Discussion Needed on Global Long-term Environmental Targets Based on the Kyoto Protocol

Japan's Ministry of Economy, Trade and Industry and Some Companies Are Reluctant to Strengthen Controls

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Citizens Alliance for Saving the Atmosphere and the Earth

Main Points

- The framework for 2013 and thereafter must be based on specific logical rules and must have a long-term horizon.
- The report by the Ministry of Economy, Trade and Industry's (METI) Industrial Structure Council has little sense of crisis about progressing climate change, and exhibits a lack of will to arrest it. CASA finds serious problems with the perception of the climate change issue by METI and some Japanese companies, and with their stance seeking a more lenient framework in 2013 and thereafter.
- Discussions should immediately begin on global long-term environmental targets. Discussion on long-term global environmental targets means discussing whether emissions are at a dangerous level or not, and how we arrived at this situation. This discussion has led us to see that substantial emission reductions are needed immediately, and that such reductions are essential for assuring sustainable development.
- Japan needs substantial emission reductions, and CASA's calculations show that they are quite possible. Japan's 2010 greenhouse gas (GHG) emissions can be reduced 11% from the baseline year using only domestic measures involving technological, power production, and demand-side solutions.

1. Needed: A Framework Based on Specific Logical Rules and Having a Long-term Horizon

The Kyoto Protocol stipulates that discussion on the framework for 2013 and thereafter (the second commitment period) must begin by 2005. Already such framework-related discussion has begun at international negotiation venues, and there are proposals from a variety of perspectives.

While these proposals have differing perspectives, they suggest that governments must take the following two things into consideration when designing the international framework for the second commitment period **(Fig. 1).**

First is how to decide on long-term global targets. Article 2 of the Framework Convention on Climate Change (FCCC) states that the convention's objective is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system," but Article 3.1 of the Kyoto Protocol stipulates only "overall emissions of such gases by at least 5 per cent below 1990 levels" by 2012 in the developed countries. Although the protocol deserves historical distinction for being the first step in addressing climate change, we should understand that it is terribly inadequate to prevent climate change.

Second is how to determine each country's assigned amount, and now to provide incentives for participation. Assigned amounts should be decided equitably, and we needed a framework that provides incentives for the participation of as many countries as possible. Many of the proposals on the framework for the second commitment period address this matter.

CASA welcomes such discussions because they attempt to offer specific logical rules for designing the second commitment period framework. Designing that framework requires learning from the mistakes made in creating the Kyoto Protocol, and agreeing on specific logical rules for deciding assigned emission amounts. This will also decrease negotiation costs and increase equity among nations.

It is important here to have a long-term horizon, and to quickly make substantial cuts in GHG emissions. Climate change has become all too real, as in the European heat wave that killed as many as 10,000 in France, severe flooding in southeast China, and forest fires in southern Europe and in North and South America. CASA therefore believes it is necessary to institute further cuts in GHG emissions beginning in 2013 if the FCCC's ultimate objective is to be attained.

Hence the framework for the second commitment period must be based on specific logical rules and must have a long-term horizon. Further, it must be based on the Kyoto Protocol. Governments must have further discussion based on the Kyoto Protocol, which itself resulted from long discussion, and then move on to more advanced efforts.

