsibilities and respective capabilities, and their specific national and regional development priorities, objectives and circumstances, should continue to advance the implementation of their commitments under the Convention to address climate change and its adverse effects in order to achieve sustainable development.

? Many developing countries are already engaged in activities aimed at limiting or reducing GHG. The UNFCCC requires all Parties to develop and submit national communications containing (a) the national inventories of GHG emissions by sources and removals by sinks, and (b) policies and measures to address climate change. So far, as many as 111 developing countries submitted national communications. In addition, developing countries are undertaking many initiatives voluntarily. For example, China is striving to improve energy efficiency and increase the use of renewable energy, while India is making strenuous efforts to use Compressed Natural Gas (CNG) in all vehicles for public transportation in the capital, New Delhi.

Furthermore, as of December 2003, designated national authorities (DNA) for approving CDM projects were established in 41 developing countries. (as against 10 in developed countries).

- ? To promote such efforts and the participation of developing countries, it is important to conduct an objective, quantitative analysis of emission reduction costs and economic impacts, while keeping the necessary reductions in mind. One realistic and progressive way to promote participation of developing countries would be to conduct such an analysis for each developing country, gathering information from the bottom up in order to discover applicable technologies and sectors or industries to undertake countermeasures, and to arrange for technology transfer, while seeking the cooperation of developed countries where necessary. In addition, in transferring technologies to developing countries, development of a social system to improve education, capacity building, working conditions, and the legal system is important to enable the transferred technology to take root in the country and to promote further development of new technologies stemming from the transferred technologies.
- Japan should place particular emphasis on its relations with Asian countries. In assisting developing countries, Japan can proactively enter into dialogue with Asian countries to search together for ways to bring about sustainable development through human resource development and technology transfer.

<Incentives for global participation in the next regime>

- ? In view of the concepts outlined above, studies are needed on incentives that would result in global participation in the next regime.

2.4 Ensuring Equity Based on the Principle of Common but Differentiated Responsibilities

In accordance with the principle of "common but differentiated responsibilities" in the Article 3.1 of the UNFCCC, equity needs to be ensured between developed and developing countries, among developed countries and among developing countries. Differentiated commitments need to be developed in accordance with diverse national circumstances.

<Ensuring equity between developed and developing countries based on the principle of common but differentiated responsibilities>

- ? The UNFCCC clearly states the principle of "common but differentiated responsibilities" and it stipulates not only responsibilities for all Parties but also those applicable only for developed countries, based on the principle expressed in Article 3.1 of the Convention that developed countries should take the lead in combating climate change.
- ? In considering the commitments for the next regime, it is necessary to examine equity between developed and developing countries.
- The great challenge for developing countries is how to satisfy basic needs such as poverty alleviation, health care, and education, and realize sustainable development. Article 3 of the

UNFCCC states that each country should protect the climate system in accordance with its respective capabilities, but developing countries often lack such capabilities to address climate change. Such circumstances should be fully taken into account in considering responsibilities of developing countries.

On the other hand, addressing climate change issue can also contribute to solving those problems in developing countries, and advancing sustainable development can also lead to reduction of GHG emissions and enhancement of removals by sinks. Under the common but differentiated responsibilities, integrating climate change measures into sustainable development is thus essential in developing countries, and support by developed countries for such efforts is important, where necessary.

<Ensuring equity that reflects diversity among developed and developing countries>

- ? Even among developed countries, there are differences in total GHG emissions, in the cost-effectiveness of climate change measures, and in energy demand for cooling or heating according to geographic location, etc. Such realities should be reflected in efforts to ensure equity.

- ? Developing countries also vary widely: from large emitters to small ones; from developing countries that are relatively closer to the developed ones in terms of their economic development to the Least Developed Countries; from island countries, low lying coastal countries and inland countries expected to be seriously affected, to others without such prospects; and from countries with the capacity to draw up and implement policies to those without such capacity. In promoting the participation of developing countries in the next regime and in ensuring equity, due consideration should be given to such diversity among countries.

- ? In ensuring equity from the viewpoint that anthropogenic GHG emissions are causing climate change, the relative scale of total emissions of each country, which is responsible for international measures, should also be taken into consideration. At the same time, it should be noted that the largest share of historical and current global emissions of GHG has originated in developed countries and that per capita emissions in developing countries are still relatively low, as stated in the Convention.

2.5 Negotiations Building on Existing International Agreements

International negotiations on climate change resulted in the adoption and entry into force of the UNFCCC, and culminated in the adoption of the landmark Kyoto Protocol. Subsequent to the adoption of the Protocol, negotiations have again continued. Through such invaluable efforts and agreements, a common ground is being built for countries to take measures to address climate change. Building on these international agreements serving as the bases for negotiating the climate regime beyond 2012, further discussions are necessary on how to develop and improve the architecture of the Convention and the Protocol, bearing in mind such considerations as the need for maintaining progress towards meeting the ultimate objective of the UNFCCC and achieving global participation.

