February 9, 2004

Japanese Strategy on Climate Change

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Structure

- Japanese Strategies to implement the Kyoto Target (Domestic Issues)
  1) Current Situation
  2) Review of Government Action Plan

- Towards Post Kyoto Regime
  (Global Issues)

Japanese Situation just before Kyoto

- Ministers' meeting in November 1997
- BAU emissions of energy-origin CO2 will exceed 20% compared with the base year

  1,266 Mt-CO2 (1,053 Mt-CO2 in 1990)
- Stabilization of energy-origin CO2 at 1990 level (refer to the next slide)
- All parties concerned, including industries, agreed

CO2 emission stabilization plan toward 2010

	Industry	household/commercial	transportation
Compulsory measures (57.6 Mt-CO2)	strengthening energy efficiency law (11.0 Mt-CO2)	strengthening energy efficiency law (35.6 Mt-CO2)	strengthening energy efficiency law (11.0 Mt-CO2)
Voluntary action plan (41.5 Mt-CO2)	Keidanren voluntary action plan (41.5 Mt-CO2)		
Inducement to Improve energy efficiency (59.8 Mt-CO2)	Measures to improve energy efficiency at SMEs etc. (8.1 Mt-CO2)	Efficiency improvement ar houses & buildings etc. (46.6 Mt-CO2)	Diffusion of clean energy cars etc. (5.1 Mt-CO2)
Indirect measures (24.6 Mt-CO2)			Traffic control etc. (24.6 Mt-CO2)
Drastic change of Life style (23.5 Mt-CO2)		Adjusting temperature of air-conditioning (18.4 Mt-CO2)	Voluntary reduction of car ride etc. (5.1 Mt-CO2)
Total (207 Mt-CO2)	(60.6 Mt-CO2)	(100.6 Mt-CO2)	(45.8 Mt-CO2)

Government Action Plan After Kyoto (original in 1998)

CO2 (energy origin)	± 0.0%
Methane etc.	– 0.5%
Technological Innovation	– 2.0%
HFC, PFC, SF6	+ 2.0%
Sink	– 3.7%
Kyoto Mechanism	– 1.8%
TOTAL	– 6.0%

About nuclear energy

- Government action plan was based on the assumption that 20 nuclear power plants (Additional capacity of 25M kW) will be newly built by 2008. This is expected to reduce 107.9 Mt-CO2).
- Based on unrealistic assumption

Two committee's report in 2001

(Even after introduction of various measures)

- Advisory Committee for Natural Resources and Energy July '01 (METI)

  73.4 Mt (7%) increase of CO2 emission in 2010

  Nuclear power plant construction: 10-13

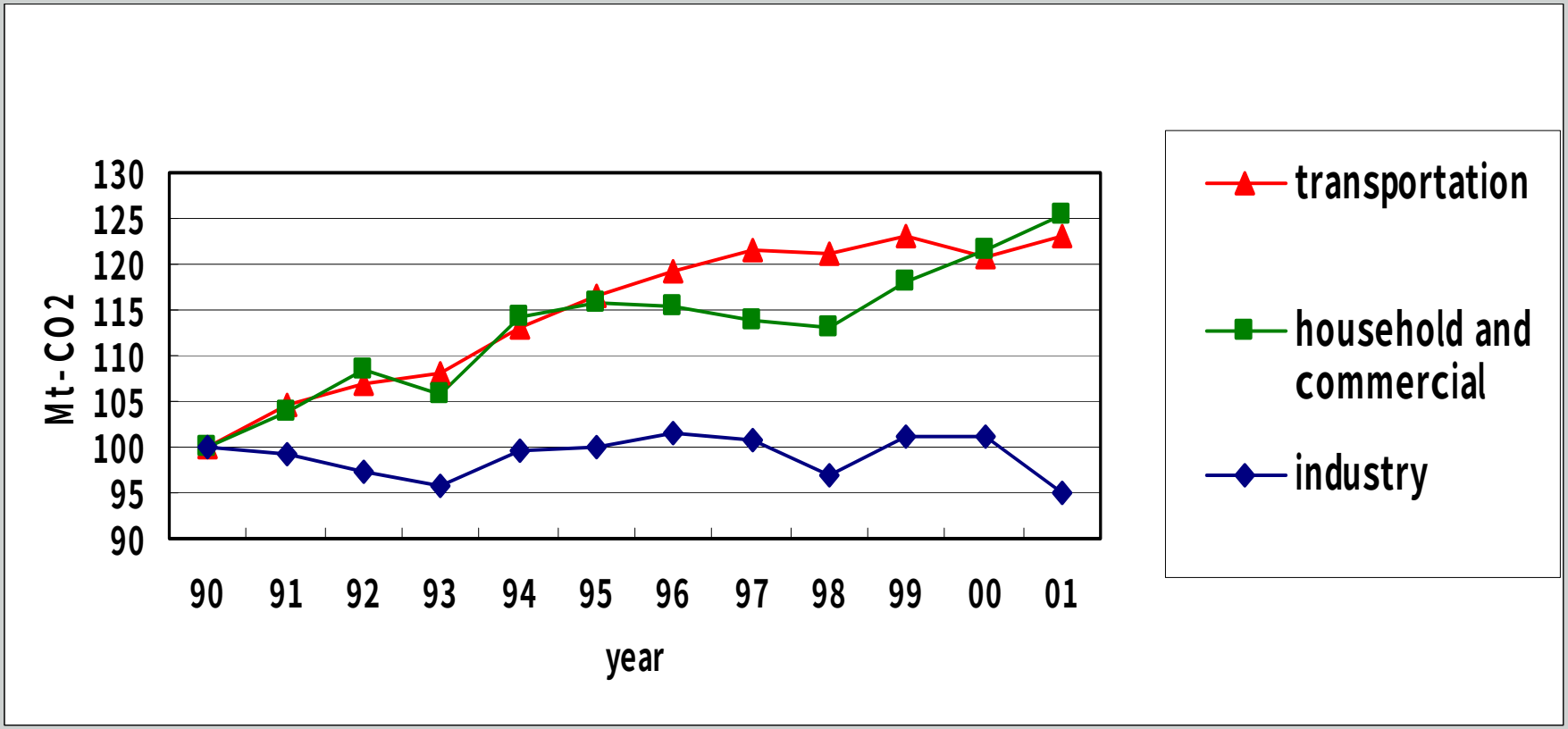
- Central Environmental Council June '01 (EA)