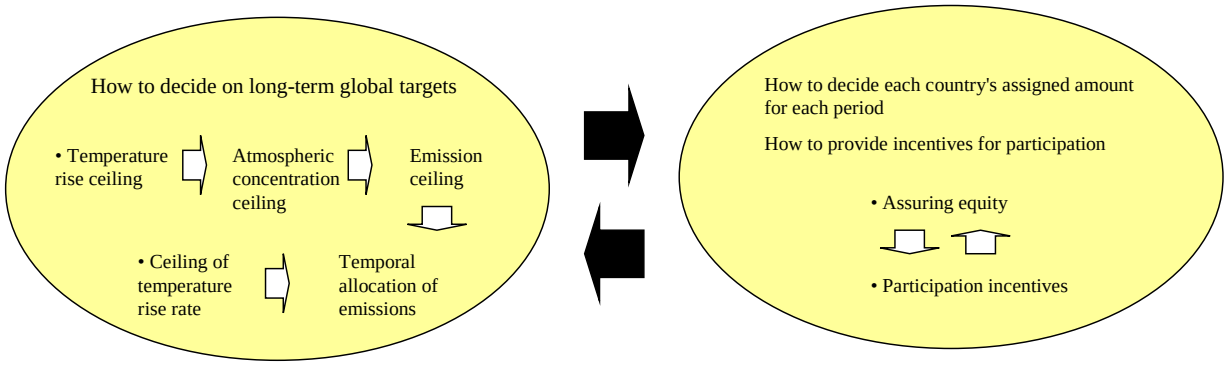

Fig. 1 Things to Be Considered When Designing the International Framework for 2013 and Thereafter

2. Regressive Thinking on Global Warming Controls by METI and Some Japanese Companies

The Environmental Committee of METI's Industrial Structure Council has a Global Environmental Subcommittee that spelled out its thinking on the international framework for the second commitment period in a July 2003 report entitled "Perspectives and Actions to Construct a Future Sustainable Framework on Climate Change" (http://www.meti.go.jp/english/report/downloadfiles/gClimateChange0307e.pdf), which has already been made available at international negotiation venues.

CASA believes that from the perspective of arresting climate change, METI's awareness of the climate change problem and its tack on the second commitment period framework are highly problematic.

This report's first problem is its low sense of crisis about climate change. It considerably downplays the serious impacts of climate change on the ecosystem and human society, and the reader discerns no concept of the precautionary principle.

The IPCC assessment reports say it is certain that the ecosystem and human society will be negatively affected. The uncertainty of scientific findings means "We don't know what will happen, or how great its effects will be," not "Perhaps nothing will happen." Even if the temperature increase is between 1 and 2°C, scientists say the impacts will grow at an accelerating pace and be qualitatively different from those of a smaller temperature increase in terms of both scale and extent. It is inadmissible from the perspective of the precautionary principle to postpone taking action by saying that scientific uncertainty is great on the grounds that the IPCC Third Assessment Report predicts a temperature increase of between 1.4 and 5.8°C 100 years in the future.

Second, the government report expresses dissatisfaction with the protocol's supposed unfairness, and shows that the government lacks the will to discharge its reduction obligation under the protocol.

For example, the idea of "common but differentiated responsibilities" was

affirmed at the Rio Earth Summit, and advocated in the FCCC and the Kyoto Protocol, but the report gives it little importance, and everywhere throughout the report one finds arguments that seem to dismiss the responsibility of Japan and other countries of the North, which have enormous GHG emissions. Additionally, in substance the report rehashes issues already settled, such as by saying it is beyond the government's ability to keep GHG emissions under a certain level, or that in Japan energy conservation has already achieved great strides, making it difficult to make further cuts, or that because of various social circumstances it is not appropriate to use 1990 as the baseline year.

Despite its problems, the Kyoto Protocol is the only international agreement for stopping climate change, and its sound implementation is the first step in our efforts to do so. Surely, if Japan works steadily at domestic measures and achieves reduction targets with capacity to spare, it would be sending the right message as the country that hosted COP3, where the Kyoto Protocol was adopted.

The third problem is that the report seeks a more lenient framework for the second commitment period.

According to the IPCC Second Assessment Report, an immediate cut in GHG emissions of 50 to 70% would be needed to stabilize the atmosphere at current concentrations. Even the COP8 Delhi Ministerial Declaration (November 2002) stated, "Recognizing with concern 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 Convention, and recognizing the on-going consideration in the Subsidiary Body for Scientific and Technological Advice of the implications of this report..." Such being the case, the years 2013 and thereafter should have higher reduction targets than those of the first commitment period. Having noted, from a long-term horizon, the need to substantially reduce GHG emissions soon, governments must discuss how to achieve the cuts.

Once we have an awareness of the serious impacts of climate change, and give thought to the magnitude of the GHG reductions needed to stop it, we are faced by a choice between two approaches: consider what Japan's role should be, or myopically decide that all possible action has already been taken.

