Ministry of the Environment
Government of Japan

チャレンジ25
未来が変わる。
日本が変える。

Japan's Climate Change Policies and MRV Initiatives

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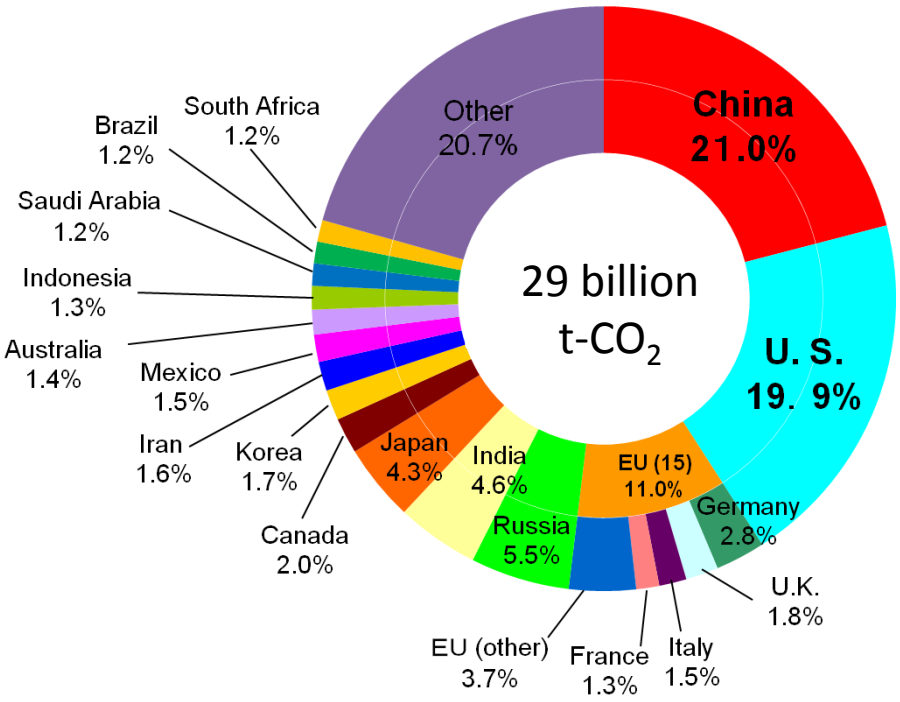
1 . GHG emissions in the World and the importance of MRV