  61.0 & 93 Mt increase (5% for case 1 & 8% for case 2 respectively) of GHG emissions in 2010

  Nuclear power plant 13 (case 1) & 7 (Case 2)

- Additional measures should be introduced

Increase of CO2 emission by sectors



Recommendation of Advisory Committee for Natural Resources & Energy

- To reduce energy-origin CO2 Emissions by 73.4 Mt-CO2 in order to stabilize at 1990 level

1) Further improving energy efficiency
   -22 Mt-CO2 (subsidies, strengthening of efficiency standards)
2) Promoting renewable energy (up to 3%)
   -34 Mt-CO2 (introduction of RPS law)
3) Fuel switching
   -18 Mt-CO2

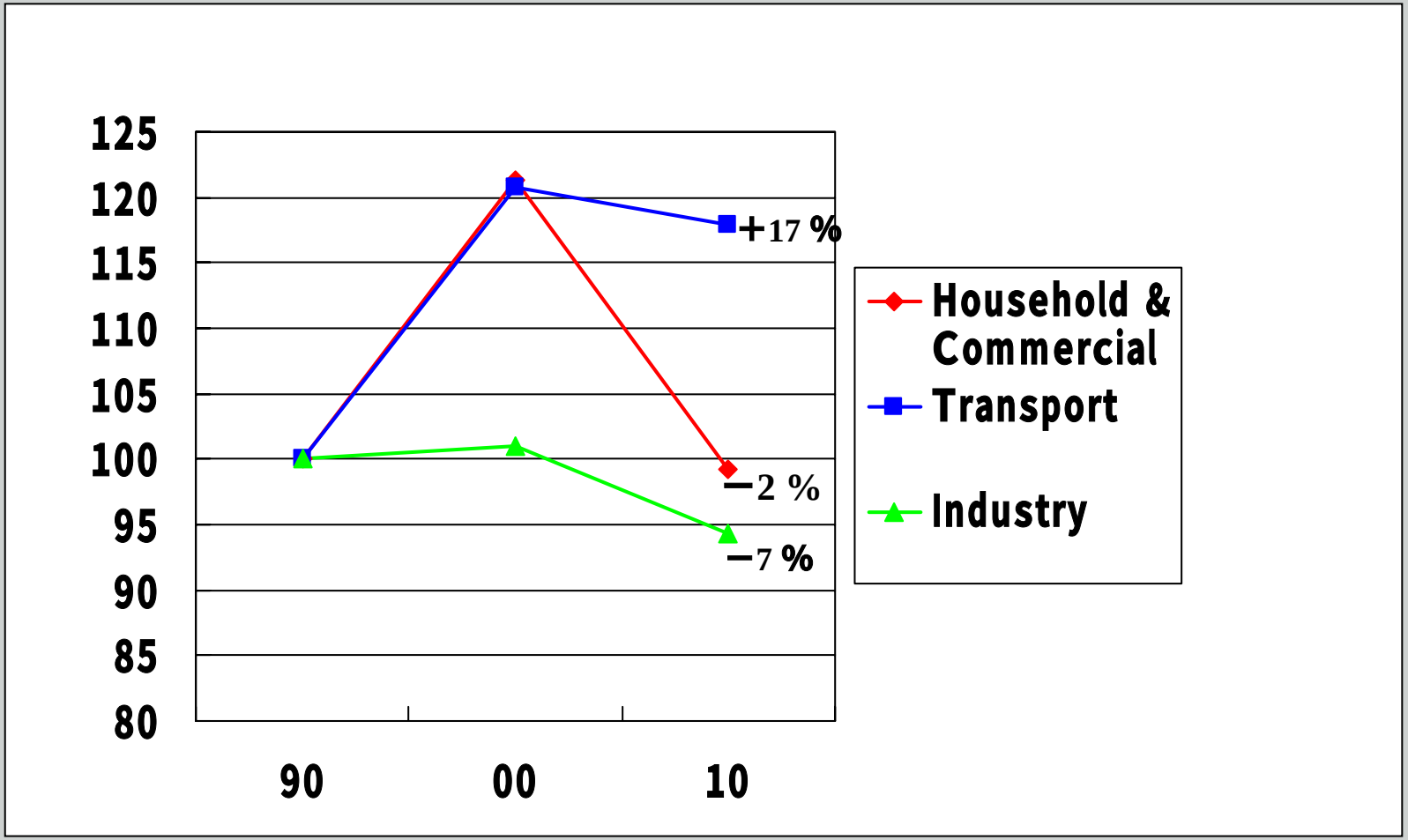
Revised Action Plan

(March 19, 2002)

	Revised	Old
CO2 (energy origin)	± 0.0%	± 0.0%
Other CO2 & Methane etc.	– 0.5%	– 0.5%
Innovative Technology etc.	– 2.0%	– 2.0%
HFC, PFC, SF6	+ 2.0%	+ 2.0%
Sink	– 3.9%	– 3.7%
(Kyoto Mechanism)	– 1.6%	– 1.8%
TOTAL	– 6.0%	– 6.0%

Feasibility of CO2 stabilization

Energy demand side (Actual figures vs. Target)



Basic Principles of Action Plan

- Compatibility of economy and environment
  - Without compromising economic growth
- Step by step
  - Proceed gradually
- Shared responsibility
  - All actors' participation
- International cooperation
  - US participation

What does “step by step” mean?

