WWF for a living planet®

“Roadmap to Low-Carbon World”
Group 3: Enabling Low Carbon Societies: Investment

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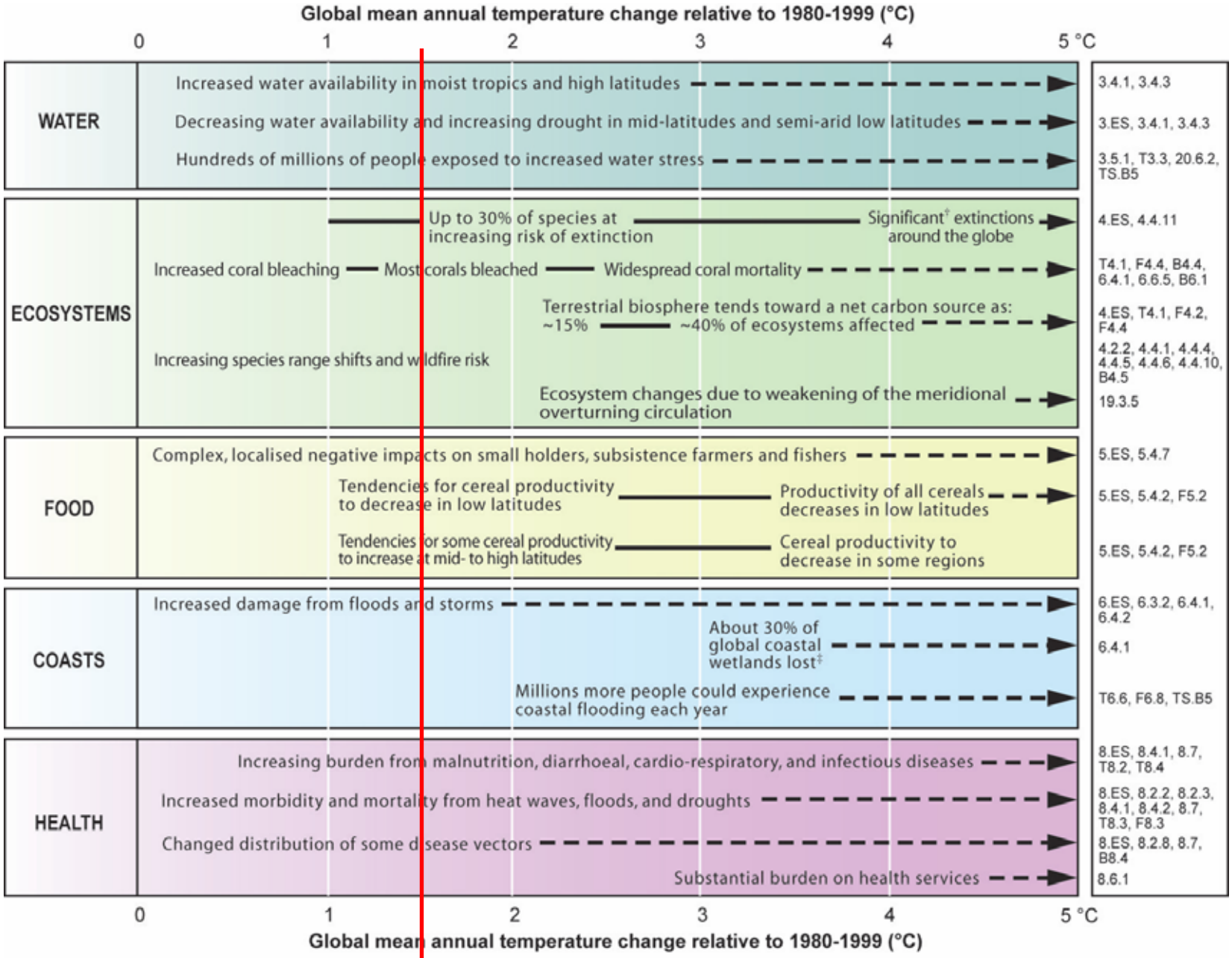
What the IPCC 4th AR Indicated

- WGI showed the temperature increase in the past 100 years was 0.78 degree C, and will increase by 0.2 degrees C per 10 years till 2030. ➡ It is inevitable to see an increase of 1.14 degrees C by 2030.
- WGII showed the extent of impacts according to temperature increase. The “below 2 degrees C” threshold is imperative in order to avoid serious impacts from climate change.
- However, WGIII showed that it is still possible to avoid the dangerous temperature change by peaking the emissions by 2015 and make a deep declining curve to a 50-85% reduction from 2000 levels by 2050.