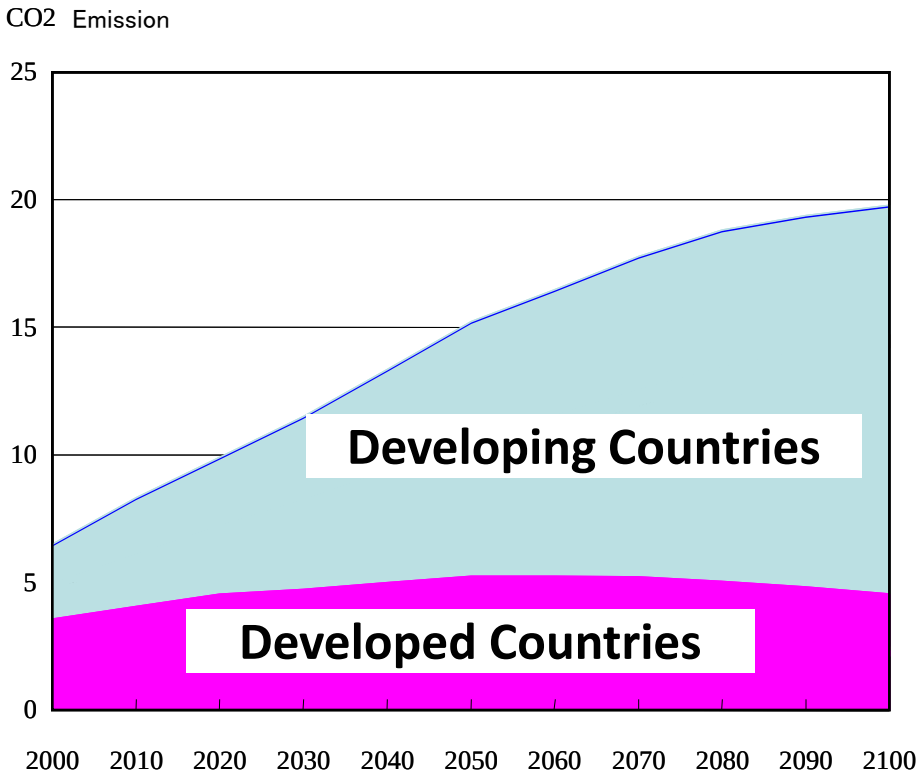
Global CO_2 Emissions

Global CO_2 Emissions (2007)



Source: MOEJ, based on IEA "CO2 Emissions from Fuel Combustion (2007 edition)"

Global CO_2 Emissions (projection)



Source: Kainuma et al., 2002:
Climate Policy Assessment, Springer, p.64.

G8 Environment Ministers Meeting (May 2008)

Chair's Summary

"It was noted that setting up and running GHG inventories in developing countries is of fundamental importance and G8 countries should consider supporting capacity building in developing countries for the collection and provision of data."

"Kobe Initiative"

- Aiming at holding meetings together with the outreach countries.

1. International research network on low-carbon societies
2. Analysis on bottom-up sectoral mitigation potentials
3. Promotion of co-benefits among relevant policies
4. Capacity building support for developing countries on inventories and data collection (MRV: Measurability, Reportability, and Verifiability)

Copenhagen Accord

- Associated by more than 120 parties covering over 80% CO2 emission from energy sources
- Regarded as an important step and good basis for further negotiation

Outline of Copenhagen Accord

- Long term Goal
  Increase in global temperature should be below 2 degrees Celsius
- Mitigation Target/Actions by 2020
  -Report mitigation targets (developed countries) or mitigation actions (developing countries)
  -International MRV for supported mitigation action
  -Report GHG emission through national communication every 2 years with international consultation
- Support for developing countries
  - Approaching USD 30 billion for the period 2010 ?2012
  - Commit to a goal of mobilizing jointly USD 100 billion a year by 2020
  - Adaptation, REDD+, Technology Transfer, Capacity Building

Advance draft of a revised chair's text to facilitate negotiations

32. Developing country Parties shall prepare and submit national communications to the Conference of the Parties every six years in accordance with article 12.1 of the Convention, supported by finance technology and capacity-building and based on revised guidelines to be adopted by the Conference of the Parties at its XX session. Least developed country Parties and small island developing States may submit national communications at their discretion.