- 1st period: 2002 – 2004
- 2nd period: 2005 –2007
- 3rd period: 2008 - 2012

Prerequisites of Action Plan

- Annual economic growth 2%
- Construction of nuclear plants as scheduled
- Workable RPS
- Promotion of Fuel Switching
- All measures in DSM be implemented as planned

Year 2004 is very important

(Domestic)

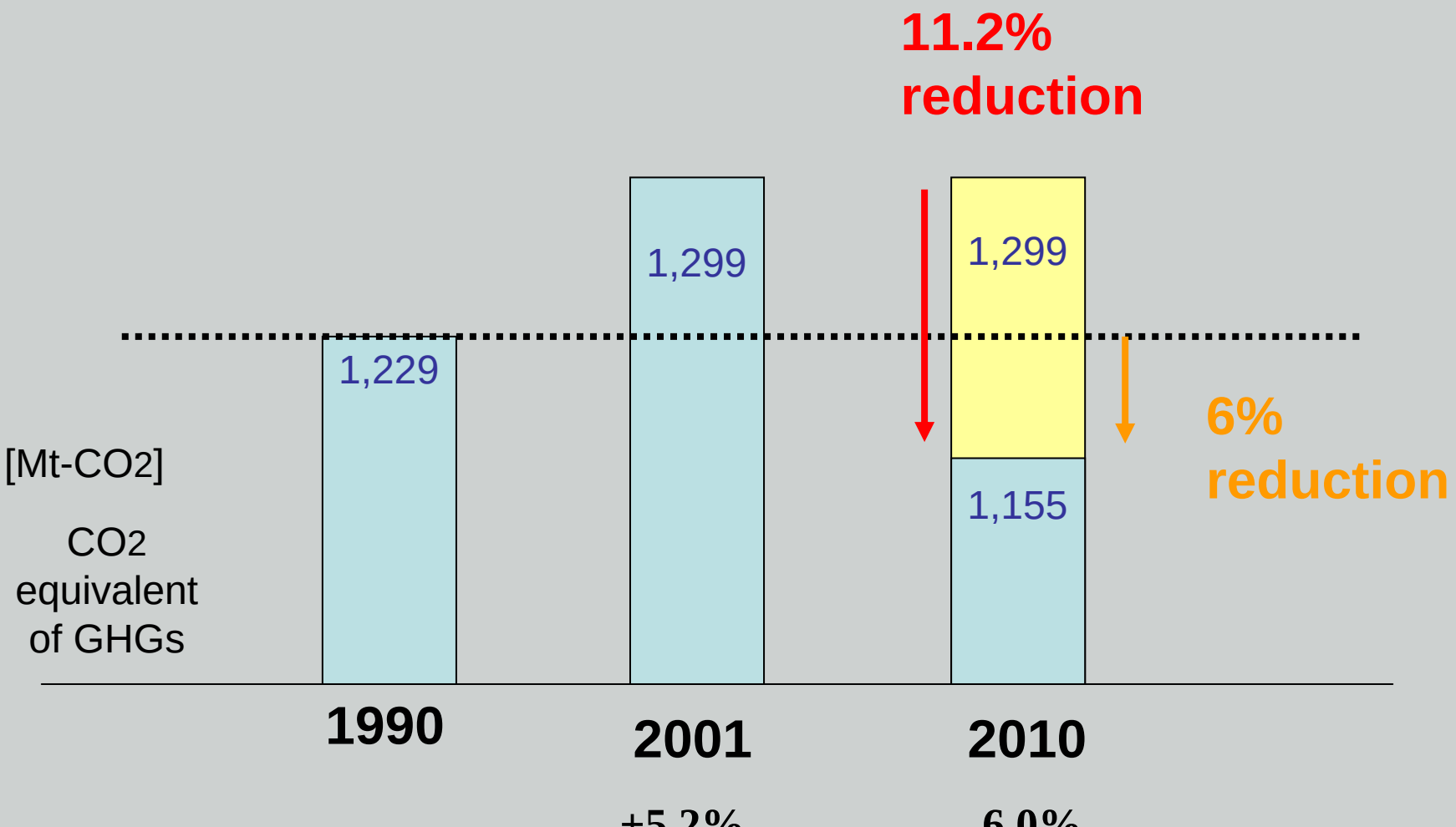
- Review of current strategies
- Then, Revision of Action Plan, if necessary

(International)

- Prepare for international discussion for “Post Kyoto” which will begin next year

- What if Russia is still unclear

Must reduce 11.2% to achieve goal



Two committees started discussion in 2004

METI Global Environmental Subcommittee, Jan. 13, 2004

- Review of Government Action Plan
- Policies and Measures during 2nd step
- Future global framework (Post Kyoto)

  Based on the interim report “Perspectives and Actions to construct a Future Sustainable Framework on Climate Change” July 2003
- Set up an Expert Committee on Future Framework, Jan. 8, 2004

Two committees started discussion in 2004

ME Subcommittee of Central Environmental Council

Jan. 30, 2004

- Review of Government Action Plan
- Policies and Measures during 2nd step
- Future global framework (Post Kyoto)

  Based on the draft interim report “Basic concept on future global cooperation coping with Climate Change” November, 2003
- Decided to set up an Expert Committee on Climate Change Global Strategy, Jan. 30, 2004

Domestic Measures (1)

Measures introduced since adoption of the Kyoto Protocol

- Revision of Law concerning the Rational Use of Energy 1998 revised in 2002
- Law concerning the Promotion of the Measures to cope with Global Warming, 1998 revised in 1999 and 2002
- Law concerning Promotion of the Use of New Energy, 2002
- The Basic Law on Energy Policy, 2002
- CDM, JI (Capacity Building, JCF etc.)

