

April 4, 2008

Comments on Ms. Eileen Claussen's presentation

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Points at issue on US climate bills

- **Cost (GDP loss)** by EPA analysis March 14 for L/W and January 15 for B/S
L/W bill, **0.9-3.8%** in 2030 and **2.4-6.9%** in 2050
B/S bill with price cap, **0.5-1.4%** in 2030 and **0.9-2.9%** in 2050
(CRA Int'l, present value: B\$7,440 for L/W and B\$1,760 for B/S)
- **Initial Allocation**
Auction vs. Grandfathering
Initial Allocation among manufacturing sectors
- **Trade Measures and GATT/WTO**
EU's retreat from original idea

Ultimate Objective

- Stabilization of greenhouse gas concentrations in the atmosphere at **a level that would prevent dangerous anthropogenic interference** with the climate system (Art. 2)
- Such a 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.

How IPCC AR4 describes?

- The criterion that relates to enabling economic development to proceed in a sustainable manner is a double-edged sword.
- Projected anthropogenic climate change appears likely to adversely affect sustainable development, with adverse effects tending to increase with higher levels of climate change and GHG concentrations ---.
- Conversely, costly mitigation measures could have adverse effects on economic development. This dilemma facing policymakers results in (a varying degree of) tension that is manifested in the debate over the scale of the interventions and the balance to be adopted between climate policy (mitigation and adaptation) and economic development.

Halving emissions in 2050, What for?

	2000 emission (MtCO ₂)	2050 BAU		Halving in 2050: Case 1 (Zero emissions for D'ed Cs)			Halving in 2050: Case 2 (80% reduction for D'ed Cs)		
		emission (MtCO ₂)	increase (%)	emission (MtCO ₂)	Compar ison to 2000(%)	Compari son to BAU(%)	emission (MtCO ₂)	Compar ison to 2000(%)	Compar ison to BAU(%)
	A	B	B/A	C	C/A	C/B	D	D/A	D/B
D'ed Cs	13507	17391	128.8	0	—	—	2701	—80.0	—84.5
D'ing Cs	9151	30928	348.9	11329	+23.8	—63.4	8628	—5.7	—72.1
Total	22658	48319	213.3	11329	—50.0	—76.6	11329	—50.0	—76.6

BAU emissions in 2050 are based on DNE21+ model of RITE

Lieberman/Warner, 71% reduction from 2005 levels by 2050

Bingaman/Specter, 10% reduction from 2000 levels by 2050 (EPA analysis)

USCAP, 20 – 40% of current levels by 2050

US bills have no linkage to 50% global reduction nor 2 degree target EU contends.

I agree

to the following US position

- Commitments for **all** major emitters
 - Different types
 - Different levels of stringency
- Multi-Track Framework
 - Flexible and integrated commitments
 - Sectoral Approaches: Different commitments for different industries
 - Verifiable

Pocantico Dialogue Nov. 2005

Basically same as the followings

- **Engage major economies**
- **Provide flexibility**
- **Couple near-term action with a long-term focus**
- **Integrate climate and development**
- **Address adaptation**
- **Be viewed as fair**

How effective are pledges (case 1)

	Assumed Pledges
Japan	30% improvement of energy efficiency by 2030 (base year 2005)
EU 27	20% reduction in 2020 (base year 1990) then linearly 60% in 2050
USA	20% reduction of gasoline consumption by 2017, 30% improvement of energy efficiency by 2015 (b.y. 2003) then linearly around 50% in 2050
APEC	25% improvement of energy efficiency by 2030 (base year 2005)
China	Same as above
India	Same as above
S. Africa, Brazil	Same as above

APEC: ASEAN 7, Japan, China, USA, Russia etc. (20 countries)

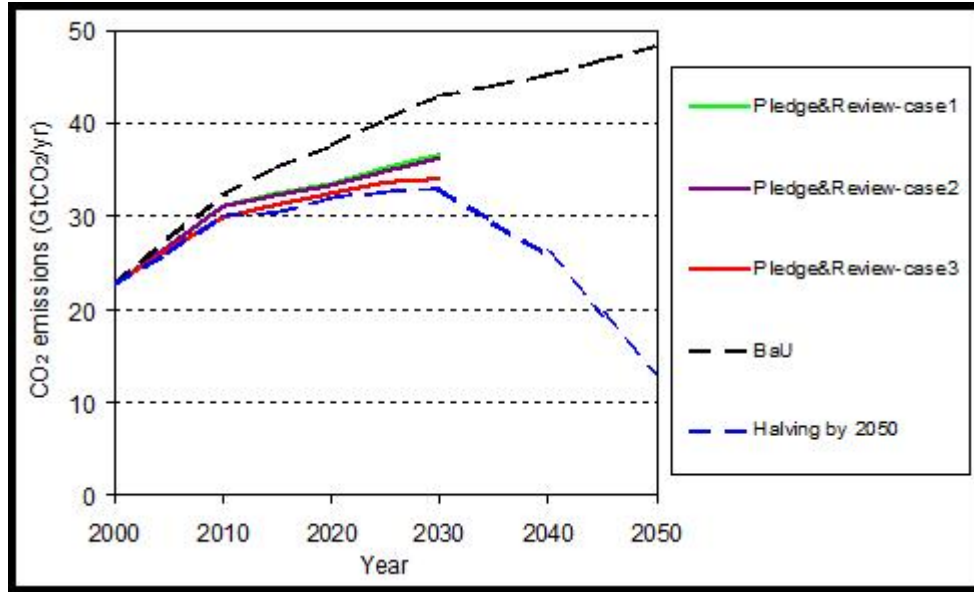
Global Reduction 4.0 Gt-CO₂ in 2020,
6.0 Gt-CO₂ in 2030

