

# Japan's Policies and Measures to Achieve Kyoto Target and Beyond



みんなで止めよう温暖化

チーム・マイナス6%

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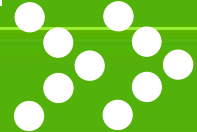
# Menu for the Presentation

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  - Top-runner approach & Technology based examples
- ❖ **National Campaigns**
  - Team -6%
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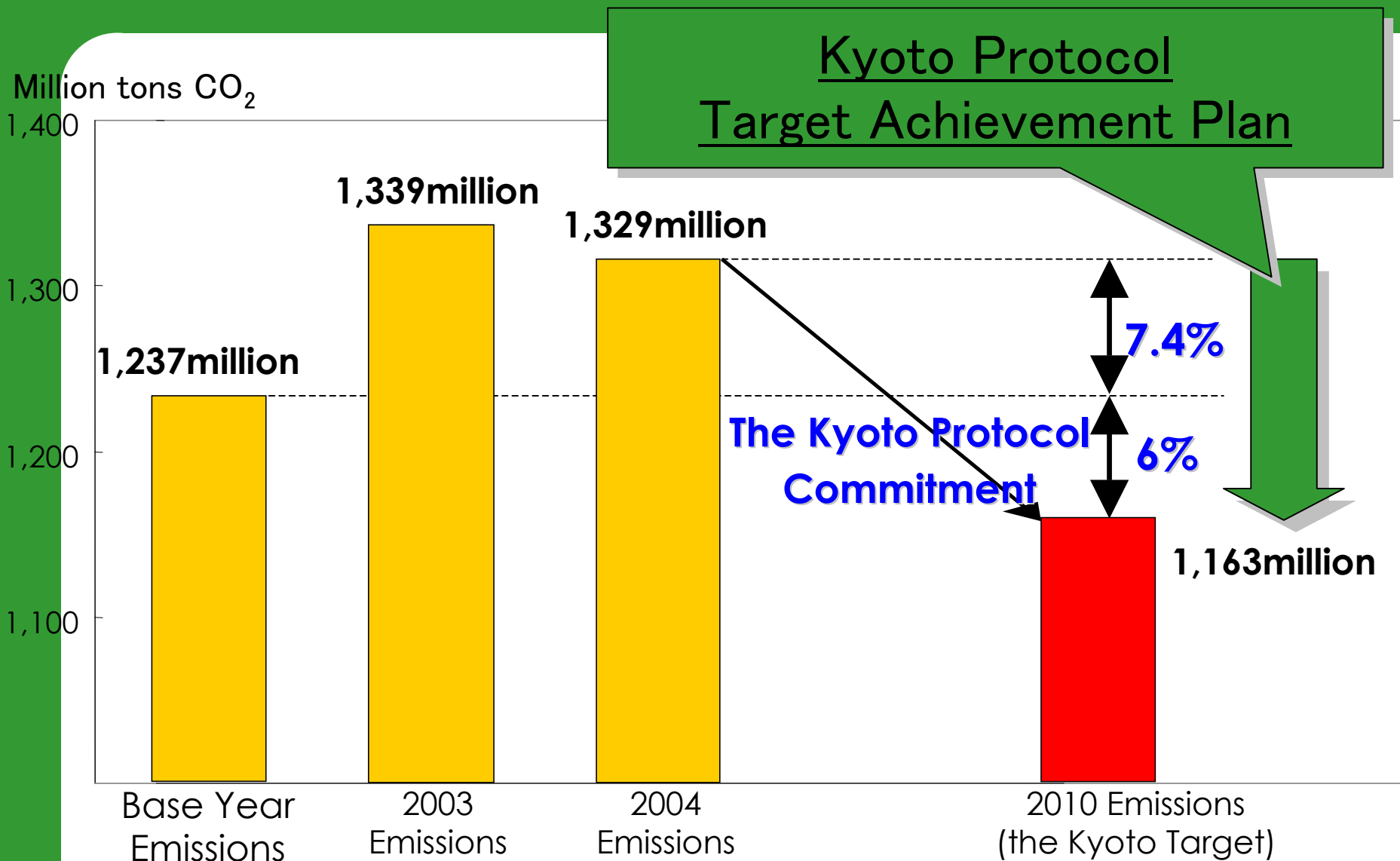