Domestic Measures (2)

- Additional Measures will be introduced, if necessary upon reviewing 1st period outcome
- Followings are several ideas

  Draft Climate Change Tax

  (Committee report by ME in August 2003)

  Yen 3,400-t/c (about $8.8-t/CO2)

  Upstream

  Revenue (about. $9B) to be recycled for subsidies

  Target (CO2 emission in 2010, -2%)

  Further Strengthening of Energy Efficiency

  Introduction of CAFÉ standard?

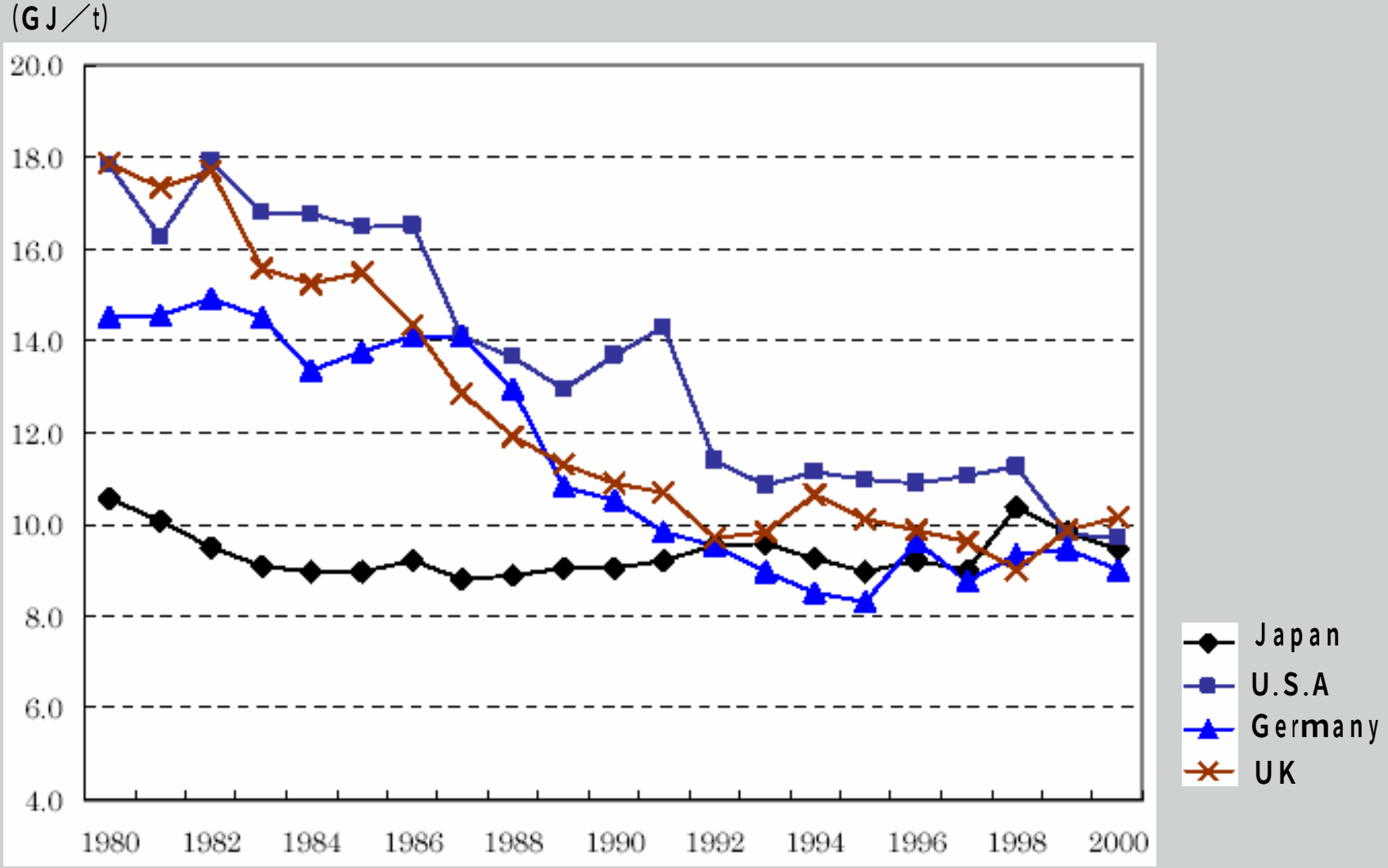
Domestic measures and Marginal Abatement Cost

Median projection cost of several models, t/CO2

	Domestic measures only	Utilizing the Kyoto Protocol
Japan	US$ 90	US$ 19
U.S.A.	US$ 49	
EU	US$ 57	