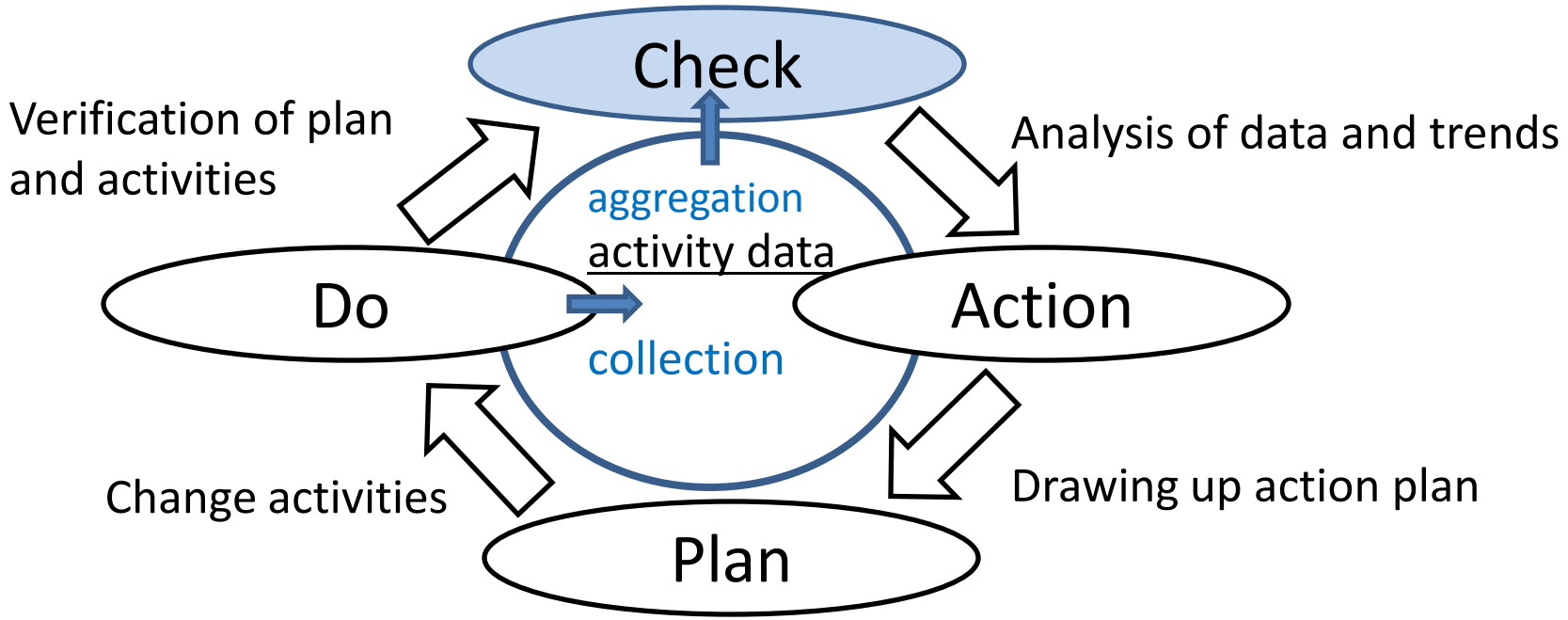
33. Developing country Parties shall also prepare and submit biennially [beginning in 20XX], following elements to the Conference of the Parties:

(a) National greenhouse gas inventories;
(b) Status of implementation of mitigation actions and estimated emission reductions or removals achieved from implementation of those actions;
(c) Methodologies used and assumptions made in quantifying emissions reductions or removals;
(d) Information on receipt of finance, technology and capacity building support;
(e) Result of domestic verification of domestically funded autonomous actions;

GHG Inventories and Data Collection

Data collection is key

Understanding of the current situation



→Clear Understanding of Current Situation is a first step for Establishment of PDCA Cycle