Global mean annual temperature change relative to 1980-1999 (°C)
0
1
2
3
4
5 °C
WATER
Increased water availability in moist tropics and high latitudes
Decreasing water availability and increasing drought in mid-latitudes and semi-arid low latitudes
Hundreds of millions of people exposed to increased water stress
3.4.1, 3.4.3
3.ES, 3.4.1, 3.4.3
3.5.1, T3.3, 20.6.2, TS.B5
ECOSYSTEMS
Up to 30% of species at increasing risk of extinction
Significant† extinctions around the globe
Increased coral bleaching
Most corals bleached
Widespread coral mortality
Terrestrial biosphere tends toward a net carbon source as: ~15% ~40% of ecosystems affected
Increasing species range shifts and wildfire risk
Ecosystem changes due to weakening of the meridional overturning circulation
4.ES, 4.4.11
T4.1, F4.4, B4.4, 6.4.1, 6.6.5, B6.1
4.ES, T4.1, F4.2, F4.4
4.2.2, 4.4.1, 4.4.4, 4.4.5, 4.4.6, 4.4.10, B4.5
19.3.5
FOOD
Complex, localised negative impacts on small holders, subsistence farmers and fishers
Tendencies for cereal productivity to decrease in low latitudes
Productivity of all cereals decreases in low latitudes
Tendencies for some cereal productivity to increase at mid- to high latitudes
Cereal productivity to decrease in some regions
5.ES, 5.4.7
5.ES, 5.4.2, F5.2
5.ES, 5.4.2, F5.2
COASTS
Increased damage from floods and storms
About 30% of global coastal wetlands lost‡
Millions more people could experience coastal flooding each year
6.ES, 6.3.2, 6.4.1, 6.4.2
6.4.1
T6.6, F6.8, TS.B5
HEALTH
Increasing burden from malnutrition, diarrhoeal, cardio-respiratory, and infectious diseases
Increased morbidity and mortality from heat waves, floods, and droughts
Changed distribution of some disease vectors
Substantial burden on health services
8.ES, 8.4.1, 8.7, T8.2, T8.4
8.ES, 8.2.2, 8.2.3, 8.4.1, 8.4.2, 8.7, T8.3, F8.3
8.ES, 8.2.8, 8.7, B8.4
8.6.1
0
1
2
3
4
5 °C
Global mean annual temperature change relative to 1980-1999 (°C)
2 degrees C from preindustrialized level
† Significant is defined here as more than 40%.
‡ Based on average rate of sea level rise of 4.2 mm/year from 2000 to 2080.

The Scenario We Need to Implement

Table SPM.5: *Characteristics of post-TAR stabilization scenarios [Table TS 2, 3.10]*[a]

Category	Radiative forcing (W/m^2)	CO_2 concentration[c] (ppm)	CO_2-eq concentration[c] (ppm)	Global mean temperature increase above pre-industrial at equilibrium, using "best estimate" climate sensitivity[b], [c] (°C)	Peaking year for CO_2 emissions[d]	Change in global CO_2 emissions in 2050 (% of 2000 emissions)[d]	No. of assessed scenarios
I	2.5-3.0	350-400	445-490	2.0-2.4	2000-2015	-85 to -50	6
II	3.0-3.5	400-440	490-535	2.4-2.8	2000-2020	-60 to -30	18
III	3.5-4.0	440-485	535-590	2.8-3.2	2010-2030	-30 to +5	21
IV	4.0-5.0	485-570	590-710	3.2-4.0	2020-2060	+10 to +60	118
V	5.0-6.0	570-660	710-855	4.0-4.9	2050-2080	+25 to +85	9
VI	6.0-7.5	660-790	855-1130	4.9-6.1	2060-2090	+90 to +140	5
						Total	177

