

Japan's implementation plan of the Kyoto Protocol target and a proposal for the future international framework

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Part 1

Japan's implementation plan for the Kyoto Protocol target

Current situation (as of 2005)

GHGs 1,364 MtCO₂ **+8.1%**
Target -6%

< Details of Energy-Origin CO₂ Emissions >

	Emissions (MtCO ₂)	2005/1990 (%)
Industry	466	-3.2
Transport	257	+18.1
Commercial	234	+42.2
Household	175	+37.4
Energy	74.4	+9.7
Total	1206	+13.9

Policies introduced

- **Industry Voluntary Initiative 1997**
<http://www.keidanren.or.jp/english/policy/2005/086.pdf>
- **Top Runner Approach 1998**
- Law concerning the promotion of the measures to cope with Global Warming 1998
- **Re-strengthening of the energy efficiency regulations 2002**
(Expansion of application to additional sectors and medium sized firms)
- **Compulsory RPS rules on “new energy” 2002**
- The basic law on energy policy-making 2002
- **Compulsory reporting scheme of CO2 emissions 2005**
- **Re-strengthening of the energy efficiency regulations 2005**
(Expansion of application to transport sector etc.)

On going discussions on strengthening the regulations

- Revision of Top Runner Approach
- Measures targeted at commercial and household sectors (refer to the next)

What should Japan do, if --- ?

- To do our best. But if not attainable;
 - 1) Compliance on paper (Purchase hot-air from, say, Russia)
 - 2) Non-Compliance
- The latter is my choice, provided that energy efficiency in major industries should be the best in the world.
- Reason: Unfair initial allocation

Part 2

A proposal for the future international framework

Various proposals and their pros & cons

	Outline	Advantages	Disadvantages
Quantitative approaches (cap and trade)	Maintaining the Kyoto Protocol system. A country must comply with the absolute quantity of emissions fixed for each country, while being allowed to use emissions trading to reduce costs. A typical scheme to value results over efforts.	<ul style="list-style-type: none"> • Ensure environmental effectiveness • Attain a given target at the minimum cost (cost-effectiveness) • Domestic policies to the discretion of each country 	<ul style="list-style-type: none"> • Difficult to ensure the equity and transparency in initial allocation • Impossible to predict abatement costs • Fund transferred from an allowance buyer to a seller • Hot air inevitable
Price approach (Internationally harmonized carbon tax)	To achieve targets based on the price signals rather than quantitative targets. Typical one is a carbon tax. Reduce emissions through market mechanisms by setting a universal carbon tax (or coordinated/harmonized carbon tax)	<ul style="list-style-type: none"> • Initial target attainable at the minimum cost (cost-effectiveness) • Costs are predictable • No cross-border fund transfer • Avoid excessive cost burden • No hot air 	<ul style="list-style-type: none"> • Uncertainties in environmental effectiveness • Difficult to agree on a single unified carbon tax • Each nation has a barrier for introducing a tax • Difficult to agree on an appropriate tax rate • Differences in the national priorities of climate change measures
Hybrid policy (cap and trade with safety valve)	Each country has an obligation to achieve quantitative reduction target, but, once the abatement cost equals the ceiling price, each country can issue unlimited emission allowances at the ceiling price.	<ul style="list-style-type: none"> • Reduce cost burden by the issuance of additional emission permits • Maintain the advantages of price approach 	<ul style="list-style-type: none"> • Presumed the introduction of emissions trading in each member country as its national policy • Conflict with the sovereign right of each nation. • Difficult to set a universal ceiling price • Theoretical drawbacks if initial allocation is set at the volume larger than the optimal volume.
Intensity Targets	A method to set efficiency improvement targets for greenhouse gas emissions or energy use per GDP or production. Several alternatives such as benchmark method, efficiency improved over BAU, and others.	<ul style="list-style-type: none"> • A framework to value efforts • Allow potentials for economic growth • No hot air • To enable to invite developing countries' participation 	<ul style="list-style-type: none"> • Uncertainties in environmental effectiveness • Lack of efficiency • Difficult to agree on targets or setting of indexes
Policies and measures	Each country promises to introduce own policies and measures for climate change mitigation. Possible to harmonize policies through international negotiation. A method to value actions	<ul style="list-style-type: none"> • Higher feasibility • Each country can adopt policies conforming to the national situation • Precedents such as GATT 	<ul style="list-style-type: none"> • Uncertainties in environmental effectiveness • Lack of efficiency • Cannot be a main stream in climate change measures • Needs an international monitoring system

