Japanese Domestic Policy & Cap and Trade

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Before Discussion of Climate Change

- Scarce resources and their efficient allocation
- Millennium Development Goals (MDGs)

  poverty/hunger, HIV/AIDS/malaria (disease), primary education, child mortality, environmental sustainability, maternal health, gender equality, global partnership for development
- Climate change is classified under "environmental sustainability"
- In addition, energy security

What is Important in Climate Change Discussion

- Ultimate Objective:

  stabilization of GHG concentration at a level that is not dangerous; no global agreement
- Long-term target (such as 2050, 2100)

  non-binding
- Mid-term target (post-Kyoto)

  must include major emitters such as US, China
- To what extent Japan can reduce

Three Issues to Take into Account

- No possibility to continue Kyoto-like international framework that includes US, China and India (Need to invite them in another way)
- Catastrophe is unlikely at least for the coming 100 years (IPCC AR4); this means there is no threshold for GHG concentration at least in 100 years
- Technology is the key. The most important criteria for domestic and global climate policy is whether it promotes technological development/diffusion.

Technology is the Key

- $\text{CO2 emissions} = \frac{\text{CO2 emissions}}{\text{GDP}} \times \text{GDP}$
- $\Delta \text{CO2}/\text{CO2}$

$$= \frac{\Delta(\text{CO2 emissions}/\text{GDP})}{\text{CO2 emissions}/\text{GDP}} + \frac{\Delta \text{GDP}}{\text{GDP}}$$

$$= \text{Technology improvement ratio} + \text{GDP growth ratio}$$

To achieve 50% reduction	
GDP loss(%)	Tech. imp. ratio(%)
0	3.856
10	3.681
20	3.485
30	3.262
40	3.005
50	2.701
80	1.174

Tech. imp. ratio of 1.227%	
CO2 reduction(%)	GDP loss (%)
0	58.710
10	62.839
20	66.968
30	71.097
40	75.226
50	79.355

Average annual technology improvement ratio since 1970 is1.227%.

BAU GDP growth ratio up to 2050 is 2.76%/yr
(IPCC SRES B2 scenario)

My Idea

- Intensity target for each sector (including building, transport and electric appliances)
- Target should definitely be global top-runner
- This is the best way to promote technological development/diffusion. In addition…
- Focus government R&D into 21 innovative technologies (CCS, new generation nuclear power, etc.)
- Potential global reduction in 2020 of 6.3 Gt/CO2

Concerns on cap & trade

- Cap matters, not trade
- Whether to cap and trade reduce emissions

J. Sachs, *Scientific American*, March 2008

- **"If we try to restrain emissions without a fundamentally new set of technologies, we will end up stifling economic growth, including the development prospects for billions of people."**
- **"Economists often talk as though putting a price on carbon emissions—through tradable permits or a carbon tax—will be enough to deliver the needed reductions in those emissions. This is not true."**

Nigel Lawson *An Appeal to Reason* (2008) p. 74

- "It is essentially a government-controlled, administrative rationing system in which the rations can subsequently be traded. It is rather as if… we were to allocate Soviet-style production permits...
- "…for the market-makers and other middlemen who trade in the CO2 emission permits… it presents a lucrative and – they hope – growing business opportunity."

In addition, Lawrence Summers and Alan Greenspan

Other points

- We should watch what's going on in the EU (We thank the EU for its impressive experiments)
- We have many things to learn from the European experience

Basic difference between EU, US and Japan

- In the EU and US, slight possibility of tax nor voluntary initiative without penalty. This leads to very limited choice.

Our Observations

- Continuation of EU ETS is important and for that purpose stability of permit price is most important (e.g. Eastern European countries)
- French presidency

  auction, use of auction revenue, restriction of CDM, competitiveness
- Leakage is the biggest concern

  grandfathering, sectoral approach, trade measures
- No evidence of technology innovation investment thus far
- Linkage with US is uncertain

Other Points (continued)

- Without threshold concentration value, no need to have absolute cap for mid-term target
- Less effective for promotion of technology innovation in comparison to intensity target
- Cost-effectiveness is rather relative

  coverage, initial allocation (only once), PRIMES model, renewable energy
- Comparison with tax