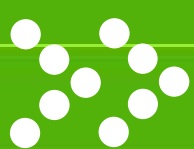
# *Domestic Measures*





# Japan's GHG Emissions

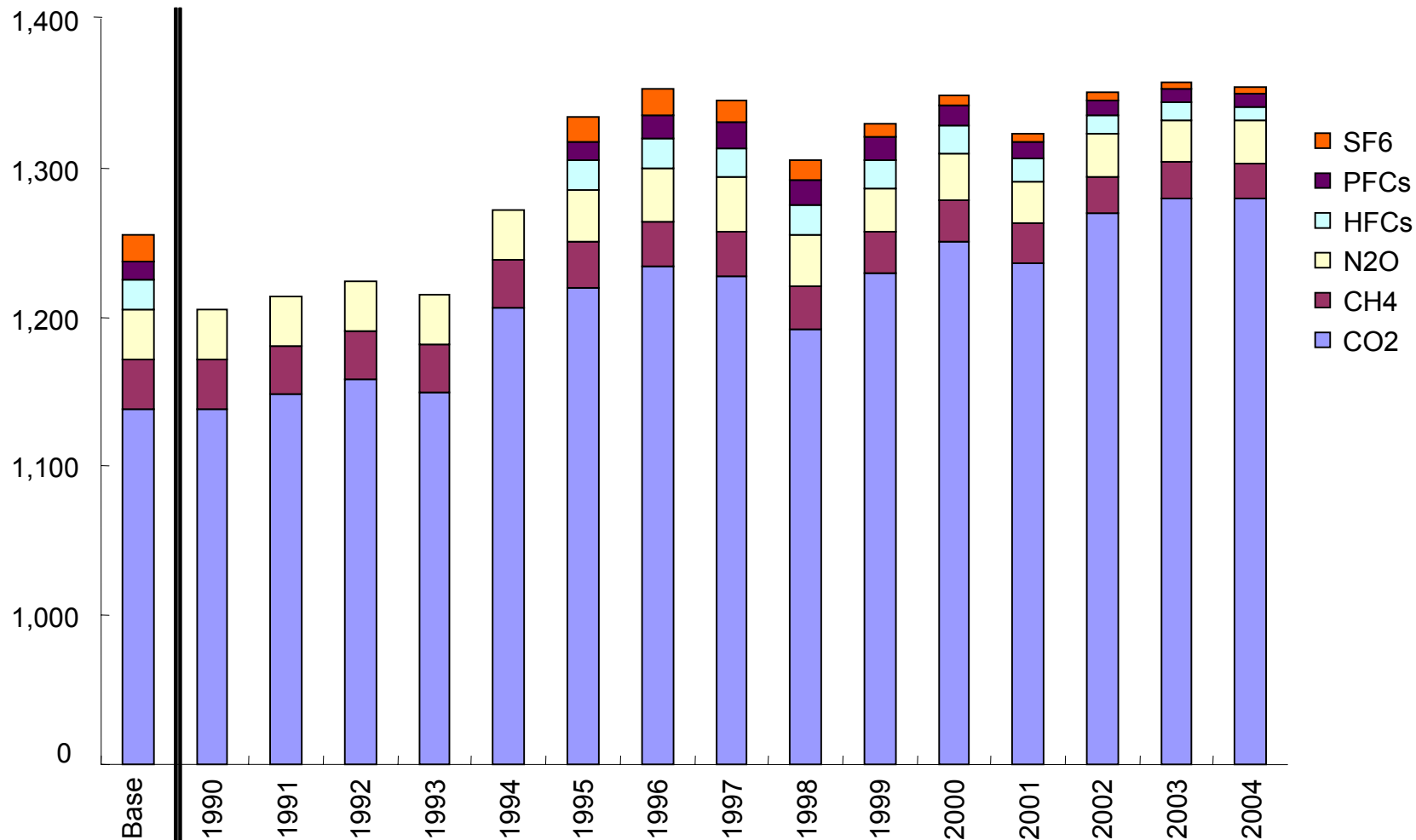




# Total GHG emissions in Japan

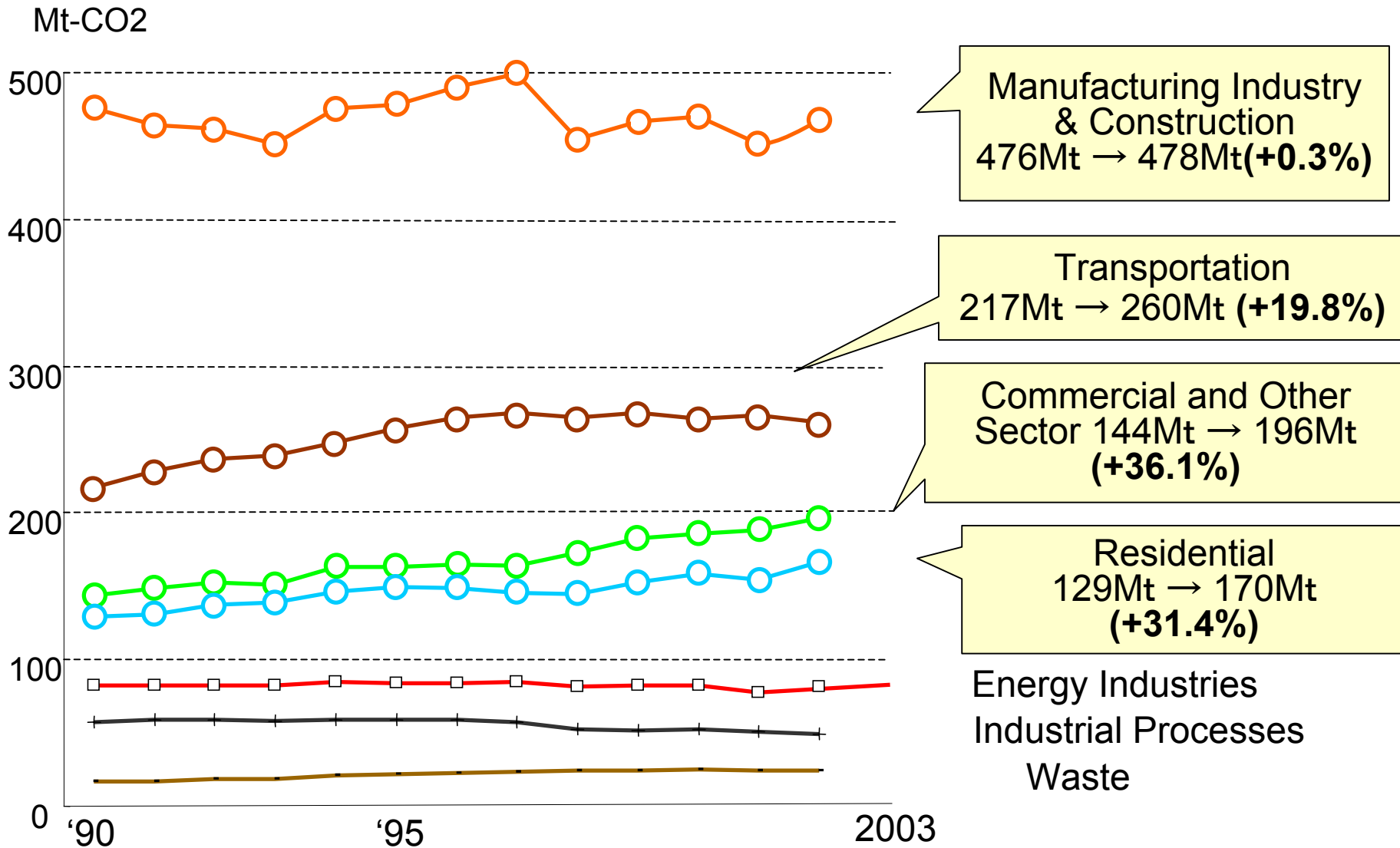
Million  
t-CO<sub>2</sub>

**1.35Gt-CO<sub>2</sub> In FY 2004** (8.0% increase compared to the base year )



(Fiscal Year)

# Energy related CO2 Emissions by Sector





# Laws and Regulations

- **System to Calculate, Report and Publish GHG Emissions (2005)**
- **Reinforcement of Energy Saving for Plants, Buildings, and Transportation (2005)**
- **Reinforcement of the Recovery and Destruction of Fluorocarbons (scheduled 2006)**
- **System to Acquire Credits of Kyoto Mechanisms (scheduled 2006)**



# Kyoto Target Achievement Plan

(approved by the Cabinet on April 28, 2005)

- 1. Ensure achievement of 6% reduction commitment under the Protocol**
- 2. Steady implementation of a continuous as well as long-term GHG emissions reduction on a global scale**

21<sup>st</sup> Century is a century of the environment.  
Climate change is a common issue to all  
human beings.