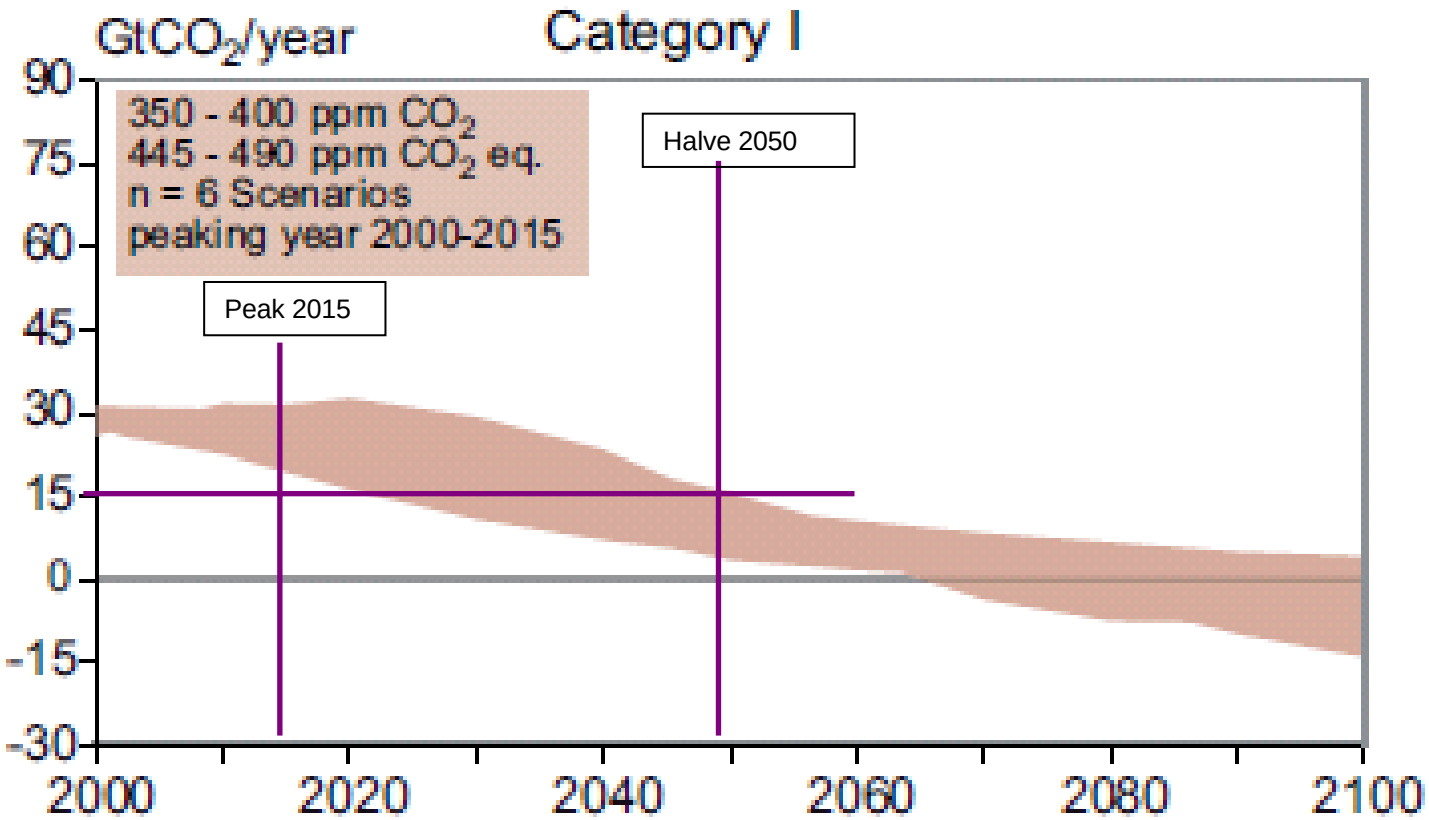
a) The understanding of the climate system response to radiative forcing as well as feedbacks is assessed in detail in the AR4 WGI Report. Feedbacks between the carbon cycle and climate change affect the required mitigation for a particular stabilization level of atmospheric carbon dioxide concentration. These feedbacks are expected to increase the fraction of anthropogenic emissions that remains in the atmosphere as the climate system warms. Therefore, the emission reductions to meet a particular stabilization level reported in the mitigation studies assessed here might be underestimated.

