Japanese Domestic Policy & Cap and Trade

Mitsutsune Yamaguchi
The University of Tokyo
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

- CO2 emissions = \( \frac{\text{CO2 emissions}}{\text{GDP}} \times \text{GDP} \)
- \( \Delta \text{CO2/CO2} \) = \( \frac{\Delta (\text{CO2 emissions}/\text{GDP})}{\text{CO2 emissions}/\text{GDP}} + \frac{\Delta \text{GDP}}{\text{GDP}} \)
  = Technology improvement ratio + GDP growth ratio

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<tr>
<th>To achieve 50% reduction</th>
<th>Tech. imp. ratio (%)</th>
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<tbody>
<tr>
<td>GDP loss (%)</td>
<td></td>
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<tr>
<td>0</td>
<td>3.856</td>
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<tr>
<td>10</td>
<td>3.681</td>
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<td>20</td>
<td>3.485</td>
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<td>50</td>
<td>2.701</td>
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<td>80</td>
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<table>
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<th>Tech. imp. ratio of 1.227%</th>
<th>CO2 reduction (%)</th>
<th>GDP loss (%)</th>
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<tbody>
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<td>0</td>
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<td>75.226</td>
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Average annual technology improvement ratio since 1970 is 1.227%.
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


• “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.”

- “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