My proposal (1)

- Pledge (with review) and review
No negotiation
- Pledge only for developing countries

Criteria: Global Participations

Environmental effectiveness is the same for

- a) global reduction of 8% from BAU and
- b) 30% reduction from BAU in EU and Japan,
In this case, issue of competitiveness matters

My Proposal (2)

In parallel with the proposal

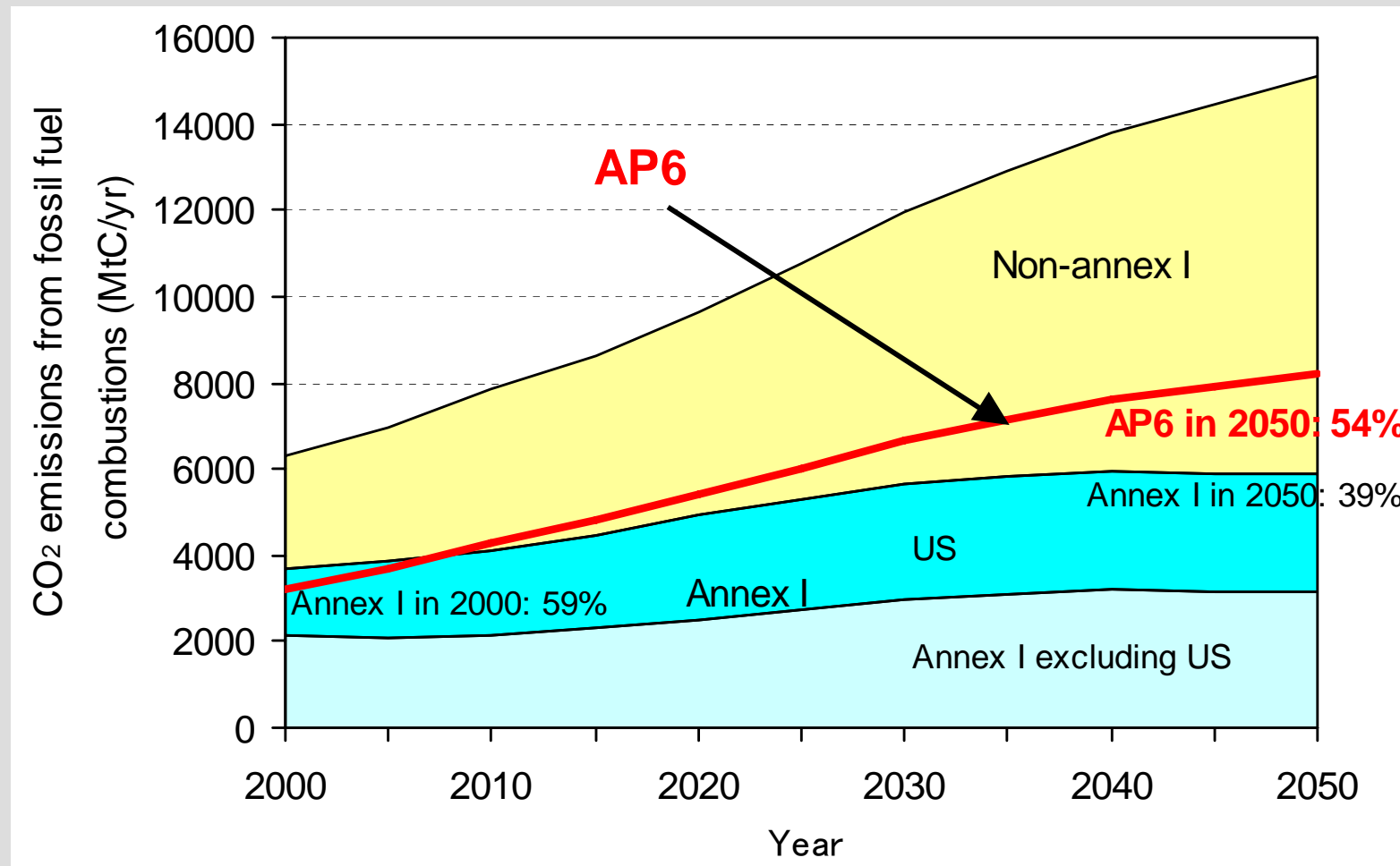
- Sector based benchmarking
- International technology cooperation
- Example; AP6 and technology cooperation/diffusion

Part 3

Effectiveness of AP6

(Example of Technology Cooperation
and Diffusion)