<Accumulation of international agreements on climate change>

- ? Ever since the international negotiations on the UNFCCC were launched in 1990, many agreements*4 were reached as the common basis for combating climate change. These include the adoption of Convention itself in 1992, the Kyoto Protocol in 1997, and the Marrakech Accords in 2001.

*4

Main features of the agreements reached by the UNFCCC (examples):

- The principle of common but differentiated responsibilities and the principle of equity
- The ultimate objective to achieve stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system
- The responsibility of all Parties to develop and publish national inventories of emissions and removal of GHG and to formulate and implement programs containing specific measures
- The commitment imposed on developed countries to make an effort to return their anthropogenic emissions of GHG to 1990 levels, based on the principle that developed countries should take the lead in combating climate change
- Commitments by developed countries to take specific actions to promote measures in developing countries, such as funding and technology transfer

Main features of the agreements reached in the Kyoto Protocol (examples):

- Setting legally-binding differentiated targets for developed countries with a specific timeframe.
- The Kyoto Protocol and its detailed rules, and the Marrakech Accords contain rules relating to the next commitment period that includes measures allowing annex-I Parties to bank excess allowances from the first commitment period to be applied to the next commitment period, and to deduct up to 1.3 times the amount of excess emissions from the assigned amount for the next commitment period.
- Work is in progress towards establishing reporting and reviewing mechanisms to implement the Protocol.
- Establishment of a Compliance Committee (with 10 members each in its facilitative and

enforcement branches) once the Protocol comes into effect, to provide advice and promote compliance,

- Creation of Adaptation Fund to finance adaptation projects in developing countries. The fund is to be financed by a two percent levy on carbon credits generated by the clean development mechanism (CDM) projects, in addition to funding provided by developed countries.

(Kyoto Mechanisms)

- Among the Kyoto Mechanisms, which aim to achieve numerical targets of the Kyoto Protocol in a cost-effective manner, Joint Implementation and CDM projects are now in progress and many of them will continue beyond 2012.
- The CDM Executive Board was set up to substantively manage and supervise CDM projects. The Board established subordinate organizations, including the CDM Accreditation Panel and the Methodology Panel, which have been actively working to facilitate a prompt start for CDM projects by deciding on methods and procedures necessary for CDM implementation, such as accrediting operational entities that can issue practical approval for CDM projects, and authorizing methodologies such as baseline settings for small-scale CDM projects. The Board has already held ten meetings.
- An international data management system (international transaction log) to check international transactions of allowances, etc. is being established.
- The Parties to the Protocol are improving their domestic institutions in accordance with the rules of the Protocol, for example by preparing national registries to control credits and by formulating guidelines for the approval of CDM projects .

<Negotiations based on the international agreements>

- ? In approaching climate regime beyond 2012, discussions are necessary on how to develop and improve the basic architecture of the Convention and the Protocol, building on the above-mentioned international agreements, and bearing in mind such considerations as the need for keeping progress towards meeting the ultimate objective of the UNFCCC and achieving global participation. In actual negotiations, while countries will assert positions that reflect their national circumstances, they need to be flexible in order to reach an international agreement³.

2.6 International Consensus Building Process by National Governments with the Participation of Various Actors

National governments are held responsible for the international regime, and it is important that they achieve a consensus in the process of international negotiations, while disclosing relevant information and ensuring the participation of various actors such as businesses and non-governmental organizations.

<National governments have the responsibility and competence relating to the Convention>

- ? Climate change is a serious problem that affects the future of mankind, and the responsibility for its solution should be assumed by national governments under the aegis of the United Nations, which articulates the views of the international community. Negotiations on climate change issue are implemented through the United Nations, whose members are national

³ In discussions of the Global Environment Committee of the Council, diverse views were expressed on climate regime beyond 2012. They may be broadly grouped as follows: one approach holds that we should build the next regime in which all countries participate, building on relevant international agreements adopted so far. The other approach holds that, in order to pursue global participation, Japan should take a step back to the starting point of the UNFCCC, if necessary. The specific views included below are for reference only.

- It is quite clear that Japan respects international agreements relating to the Convention and the Kyoto Protocol. We should encourage the participation of USA through multi-lateral negotiations that include the EU as well as developing countries, bearing in mind that USA might change its position during the negotiation process over coming years.
- If negotiations are solely based on the Kyoto Protocol, we cannot expect participation of USA and developing countries in the regime. We should, therefore, step back to the starting point of climate change negotiations, and put forward more flexible ideas.
- As the country that served as chair during COP-3 (the Kyoto Conference), as well as one of the countries that ratified the Kyoto Protocol, Japan should first express its own principles regarding the next initiatives based on global interest, and then proceed to negotiate with USA and developing countries.

governments, with the UNFCCC serving as an international forum. Nations, however, retain the responsibility and competence to ratify and implement the Convention and the Protocol.

<Participation of multi-stakeholders in the international negotiation process>

- ? In order to achieve more effective implementation of international agreements, it is useful to invite participation of multiple stakeholders such as citizens, businesses, and local governments, in addition to national governments, in the process of international negotiations. Another issue for consideration is measures to reduce GHG emissions from multinational corporations that operate in more than two countries. The national government, which works as the negotiator and secretariat in international negotiations, should regularly share information with its stakeholders and try to build a transparent participatory process as well as support the efforts of these various stakeholders.

