

Japan's Implementation Plan & Post-Kyoto Frameworks

Global warming is inevitable to some extent, even if we continue to mitigate climate change. This is why the issue attracts growing interests across the globe. Today, I would like to talk about the issue from three aspects.

The Kyoto Protocol was negotiated and agreed in December 1997. Six months before the Kyoto conference, Keidanren, Japan Business Federation, launched a voluntary initiative to stabilize their CO₂ emissions in 2010 at the level of 1990. Currently 35 sectors are participating in this initiative with their total emissions well on track. In June 1998, the Japanese Government introduced the Kyoto Target Implementation Plan and revised it twice in 2002 and 2005, introducing several policies and measures in each case. For example, the 1998 plan introduced so-called "top runner approach" to mandate all passenger cars to have the highest fuel efficiency in each category. In 2002, they introduced RPS or Renewable Portfolio Standard to promote renewable energies. RPS forced power generators either to generate by themselves or purchase electricity by renewable energies. Moreover, the Government and private enterprises are eager to earn credits accrued from investment in CDM projects in developing countries where reduction is less costly. Despite all those efforts, Japan's GHG emissions in 2005 marked an 8.1% increase over the base year dampening the prospect of achieving the Kyoto goal. The Government must revise the plan again and introduce more stringent measures. This is because the initial allocation was quite unfair to Japan. At a glance, EU's target of -8% seems severe than Japan's -6%, but it is not. The cost to implement the target is much higher in Japan than in EU. (Table 1)

With difficulties in reducing emissions, there remain only two options Japan could take; one is to purchase surplus allowances from Russia. The other is to stay short of target (non compliance), while demonstrating to the world Japan's utmost efforts taken to comply with the target. The first option which I call "compliance on paper" is not what I will recommend, since it will not bring down global emissions. Russia already has too much surplus or "hot-air", and to sell them to Japan, they would not have to cut emissions at all. My preference is the second one. In this case, however, Japan may be blamed for not adhering to international commitment, if we fail to show the world we did our best. To demonstrate Japan's efforts should include that our performance of energy efficiencies in all the major energy and industrial sectors, such as power generation and iron & steel, are at the top of the world.

Of course this does not necessarily mean that Japan is not willing to tackle global warming. On the contrary, we do share a common view with international

community that we need to curb GHG emissions substantially. If we are to prevent the concentration level reaching the one that may pose dangerous interferences to ecosystem, including human beings, we must halve the current emission level within a century. In view of the rapid emission growth in developing countries, this will not likely happen without dynamic technology innovation. There are several technologies being developed, some of them at the basic R&D stage and the other at demonstration stage. They are, for example, clean coal technologies, technologies for renewable energies such as wind, photo-voltaic and biofuel, or fuel cell, nuclear fusion and space power generation system and CCS (carbon capture and storage).

The point here is what international framework can stimulate and promote technology innovation. This is the key issue in negotiating “Post-Kyoto” framework. In this respect, I would like to introduce a study conducted by Dr. K. Akimoto of RITE (Research Institute of Innovative Technology for the Earth), an institution located in Kyoto. He compared two cases in the model; the first one to set CO₂ emission target in 2050 at the level of 2000 and the second one to set the same target but also with short term targets in every 10 years. The cumulative emissions until 2050 in the two cases are the same (Figure 1). The outcome is shown here. This figure shows structural change in power generation sector. In short, the first one, with longer term target only, can induce much more adoption of technologies that are very costly at first but will become less expensive by learning-by-doing. Wind power is a typical example.

The first case costs 7 trillion dollars less for the world. This clearly suggests that longer term target is preferable for the Post Kyoto international framework. Policy makers should pay attention to this point.

The final point I would like to draw your attention is how to prioritize global issues.

The UN Millennium Summit in 2000 identified eight issues we must address simultaneously, including poverty, illness, hunger as well as sustainable development, in the Millennium Development Goals. In addition, the recent gas and oil price hike and the uncertainty of gas supply from Russia have led to the emergence of energy security issue as one of the most urgent. Between energy security and climate change, there exist synergies and trade-offs. Energy savings will be beneficial for both, while increasing the dependence upon more coal or alternative fuels like oil sands will be needed for energy security but adversely affect climate change.

As I said before, we do have many important issues, but scarce resources. To tackle climate change means allocating the resource here that would have been spent for other issues. I know how difficult to prioritize among issues, time span of them are

so different. Because of that, we must keep this priority issue in our mind whenever we try to cope with climate change and adopt the most efficient policies and measures, so that saved resources will be used in other equally important items.

(Table 1)

Difference of Marginal Cost to implement the Kyoto Protocol Target \$/tC (1990 value)

	No Emissions Trading	With Emissions Trading
Japan	331	68
Europe	211	
USA	178	

Source; IPCC Third Assessment Report

(Figure 1).