As this shows, the METI Industrial Structure Council report has little sense of crisis about advancing climate change, and exhibits a lack of will to arrest it. CASA finds serious problems with the perception of the climate change issue by METI and some Japanese companies, and with their stance seeking a more lenient framework in 2013 and thereafter. It is deplorable that a council of Japan's government, which hosted COP3 where the Kyoto Protocol was adopted, would release such a report at a crucial time before the protocol takes effect.

Further, most of the members of this council, which vetted the report's contents, are industry representatives. The opinions of citizens and environmental NGOs are nowhere to be seen.

3. Discussion Needed on Global Long-term Environmental Targets

CASA believes that discussion on global long-term environmental targets is needed now because of concerns that many people involved in the climate change issue are preoccupied with discussion about assigned amounts, and have lost sight of the FCCC's ultimate goal.

Owing to excessive emphasis on incentives for participation, some of the proposals on the 2013-and-beyond framework ignore the connection with global long-term environmental targets, so METI is not unique in this sense. Nevertheless, this is a matter of confused priorities.

From the cause-and-effect relationships of climate change **(Fig. 2)** it is evident that although the FCCC's objective is to stabilize atmospheric GHG concentrations (III in the figure), deciding on GHG levels makes it vital to gain a better understanding of maximum temperature and sea level rise (IV), the maximum rate of increase, and the impacts of climate change on the ecosystem and human society (V, VI).

The IPCC Third Assessment Report says that even if atmospheric GHG concentrations are stabilized at their current levels, it is unlikely that the Earth can avoid a temperature increase of 1°C or more. But if the temperature increase is between 1 and 2°C, scientists say the impacts will grow at an accelerating pace and be qualitatively different from those of a smaller temperature increase in terms of both scale and extent. On this basis the Climate Action Network, an international network addressing global warming, takes the following position (http://www.climatenetwork.org/docs/CAN-adequacy30102002.pdf).