b) The best estimate of climate sensitivity is 3°C [WG 1 SPM].

c) Note that global mean temperature at equilibrium is different from expected global mean temperature at the time of stabilization of GHG concentrations due to the inertia of the climate system. For the majority of scenarios assessed, stabilisation of GHG concentrations occurs between 2100 and 2150.

d) Ranges correspond to the 15th to 85th percentile of the post-TAR scenario distribution. CO_2 emissions are shown so multi-gas scenarios can be compared with CO_2-only scenarios.

The Scenario We Need to Implement







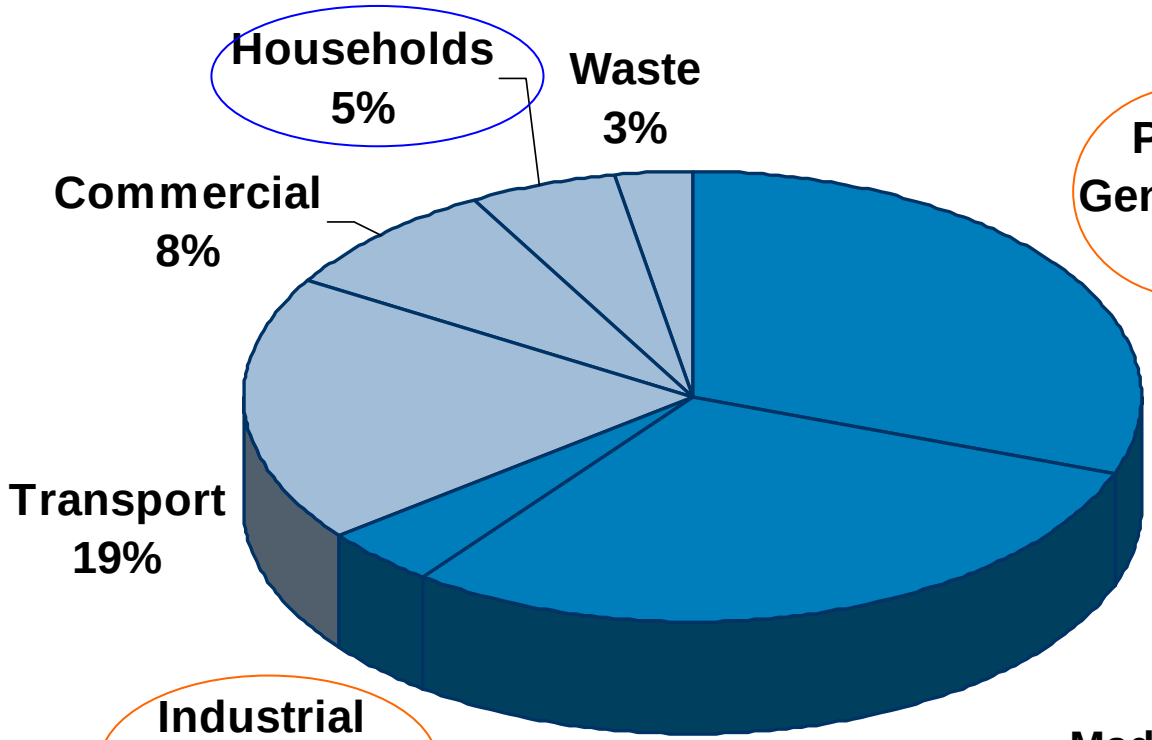

How to Make Deep Cuts Happen

- Kyoto Protocol is only a first step, but an important step forward
- Need to start taking drastic steps NOW (during the 1st Commitment Period), to enable deeper emissions cuts that will be essential after 2012 when Kyoto Protocol is over.
- Most important factor is to **put a price on carbon emission**.
- The cost of GHG emissions should be implanted into every sector economy-wide, as an economic measure, such as carbon tax, or cap&trade emissions trading system.
- In this way, people will start to think seriously how to avoid it, and will promote innovative technology to be dispersed widely in the society.