2.7 Making the Environment and Economy Mutually Reinforcing

In order to sustain efforts over a long period of time, we need structural reforms of the economy that aim to build a mutually reinforcing relationship between the environment and economy. This relationship is like a 'virtuous cycle,' in which each component enhances the other's quality, so that combating climate change contributes positively to economic development, and vice versa

Technology will play one of the most important roles in promoting such reforms. Both the development of technologies from a long term point of view as well as diffusion of existing technologies is necessary. In addition, reforms should be promoted so that the market can provide sufficient incentives for technology development and diffusion.

<Reform to bring environment and economy into a mutually reinforcing relationship>

- ? Climate change is one of the largest global-scale phenomena caused primarily by human beings. Climate change, if not adequately addressed, will not only jeopardize the economy, but will also undermine our socio-economic foundation, affecting future generations regardless of the national borders. It is commonly perceived that the ultimate objective of the Convention must be met within a time-frame sufficient to enable economic development to proceed in a sustainable manner.
- ? As implementation of measures against climate change requires long-term and wide-ranging policies, structural reforms of the economy are also necessary. Such reform must be based on a premise that addressing environmental problems can be consistent with economic growth. In a reformed economy, measures for reducing GHG emissions are taken such that implementation of measures against climate change stimulates further economic growth, which in turn leads to advancing further climate change measures. In other words, structural reforms of the economy that create a 'virtuous cycle' of the environment and economy are necessary. To this end, we

need to pursue not only changes in the lifestyle and industrial structure, but also reforms in institutions that support such structures and in the entire social setup.

- ? The concept of the mutually reinforcing relationship between the environment and economy is important for developed countries, because building such a relationship in developed countries could provide models for sustainable development in developing countries, and eventually may lead to participation of developing countries in the future regime.

<Role of technology>

- ? Technology will play one of the most important roles in a society where a 'virtuous cycle' of the environment and economy is created. Technologies that contribute to reducing GHG emissions include energy conservation technologies, GHG free or low-GHG technologies, and technologies that absorb, sequester, or eliminate GHG. The development and diffusion of technologies aimed at reducing GHG emissions, such as energy conservation and renewable energy, will also reduce energy costs and create new business opportunities.
- ? In considering the role of technology, it is important to diffuse and combine existing technologies already in the implementation phase as well as to pursue long-range development of innovative technologies. Combining existing technologies has potential to enhance each technology's effectiveness in a system. Constant efforts for technology development and diffusion will lift people's hopes for technological innovation, promote investment and entry of high-quality human resources into the field, and enhance the potential to realize hopes.
- ? It is worth noting that new technologies have been developed while overcoming difficulties and constraints. A vision for the future, clearly indicated by governments, encourages expanded investment and demand for development, promotion and diffusion of technologies. Therefore, it is important to formulate clear medium and long-term strategies for development and diffusion of technologies that reduce GHG emissions. Economic reforms are necessary so that the market will provide incentives to promote development and diffusion of relevant technologies. For example, policy instruments such as subsidies for technology adoption can be used at an early stage of promoting a novel technology. This can lead to a "virtuous cycle" of cost reduction and market expansion.

3. Concluding Remarks

During the summer of 2003, Japan suffered from low temperatures and the lack of sunshine, while Europe experienced severe heat waves that caused forest fires and human death. As part of the increasing trend of extreme weather events in recent years, large-scale forest fires have occurred in Europe, Siberia, Asia, and USA and serious impacts on agriculture and livestock farming are becoming more prominent. Although current scientific knowledge has not yet been able to articulate causal links between each severe extreme weather event around the world and global warming, progressive climate change is predicted to result in more frequent and more severe extreme weather events, with increasing damage.

As noted elsewhere in this paper, the UNFCCC prescribes that, "where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures" ... "the Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change" ... "taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost" (Article 3.3).

The IPCC Third Assessment Report shows that, if concentrations of GHG are to stabilize at, for example, 550 ppm - about twice the concentration prior to the industrial revolution - global emissions will have to enter a downward trend in 20-30 years, and even if that is achieved, the global average temperature will still rise by 1.6 to nearly 2.9 °C as of 2100. Even with this temperature rise, the environment will become something that humans have not so far experienced, requiring measures for human adaptation to the new environment as well as for mitigation of climate change. Climate change has already begun, and in taking necessary steps to ensure sustainable development for humans, we should recognize that not much time is left.

This paper is an interim report of the considerations on which Japan's future international response will be founded. The Global Environment Committee of Japan's Central Environment Council shall continue its studies on specific details of the next regime. The Committee expects the Japanese Government to benefit from its experiences and lessons gained in past international negotiations of the UNFCCC and the Kyoto Protocol, and to conduct its future international negotiations in such a way as to reflect the points mentioned in this paper.

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As of January 30, 2004**

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