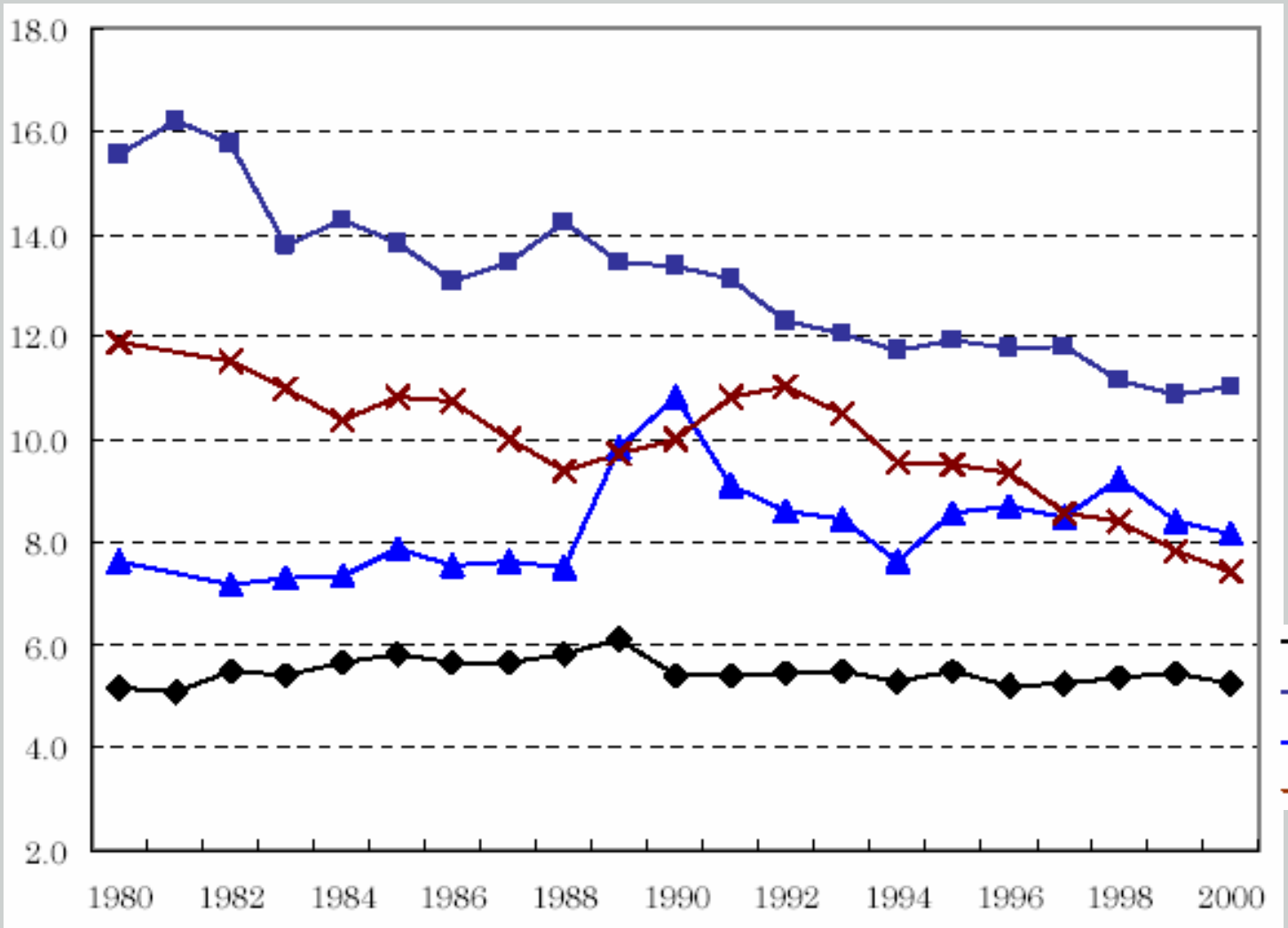
Source: IPCC Third Assessment Report

Energy Consumption / Steel Production (t)