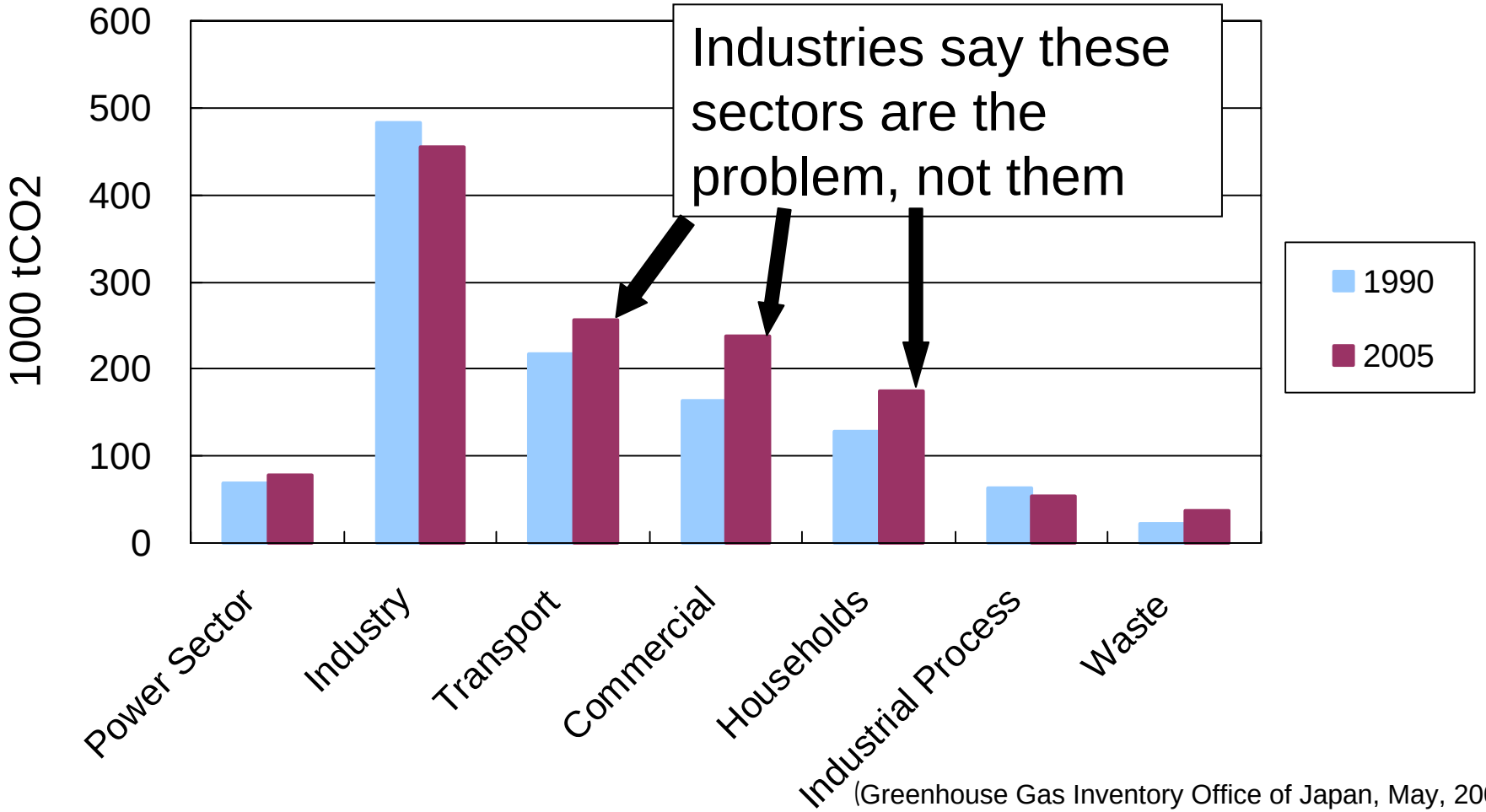

Where does Japanese CO2 emit from? (Direct Emissions for 2005)