The government of Japan, as one of the most advanced countries across the globe in implementing measures on climate change, is aspired to take a leading role in the international community.





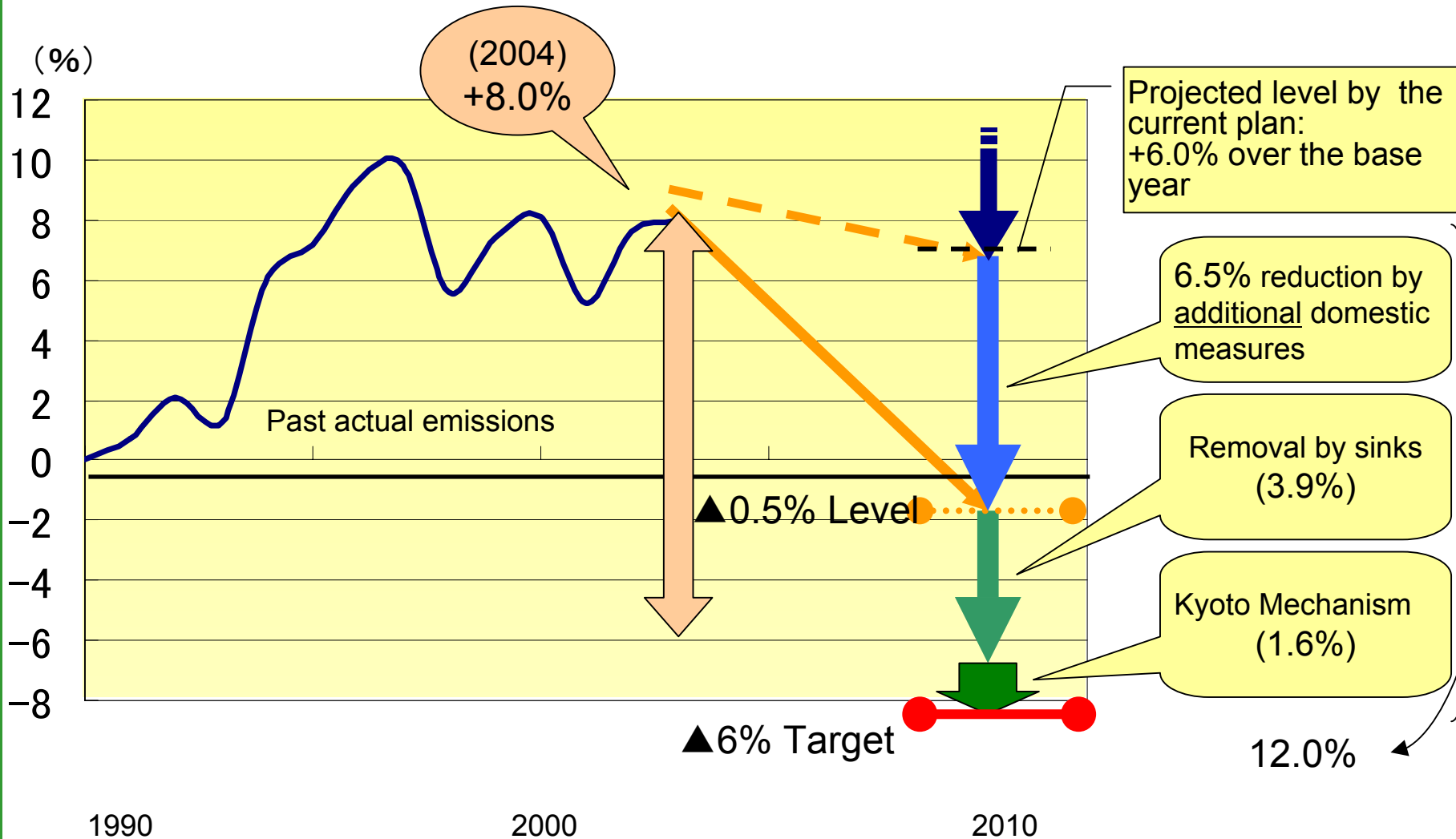
# Kyoto Protocol Target Achievement Plan

Classification	Year 2010 projections	Additional measures
① CO <sub>2</sub> emissions from energy sources	+5.4%	-4.8%
② CO <sub>2</sub> , methane, and N <sub>2</sub> O emissions from non-energy sources	-0.8%	-0.4%
③ 3 gases including CFC alternatives (HFC,PFC,SF <sub>6</sub> )	+1.4%	-1.3%
④ Securing sinks via forest management	—	-3.9%
⑤ Kyoto Mechanisms	—	-1.6%
<b>Total</b>	<b>+6%</b>	<b>-12%</b>