How effective are pledges (case 3)

	Assumed Pledges
Japan	MAC is same as EU's pledge, also subject to APEC's pledge
EU 27	20% reduction in 2020 (base year 1990) then linearly 60% in 2050
USA	20% reduction of gasoline consumption by 2017, 30% improvement of energy efficiency by 2015 (b.y. 2003) then linearly around 50% in 2050
APEC	30% improvement of energy efficiency by 2020 (base year 2005) 40% by 2030 (same as above)
China	20% improvement of energy efficiency by 2010 (base year 2005) 40% by 2020 (same as above) 60% by 2030 (same as above)
India	30% improvement of energy efficiency by 2020 (base year 2005) 50% by 2030 (same as above)
S. Africa, Brazil	30% improvement of energy efficiency by 2020 (base year 2005) 40% by 2030 (same as above)

Global Reduction 5.2 Gt-CO₂ in 2020,
8.6 Gt-CO₂ in 2030

Reductions and costs



Reduction

Source: Dr. K. Akimoto, RITE

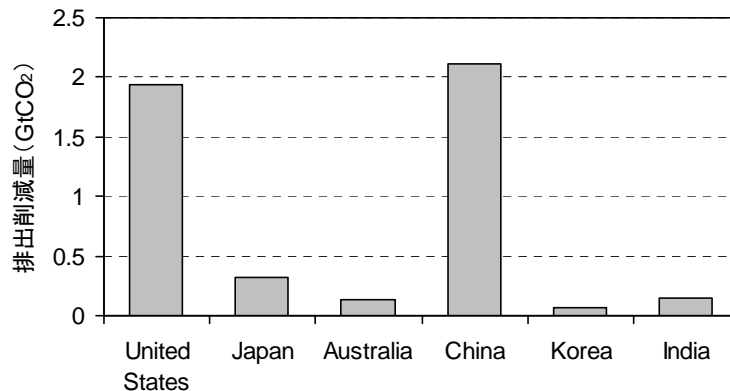
	Case 1		Case 2		Case 3	
	2020	2030	2020	2030	2020	2030
Japan	3.0	3.0	9.5	14.1	23.9	25.3
USA	34.1	64.5	34.4	64.9	34.6	65.3
EU27	18.0	44.5	18.2	44.6	18.3	44.5
China	-0.9	-2.0	-0.5	-1.6	3.4	-2.7
India	-4.6	-6.5	-6.4	-8.2	-6.7	21.5