Japan's initiative for supporting developing countries in GHG inventories

●**WGIA:** Workshop on GHG Inventories in Asia

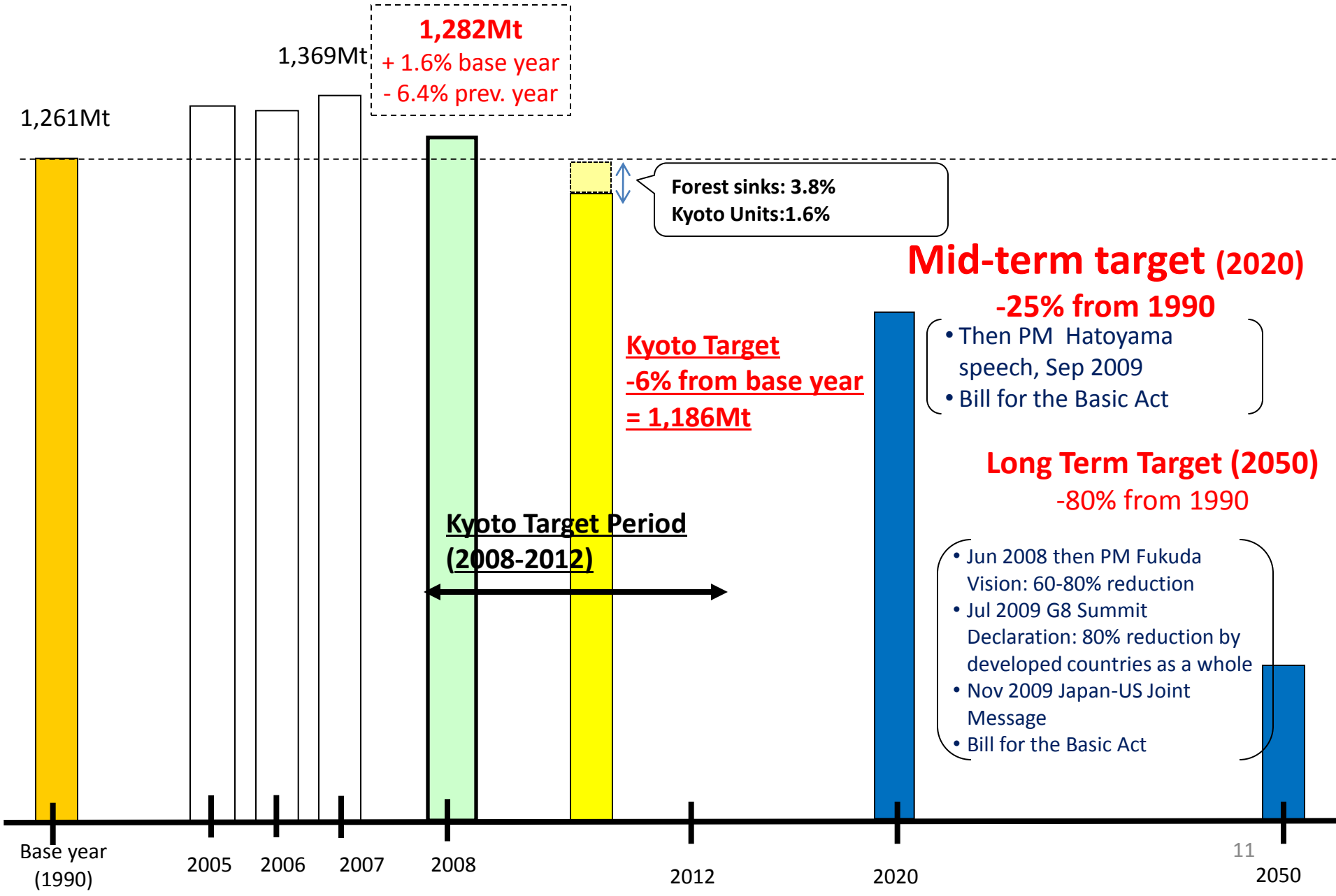
- Improve the quality of GHG inventories via regional information exchange
-Annual workshop in 14 Countries (2003-)

●**SWGA：** Improvement of Solid Waste Management and Reduction of GHG Emission in Asia (SWGA)