Total of the Blue part is 65%

Made from Greenhouse Gas Inventory Office, May 29, 2007

Indirect Emissions Sources
(compared to 1990)



(Greenhouse Gas Inventory Office of Japan, May, 2007)

Deeper Cuts Should Firstly Be Made in the Large Emitting Sectors

- WWF proposes a Cap&Trade Domestic Emissions Trading System as the most cost effective measure to enable deeper cuts from the big emitting sectors, power & industry.
- The system will be one tool to accelerate social structural changes towards a Low Carbon Society
  - Such changes will be the driver to develop new innovative technologies, expand the use of existing best practices at a lower cost, and improve the efficiency of the society as a whole.

Released WWF Proposal, “Emissions Trading Scheme For Decarbonizing Japan” (January 24, 2007)

Published it into a book (October, 2007) ⇒






WWF's "Emissions Trading Scheme For Decarbonizing Japan"①

- GHG coverage: CO2 by Direct Emissions in a Downstream type (Power generation, industry use, industrial processes)
- Cap: 639 million tons CO2　　Coverage: 64%
- Allocation:Grandfathering + 5% auction + 5% new entrants reserve (in the future,benchmarking+auctioning)
- Grandfathering to each sector will be based on average of base year 2000-2004
- First commitment period: 2008-2012
- Allocation to each factory will be a bottom-up approach based on average of base year, using a Compliance Factor to adjust the total amount of allocation






WWF's "Emissions Trading Scheme For Decarbonizing Japan"②

- Policy Mix ideas for sectors not directly covered by ETS

1) Tax

- **Tax on the upstream, with 75% exemption for those covered by ETS**
- **At the downstream, the tax will be paid indirectly through increased price shift**

2) Baseline & Credit Trading System

・ **Sectors, such as commercial, residential, transport and other small business will do emission reduction projects and sell the reduction credit to those covered by ETS**

・ **In this case, we propose a "Baseline & Credit Reserve" in the ETS in order to avoid double counting of reduction from electricity and heat**

・**We also propose a Japanese version of the CDM EB to ensure a ton is a real ton**






Why Emissions Trading is Essential

1. Guarantees reduction amount by capping large emitters
2. Abatement cost differs according to companies, which enables companies to use this difference to minimize cost by using the trading system
3. Can sell the amount of efforts, but can also buy when necessary, so flexibility is guaranteed

4. Can reduce risks from impacts of climate change as well as climate policy to be introduced, and the investor value will increase as a reliable company

5. Social/Economical structure will change to realize a low-carbon society






ETS essential from an International perspective

- EU ETS operating since 2005 as a pilot phase, its second phase started 2008, and is already planning for the third phase starting 2013 in order to realize the 20-30% reduction goal by 2020.
- Norway, Canada, Australian States and 10 Eastern States in the USA as well as California and 5 western states, mid-western states are developing a similar system, aiming to link together with EU ETS.
- A global carbon market is being discussed at the International Carbon Action Partnership (ICAP) established October, 2007.
- At the US Senate level, a Lieberman-Warner Climate Security Act was voted out to the Senate floor in the end of 2007.






Growing Global Carbon Market

ICAP、(October 29, 2007)

EU ETS

Phase 2

(27countries)

?

WCI

MGA

Mid-western GHG Reduction Accord

RGGI (10 eastern states)

Liebermann-Warner Bill passed to Senate

Australian Federal Level discussion, Change of Administration in November, 2007, ratified Kyoto Protocol

NSW GGAS






Japan's National Interest is being threatened, as we are about to be left behind!

- Japan's major climate policy is only based on voluntary scheme.
- No mandatory scheme, no economic measures, or regulation.
- In the Lieberman-Warner bill, there is a provision that requires importers of primary goods from countries that do not have comparable GHG controls to buy and submit special allowances to cover their products' GHG emissions.
- If Japan sticks to just "Voluntary Actions", it may be regarded "not comparable" to the cap&trade to be adopted in the USA.
- It is about time for Japan to really seriously consider these consequences, and about making a low carbon society nationally as well as worldwide.

Thank you very much !

http://www.wwf.or.jp/climate

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