Outlook of CO₂ Emissions in AP6



Source: CO₂ emissions from the results for the reference case (Business as Usual case) by using the DNE21+ model developed by RITE; Based on a presentation for the 6th committee meeting of Special Committee for the Future Frameworks in the Industrial Structure Council, Environmental Committee, Global Environment Subcommittee (June, 2004)

Comparison of 3 scenarios

1) Keeping Kyoto until 2030

Same target as Kyoto and US is outside the protocol

2) Stabilization scenario at 550 ppm (subject to IPCC WG1 scenario)

3) AP6

6 countries, 3 sectors (power generation, steel, cement)

Carbon Intensity improvements, ex. Power generation

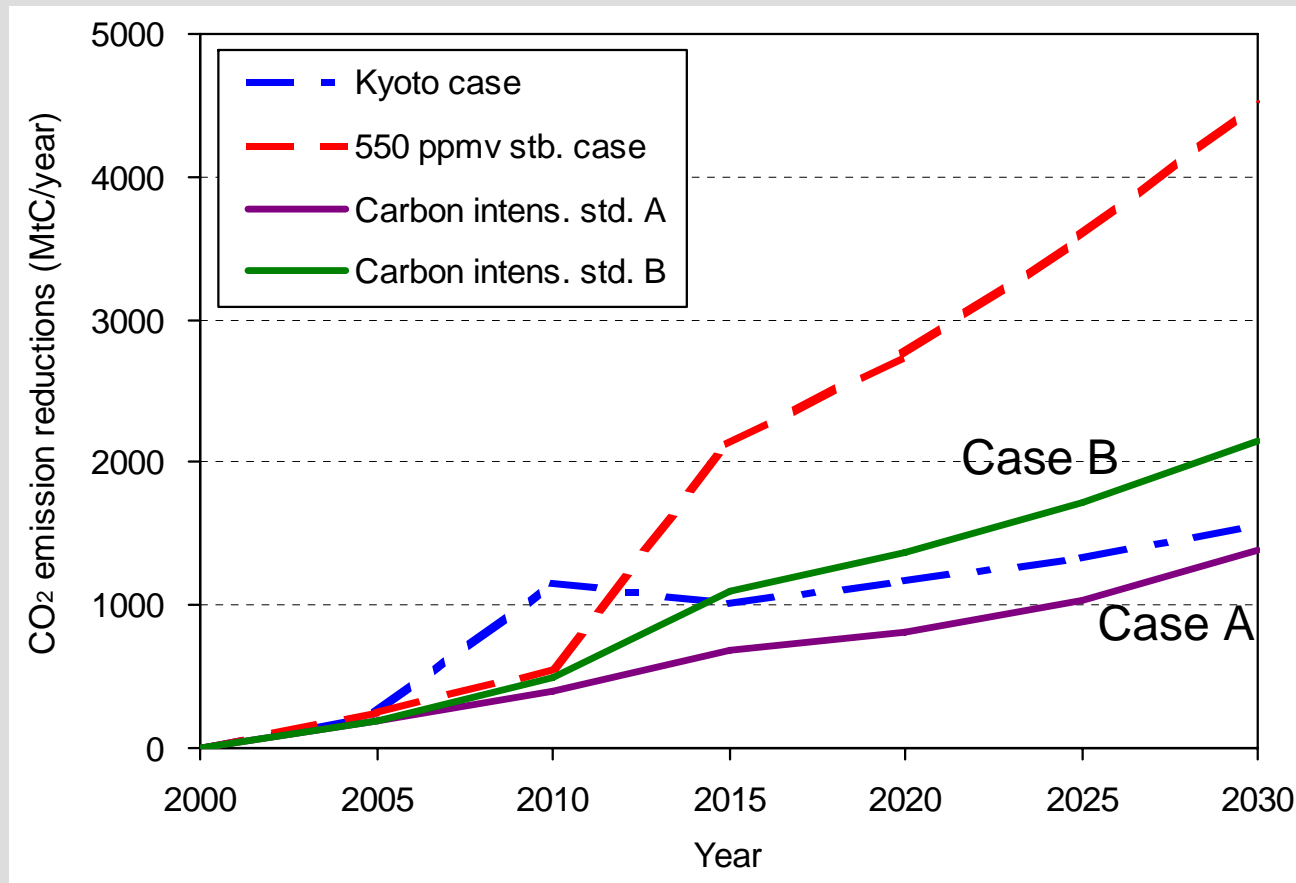
Case A:

80% emissions in comparison to Japan (fossil fuel)

Case B: more challenging

80% emissions in comparison to Japan (all plants)

Global CO₂ Emission Reductions

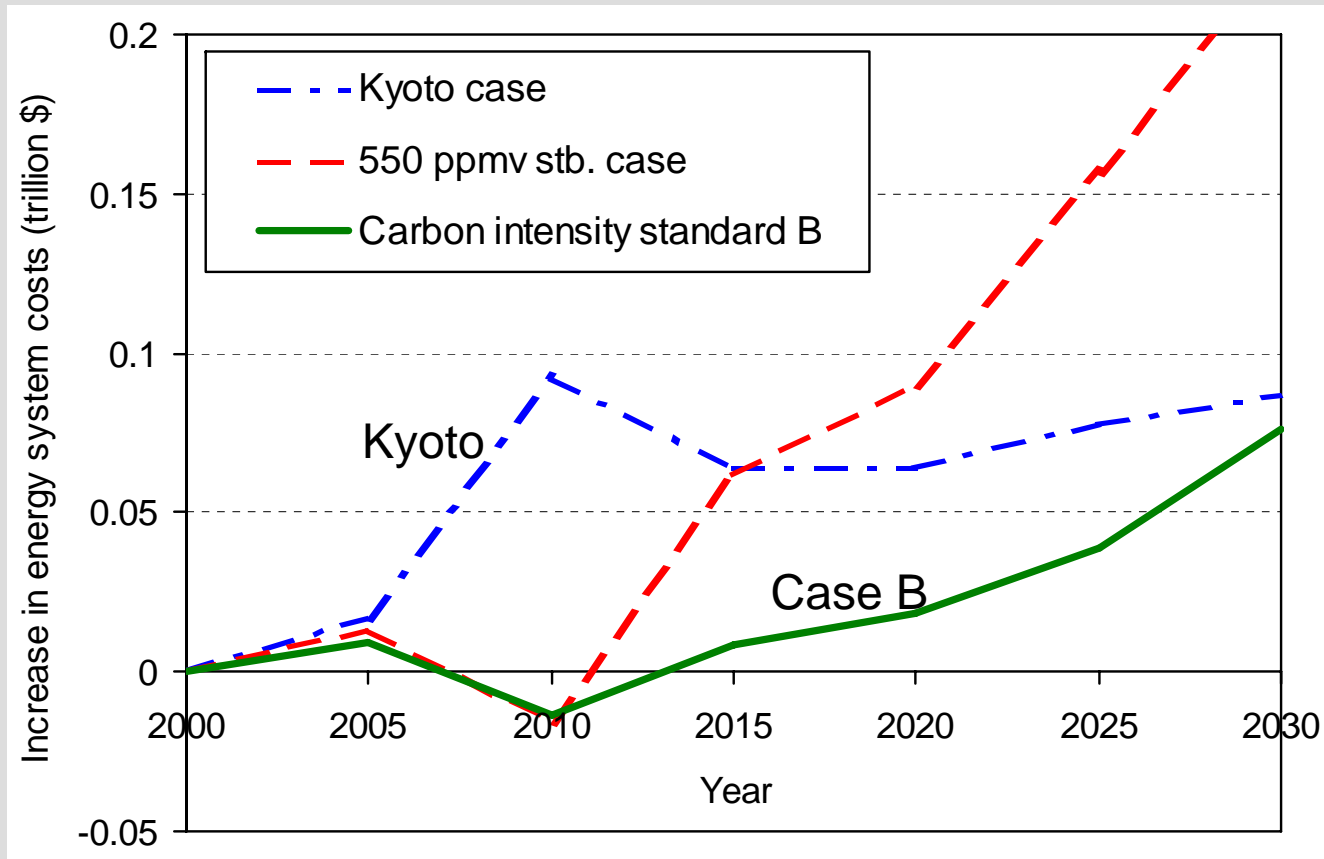


Note: The CO₂ emission reduction are shown relative to those in Reference Case (BAU).

The assumed targets for the 3 sectors in the 6 APP participating countries will have emission reduction effects almost same as KP.¹³

Source: Dr. K. Akimoto (RITE)

At less costs than “Kyoto”



Note: The increases in energy system costs are shown relative to those in Reference Case (BAU).

AP6 way is much more cost effective to attain same reduction.

Source: Dr. Keigo Akimoto (RITE)

AP6 (technology cooperation and diffusion) proved to be environmentally effective and efficient.

Thank you for your attention!