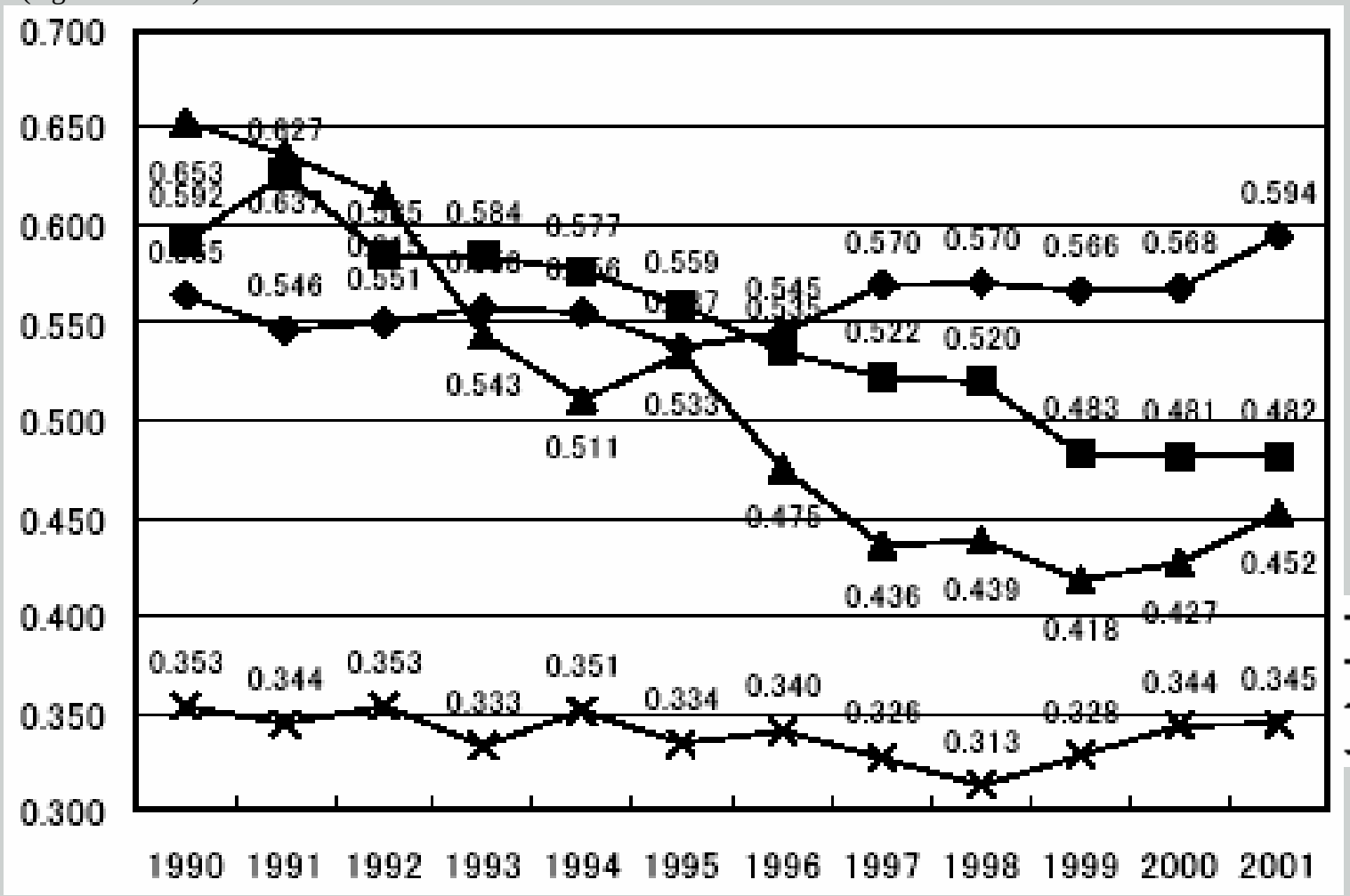
Source: Energy Statistics of OECD Countries (IEA) etc.

Energy Consumption / Cement Production (t)



Source: Energy Statistics of OECD Countries (IEA) etc.

CO2/Power Generation (kWh)
(Average of All Electric Generation)



Source: Energy Statistics of OECD Countries (IEA) etc.

Post Kyoto Regime

Discussion has started

- METI (may have concrete ideas by autumn, 2004)

  Expert Committee on Future Framework

  Based on the interim report “Perspectives and Actions to construct a future sustainable framework on climate change”

- ME

  Expert Committee on Climate Change

  Global Strategy

  Based on the interim report “Basic concept on future global cooperation coping with Climate Change”

Post Kyoto Regime

My personal view

- Basic Concept

  Even though there exists no consensus on future level of GHG concentration, global GHG emissions must be reduced below current level in 100 years in order to stabilize at the lowest realistic scenario GHG concentration, 550 ppm (Refer to the next slide)