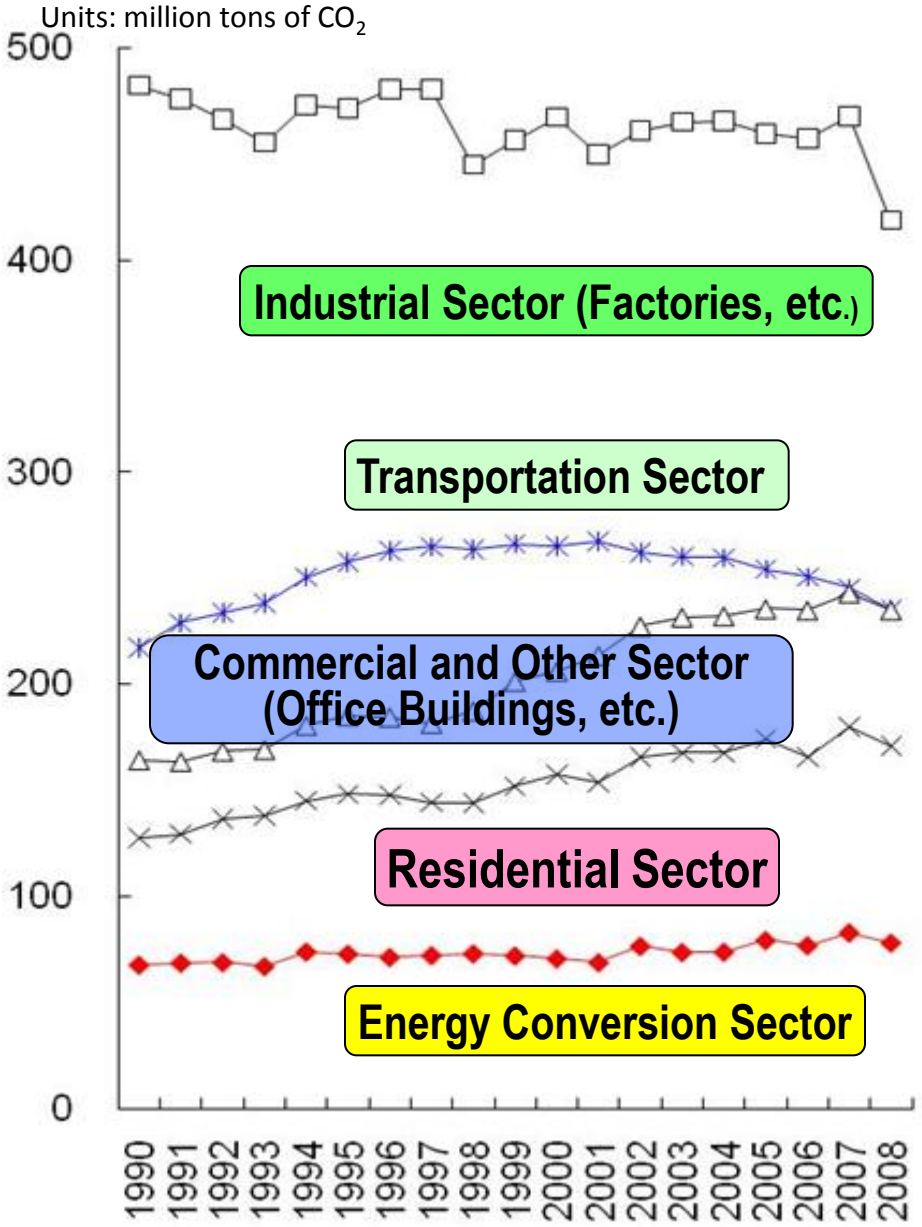
- Improve GHG inventories for the waste sector
- Annual workshop in 8 Countries (2007-2010)

2. GHG Inventories in Japan

Japanese GHG emission and reduction targets



CO_2 Emissions trends from Energy by Sub sectors and the Targets for 2010



Base year	Change form 1990	2008	Targets for 2010
482	- 13.2% ↘	419	424～428
217	+8.3% ↗	235	240～243
164	+43.0% ↗	235	208～210
127	+34.2% ↗	171	138～141
68	+15.2% ↗	78	66

Factor Analysis of GHG emission trends

- Analyzing the factors of emission trends is important to establish the PDCA Cycle.
- The contribution of factors to trends can be assessed by breaking down emissions into a product of three factors.
- The three factors are: basic unit of CO_2 emissions; basic unit of energy consumption; and amount of activity.

Formula to analyze the trend of CO_2 emissions from fuel combustion

e,g. Commercial and Other Sector

$$CO_2 \text{ emissions} = \frac{CO_2 \text{ emissions}}{\text{Energy consumption}} \times \frac{\text{Energy consumption}}{\text{Floor area}} \times \text{Floor area}$$

- $\frac{CO_2 \text{ emissions}}{\text{Energy consumption}}$: basic unit of CO_2 emissions
- $\frac{\text{Energy consumption}}{\text{Floor area}}$: basic unit of energy consumption
- Floor area: Amount of activity

Factor Analysis of CO_2 emissions trend in the Energy sector from 2007 to 2008

(Basic unit : 10,000t CO_2)