Total Cost: B\$

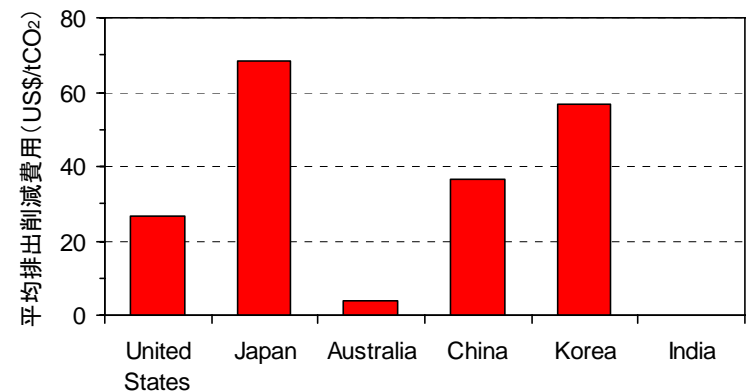
Sectoral Benchmark Approach

Effectiveness and cost

Reduction potentials in AP6 countries in 2020



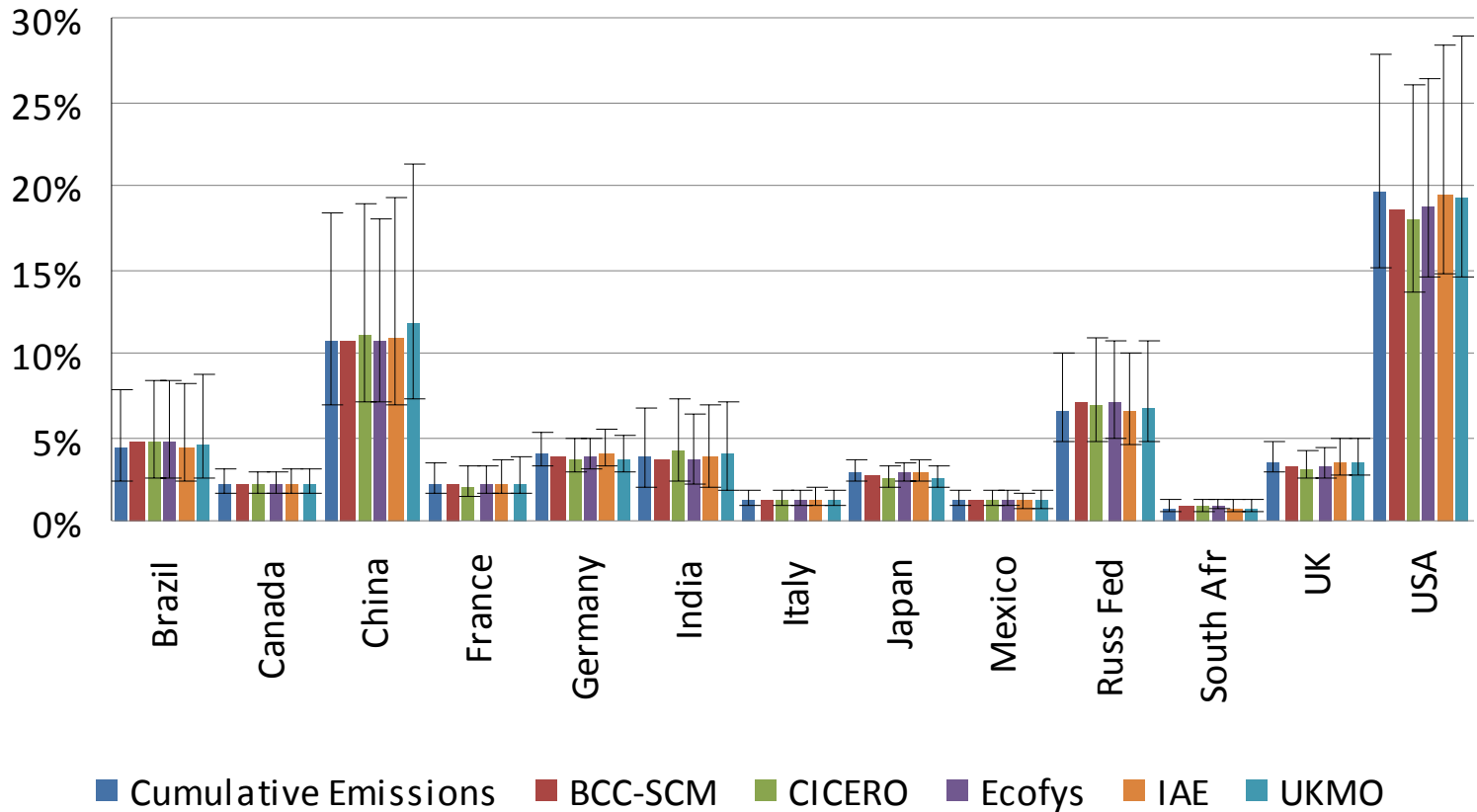
Average cost in AP6 countries in 2020



Based on the assumption that Japanese energy efficiency will be improved 5% more and most Annex 1 countries' EE would almost catch up that of Japan. Major developing countries' EE will be around 25% less than that of Japan.

Global reduction
6.3 Gt-CO₂ in 2020
8.8 Gt-CO₂ in 2030

What does Common but differentiated responsibility mean?



http://unfccc.int/methods_and_science/other_methodological_issues/items/4187.php

Technology is the key

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

- $\Delta \text{CO2}/\text{CO2}$

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

= Technology improvement ratio + 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 is 1.227%.

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

For Japanese attendants who are interested in US climate bills

- My articles on Nikkei BP Web-site

<http://premium.nikkeibp.co.jp/em/column/yamaguchi>

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- General Analysis

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/09/index.shtml>

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/10/index.shtml>

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/11/index.shtml>

- On Lieberman/Warner Bill

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/19/index.shtml>

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/20/index.shtml>

- On MIT economic analysis of US bills

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/20/index.shtml>

<http://premium.nikkeibp.co.jp/em/column/yamaguchi/20/index.shtml>

Next column will appear on Monday, April 14