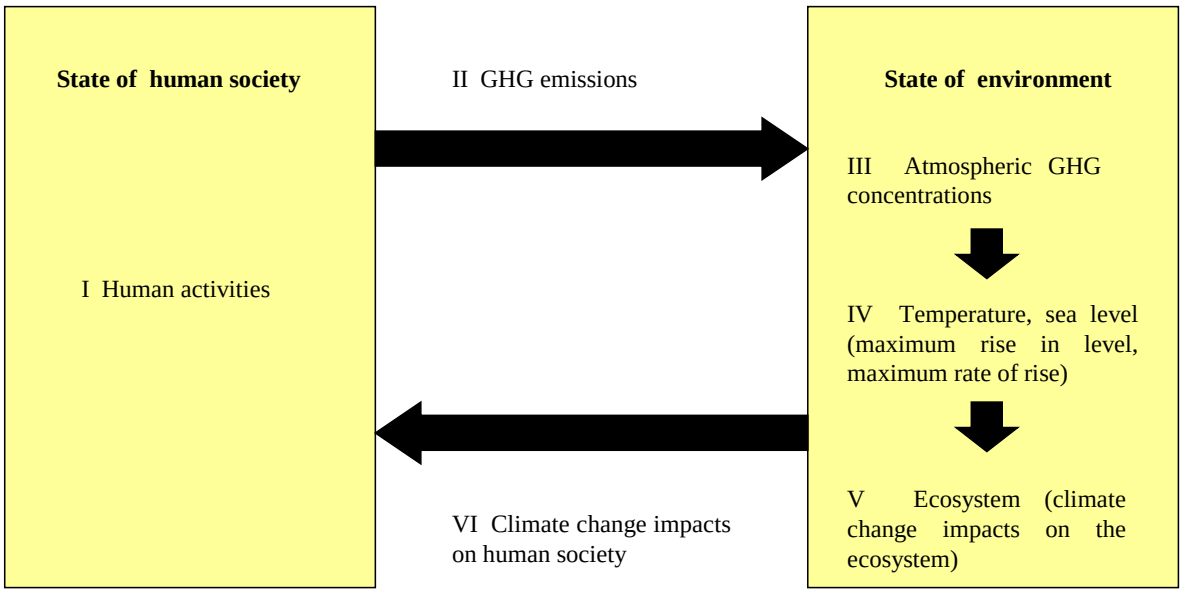

Fig. 2 Cause-and-effect Relationships of Climate Change

- The global mean temperature increase should be kept below 2°C above preindustrial levels with the temperature being reduced as rapidly as possible after the time of peaking.
- The rate of warming should be brought below a ceiling of 0.1°C temperature change per decade as soon as possible in order to allow ecosystems to adapt.
- The inertia of the climate system means that keeping the global mean temperature increase below 2°C will require rapid global emission reductions, with emissions peaking within the next 20 years and declining quickly thereafter.

Discussion on long-term global environmental targets means discussing whether emissions are at a dangerous level or not, and how we arrived at this situation. The world must be aware that this discussion must begin immediately because dawdling could mean losing options for stabilizing atmospheric GHG concentrations at levels that are not dangerous.

Although current scientific findings entail uncertainty in the predicted temperature rise and the impacts of climate change, this must not be an excuse to put off discussion. FCCC Article 3.3 says, "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," and therefore discussion must begin immediately on global long-term targets.

Such discussion would make people see that substantial emission reductions are needed immediately, and that such reductions are essential for assuring sustainable development. Economic development is threatened not only by the environmental limits that climate change imposes, but also by resource limits. In fact, there must be an awareness that expediting remedial measures will bring about sustainable economic development. As observed above, Japan's METI and some companies lack this awareness.

4. Japan Must and Can Reduce Its Emissions Significantly

Japan's 2001 GHG emissions were 1,299,400,000 tons (CO_2 equivalent), a 5.2% increase over the baseline year, showing that not only has Japan fallen short of the 6% reduction the Kyoto Protocol stipulates, it must now achieve an 11% reduction because of policy failure. Total emissions of CO_2, which accounts for 90% of GHGs, amounted to 1,213,700,000 tons, an 8.2% increase over 1990. Japan must achieve significant emission cuts, but CASA's calculations shows this is well within the realm of possibility.

Characteristics of Japan's CO_2 emissions are that the industrial sector accounts for more than 50% (including energy conversion and industrial processes), and that adding emissions from the service and transport sectors (trucks and other sources) brings the share for business to about 80%. But the Japanese government's

2002 Guideline of Measures to Prevent Global Warming is a highly dubious plan because it not only calls for achieving 5.5% of the 6% reduction with sinks and the Kyoto mechanisms, but it also has domestic measures that depend on a large increase in nuclear power, which stands no chance of happening, and on the Keidanren Voluntary Action Plan, which is not backed by government policy.

CASA used its independently developed "bottom-up end-user model" to examine the possibilities for reducing CO_2 emissions (from energy consumption) by exploring two scenarios: (1) technological measures only, and (2) a combination of measures involving technology, power production, and demand-side management. Both scenarios envision policies unlike those of the government by counting on no new nuclear power plants at all, and assuming that each nuclear plant will be decommissioned once it completes 30 years of service. Translating these CASA scenarios into reality will require the introduction and reinforcement of various policies and measures using regulatory, economic, and inducement means in all areas, and this aspect was also considered.

For CFC substitutes (HFCs, SF_6, and PFCs; "three gases") we assumed that HFCs, which have many alternatives, would be quickly replaced by substitutable natural substances, and that PFCs and SF_6, for which substitutes have not been specified, would be strictly managed on site. We predicted 2010 emissions under these assumptions.

Results show that using only domestic measures involving technology, power production, and demand-side management would be sufficient to achieve an 11% reduction (about 9% CO_2, about 2% three-gas total) from the baseline year in Japan's GHG emissions in 2010 **(Table 1, Fig. 3)**.