Subsectors		Amount of Activity		Basic Unit				Climate	Total
		Amount of Activity Index	Increase / Decrease		CO_2 (excl. electricity)	CO_2 from electricity	Energy consumption		
Residential		Number of households	+210	-830	+20	-330	-520	-250	-870
Commercial and other		Floor area	+310	-920	-40	-390	-500	-180	-800
Industry		Industrial Output Index	-5,650	+770	-60	-280	+1,110	-	-4,880
Transport	Passenger	Traffic Volume	-180	-390	+10	-20	-380	-	-570
	Cargo	Traffic Volume	-400	-30	0	0	-30	-	-430
Energy Conversion		Secondary energy output	-360	-120	-120	-	-	-	-480
Total CO_2 from fuel Combustion		—	-6,080	-1,520	-190	-1020	-300	-440	-8,030

Promotion of energy-efficient appliances and people's energy-saving efforts

mild winter

Decline in production

Decrease in efficiency caused by low operation rate

fuel efficiency improvement

Decline in cargo demand

Note: Comments in words balloons are the primary factors considered to have caused the increase or decrease.

Total figures are not necessarily equal to the breakdowns due to the round-off.

3 . GHG Reduction Policies in Japan

Japanese Examples of Actions (Continuous Efforts)

- Annual Inventory
- Submitted 5th National Communication (～2010)
- Kyoto Target Achievement Plan (Revised in 2008)
- Action Plan for Achieving a Low-carbon Society (2008)
- Legislations for energy efficiency for vehicles, electric appliances and factories. (so called “Top Runner System”)
- Environmental Assessment Law including GHGs
- Tax for fossil fuel (gasoline price 1.40 US$/L), E3 or E10 (Trial of Bio Ethanol Gasoline), and Feed in Tariff.
- Transportation: Modal shifts, Efficient Transportation
- Forest Management (Regeneration of neglected forests, Urban Greening)

…..etc

Challenge 25

To achieve Japan's Mid-term goal of 25% reduction by 2020 and Long-term goal of 80% reduction by 2050

- All possible policy instruments should be mobilized

- Policy measures will include;
  - Cap & Trade Emissions Trading Scheme
  - Global Warming Tax
  - Utilization of Renewable Energy
  - Promotion of Energy Efficiency
  - Innovative technology development
  - Carbon disclosure
  - Creation of New Business etc.

Main Points : Bill of Basic Law on Climate Change

The bill of Basic Law on Climate Change, decided by the Cabinet and submitted to the National Diet on Mar. 12, did not become law. The Cabinet will submit the bill to the next Diet session.

Mid and Long-term Goals

- 25% CO_2 reduction below 1990 level by 2020
  (premised on the establishment of a fair and effective international framework by all major economies and agreement on their ambitious targets)
- 80% CO_2 reduction below 1990 level by 2050

Key Policy Measure

- Introduction of domestic emission trading scheme (ETS) within around a year
- "Greening" tax system, including the consideration of a global warming tax, to be implemented from 2011
- Feed-in Tariff (FIT) system for whole renewable energy