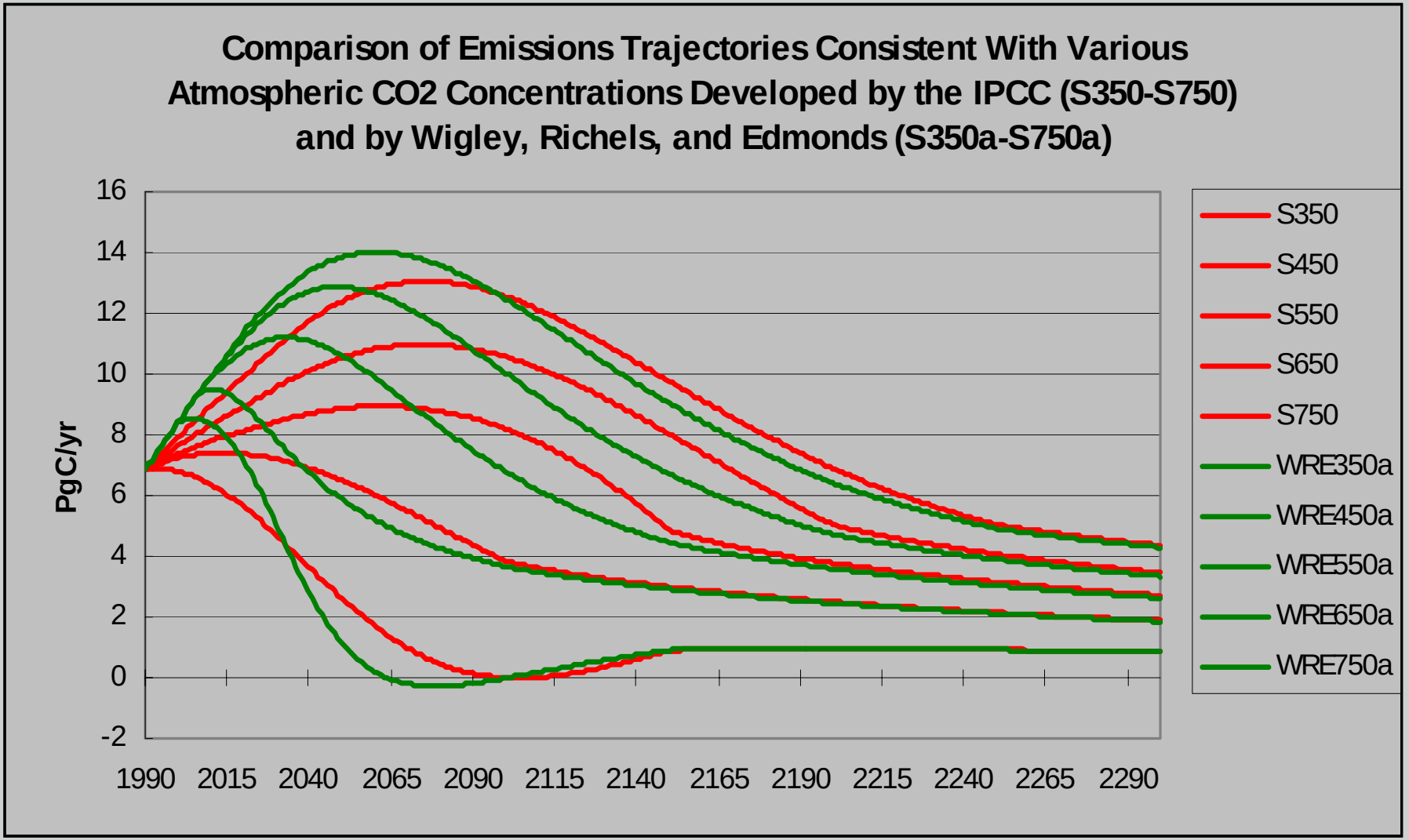
- Japan must implement the Kyoto Target

  Because Japan has ratified the KP, though without no cost/benefit discussion at Japanese Diet (parliament), Japan is obligated to implement the Kyoto Target

- Need Sustainable Framework

Must reduce global emissions below current level

in a long run



Shortcomings of the Kyoto Protocol

- Not global
  - Covers 1/3 of global emission
  - Without US and developing countries' participation
  - Only Japan among top 5 emitters assume obligation
  - Implementation of target means 30% increase of global emissions
- Cost is uncertain as a result of absolute cap
- Initial Allocation has no scientific basis
- Stick for the parties of the protocol

Any possibility of extension?

- USA will never be back to current regime with much stringent cap
- Without US, no participation from major developing countries
- But we have to cope with climate change globally
- New “global” regime is definitely necessary for which US and DCs can join

What kind of regime?

- To begin slowly so that major players can participate
- Should be politically feasible

  Democracies can proceed only as fast as voters will permit

  (Financial Times, Aug. 21. 2000)
- Should be compatible with economy as well as energy security
- Better strong weak agreement than weak strong agreement (Economist Nov. 27, 1997)

Characteristics of Climate Change

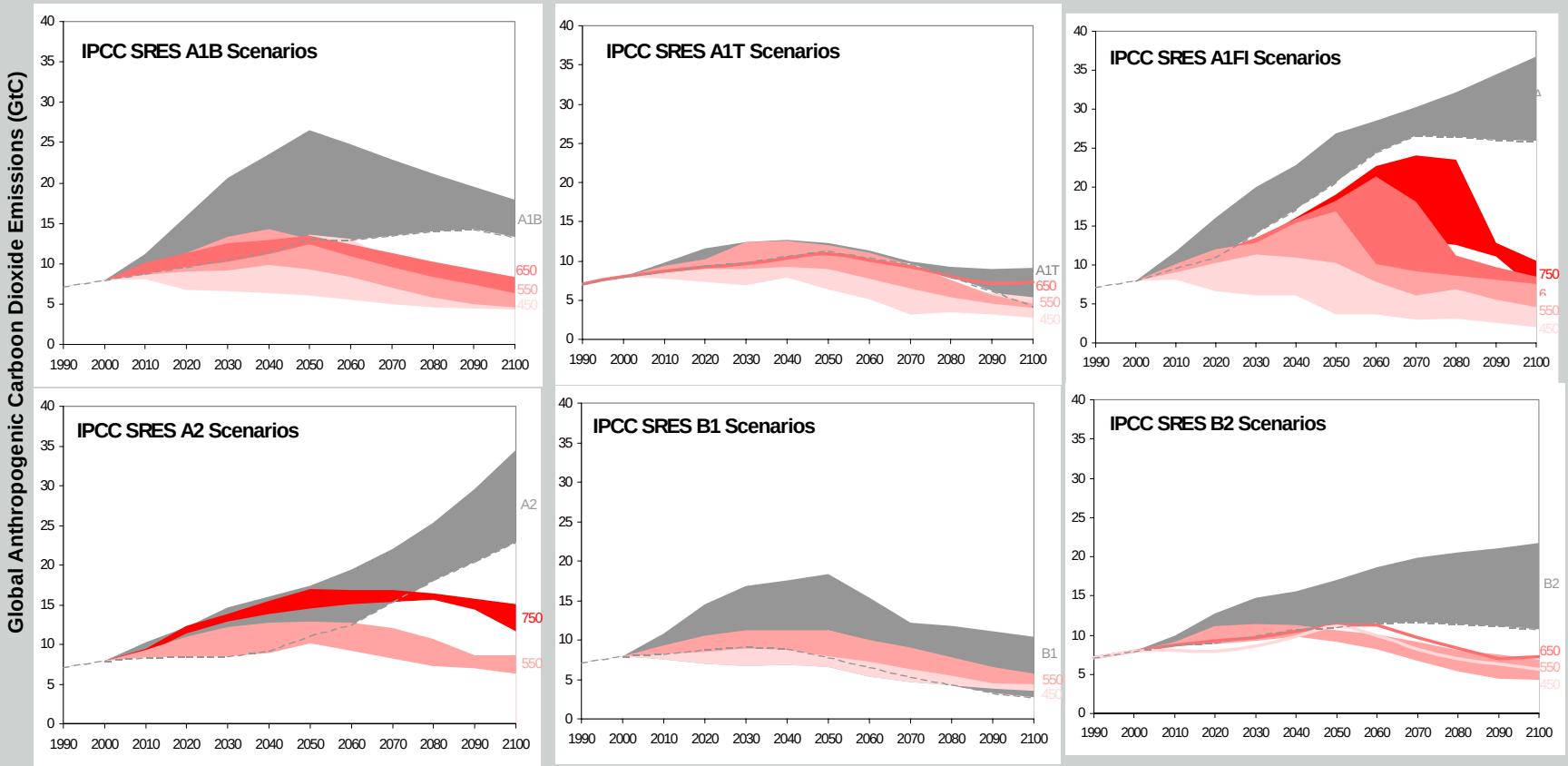
- Damages are invisible
  - Hard to introduce drastic measures
- Intergenerational Issue
  - Cost benefit analysis among generations are necessary
  - Must consider technology innovation
- Impact on economic growth
  - Cost (incl. opportunity cost) benefit analysis is indispensable
- Uncertainty
  - Step by step decision making approach is preferable