1. Policies depending on technological measures alone would only lower CO_2 emissions to the 1990 level in 2010 (CASA technological measures scenario, 30-year nuclear phaseout case).
2. If the government used appropriate policies and measures to comprehensively implement three types of remedial measures involving technology, power production, and demand-side management, it could reduce CO_2 emissions about 9% off the baseline year level in 2010 (CASA combination of measures scenario, 30-year nuclear phaseout case).
3. If HFCs are basically replaced by substitutes, if PFCs and SF_6 are strictly controlled on site, and if currently available technological measures are implemented, it would be possible to reduce the total three-gas emissions about 2% below the 1995 level in 2010.
4. Comparing the cost of technological measures to reduce CO_2 and the amount by which energy costs are cut yields a positive effect of about ¥2.7 trillion on a 2010 single-year base.

Table 2　Effectiveness of Japan's CO_2 Emission Reduction in 2010 According to CASA Scenarios

Gas type		CASA scenarios		Reference: New Guideline
		(1)Technological measures	(2) Combination of measures	
CO_2 (from energy use)	Energy conversion sector	＋ 0.8%	－ 2.5%	－
	Industrial sector	－ 6.4%	－14.9%	－ 7.0%
	Transport sector	＋13.8%	－ 2.6%	＋17.0%
	Service sector	－ 9.1%	－14.0%	－ 2.0%
	Household sector	＋14.4%	＋ 6.1%	(Service, household)
	CO_2 total	**＋ 0.5%**	**－ 8.7%**	**± 0.0%**
HFC・PFC・SF_6			－ 2.0%	＋ 2.0%
Total for CO_2, HFCs, PFCs, and SF_6		**＋ 0.5%**	**－ 10.7%**	**＋ 2.0%**

*Note: Baseline year for CO_2 is 1990; for HFCs, PFCs, and SF_6 it is 1995.

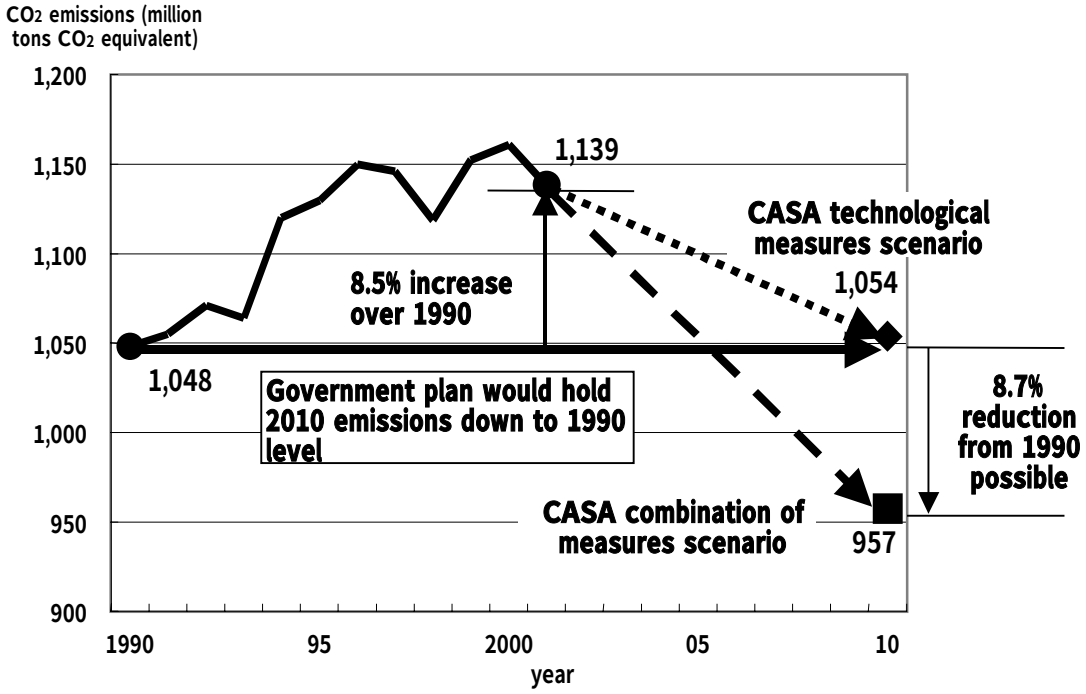

Fig. 3　Predicted CO_2 Emissions (from Energy Use) in 2010

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