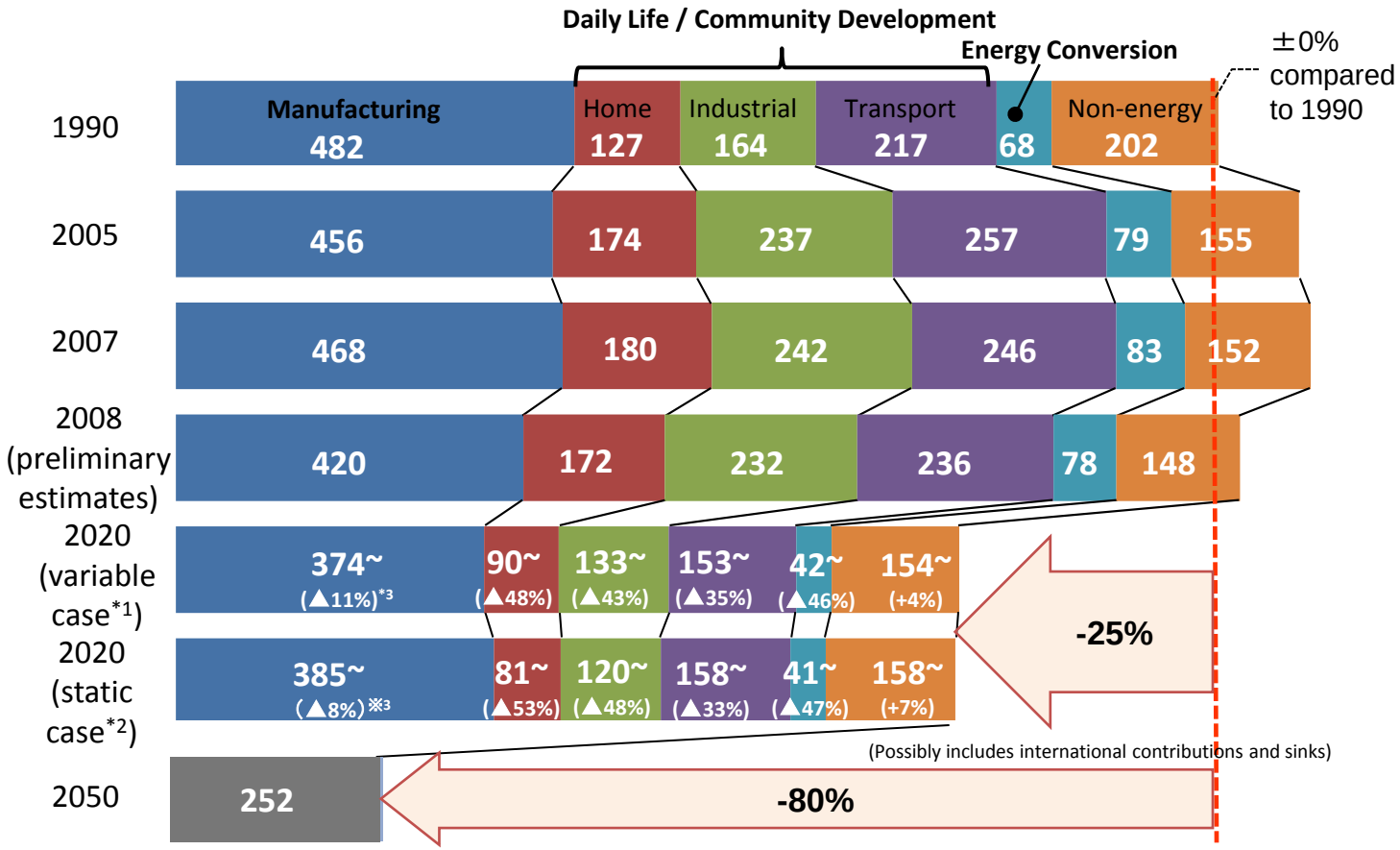
Mid- and Long-Term Roadmap

Mid- and Long-Term Roadmap for Global Warming Measures (overview)
-Draft proposal by Minister of the Environment, Sakihito OZAWA-

- Daily Life
  - 100% Achievement Rate of a higher Energy Efficiency Standard for all newly built homes and buildings in 2020 / 100% Achievement Rate of Zero Emission Homes and Buildings for all newly built homes and buildings in 2030
  - 2.5 million sales of Next-generation Vehicles by 2020
- Community Development
  - 10% reduction of per passenger automobile use in 2020
- Manufacturing
  - Reduce energy usage by 30 -40% by 2050
- Energy Supply
  - 10% of primary energy supply to be renewable energy sources by 2020
- Core Social Systems for Creating a Low-Carbon Society
  - A Cap and Trade domestic emission trading scheme, Global Warming Tax

Mid- and Long-Term Roadmap

A Look at Greenhouse Gas Emissions by Sector in 2020 and 2050. (Possibly includes international contributions and sinks.)



*1: An “All-sector Variable Macro-frame Case” premised that a price on carbon has been set .
*2: An “Static Industrial Macro-frame Case” where the operation levels in the industrial sector are static.
*3: Emission reduction levels compared to 2008.

Further information

"Japan's National GHG Emissions in fy 2008" (In English)
http://www.env.go.jp/en/headline/headline.php?serial=1314

"Overview of the Bill of the Basic Act on Global Warming Countermeasures" (In English)
http://www.env.go.jp/en/earth/cc/bagwc/overview_bill.pdf

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