Alternative ideas

- Kyoto framework with revised target
- WTO-like scheme (deeper then broader)
- Review of “developing” countries
- Hybrid Approach
- Efficiency target
- Sector specific efficiency target
- Pledge and Review
- Technologies (CSLF, IPHE)

Criteria (Environmental Effectiveness, Economic Efficiency, Equity, Political Feasibility)

What kind of society should we aim at?

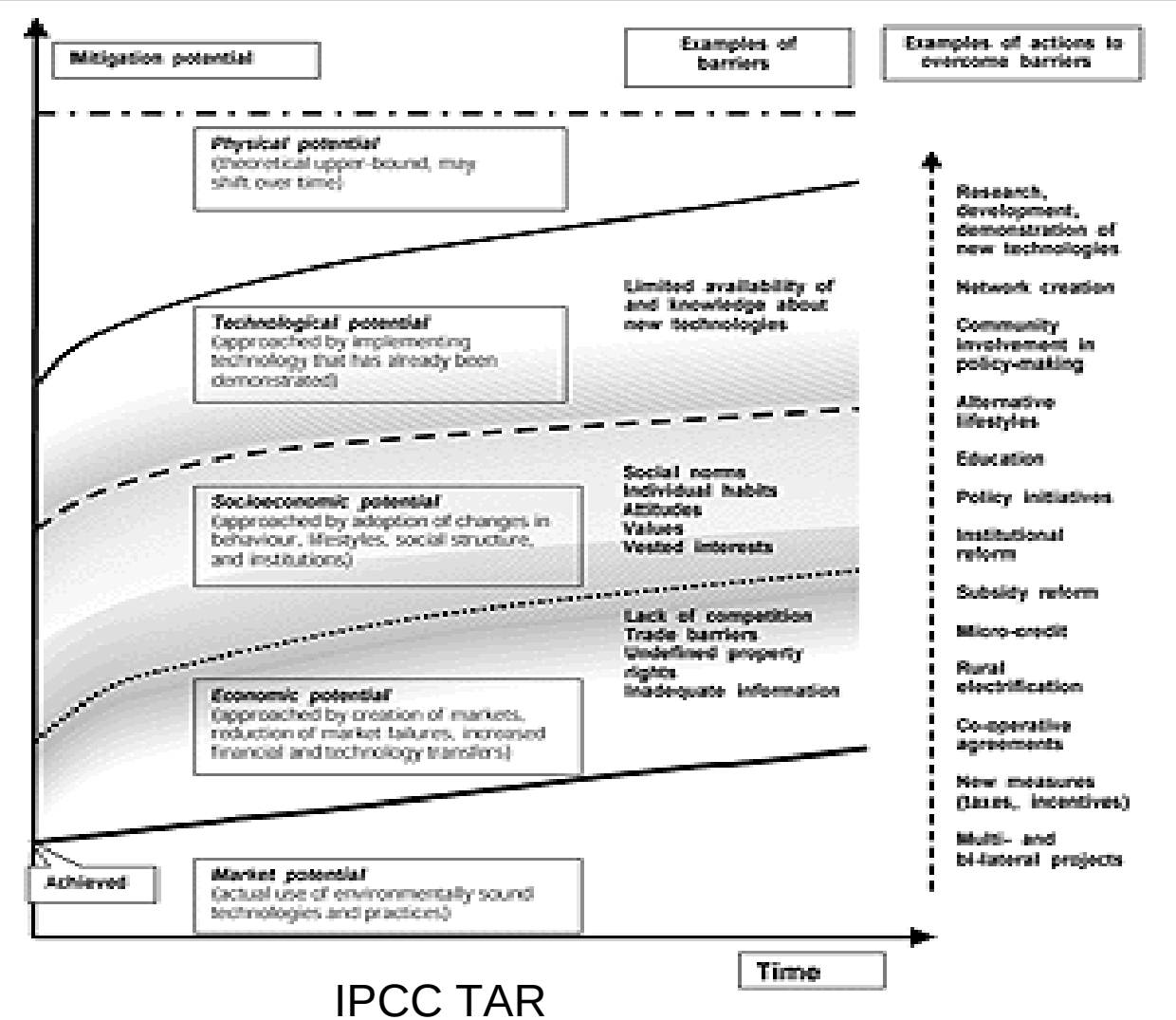


6 different scenarios are shown in IPCC TAR

We should aim at society with which we can stabilize GHG concentration in 100 years at a reasonable cost

Decoupling of economic growth and fossil fuel consumption

Technology innovations, diffusions and transfer are crucial factors



IPCC TAR