( Total emissions as a percentage of Base Year)

# Targets of the Plan

One percent of the base year emissions is equivalent to 12.4 million ton-CO<sub>2</sub>



# Policies and Measures

## ◆ National Campaign



## ◆ Dissemination of Technologies

### ➤ Hybrid Vehicle



### ➤ Light-Emitting Diode



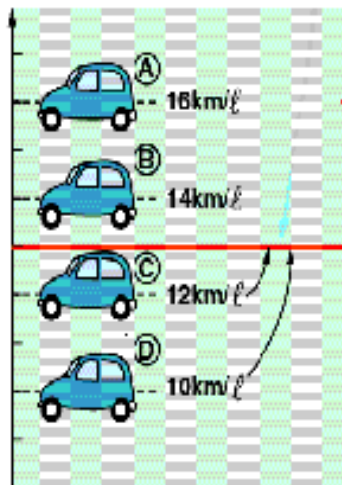
### ➤ Photovoltaic Power Generation



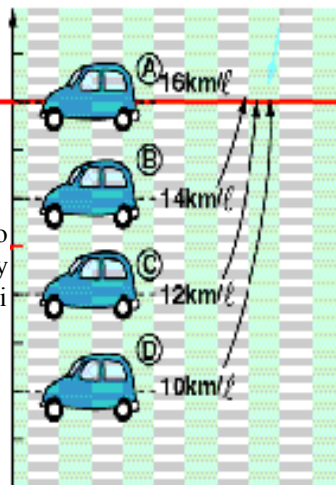
# Key elements : Technology

- ❖ Technology is a key for future deep reduction
- ❖ long-term, international cooperation for the development and diffusion of relevant (innovative and existing) technologies is essential
- ❖ We have many useful experiences on policy design  
*i.e. Japan's Top Runner Program*

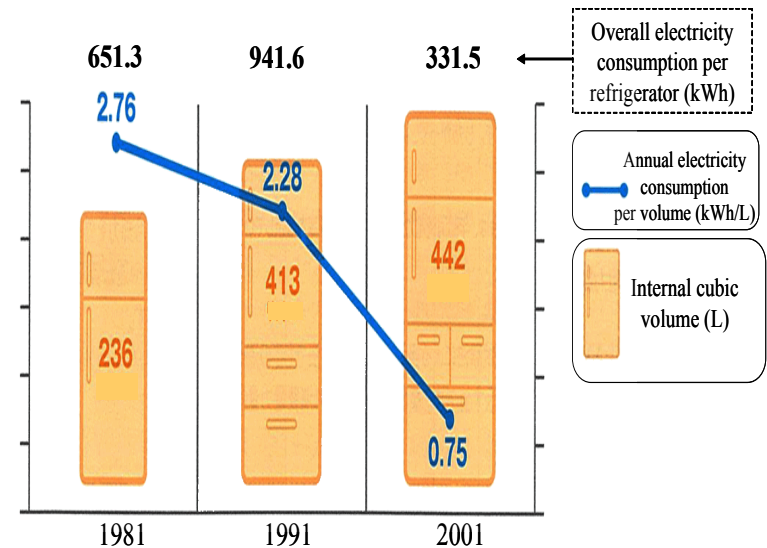
Fuel Efficiency  
(km/l)

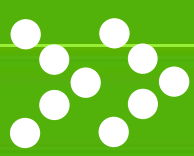


Fuel Efficiency  
(km/l)



## Energy efficiency of refrigerators





# Toyota



➤ Hybrid Vehicle (Prius)

- Target under Kyoto Protocol Target Achievement Plan (KPTAP)
  - Dissemination of clean energy automobiles by 2010
    - Total: 2.33 million units
    - Emissions reduction estimate: 3Mt-CO<sub>2</sub>

# Official Car for the Minister

## Previous official car for the Minister

### CNG Century

CO<sub>2</sub> Emissions : 260g/km

NO<sub>2</sub> Emissions : 0.02g/km

PM Emissions : —



## Official car for the Minister in current use

### Estima Hybrid

CO<sub>2</sub> Emissions : 127g/km

NO<sub>2</sub> Emissions : 0.02g/km

PM Emissions : —



## Previous official car for private secretary

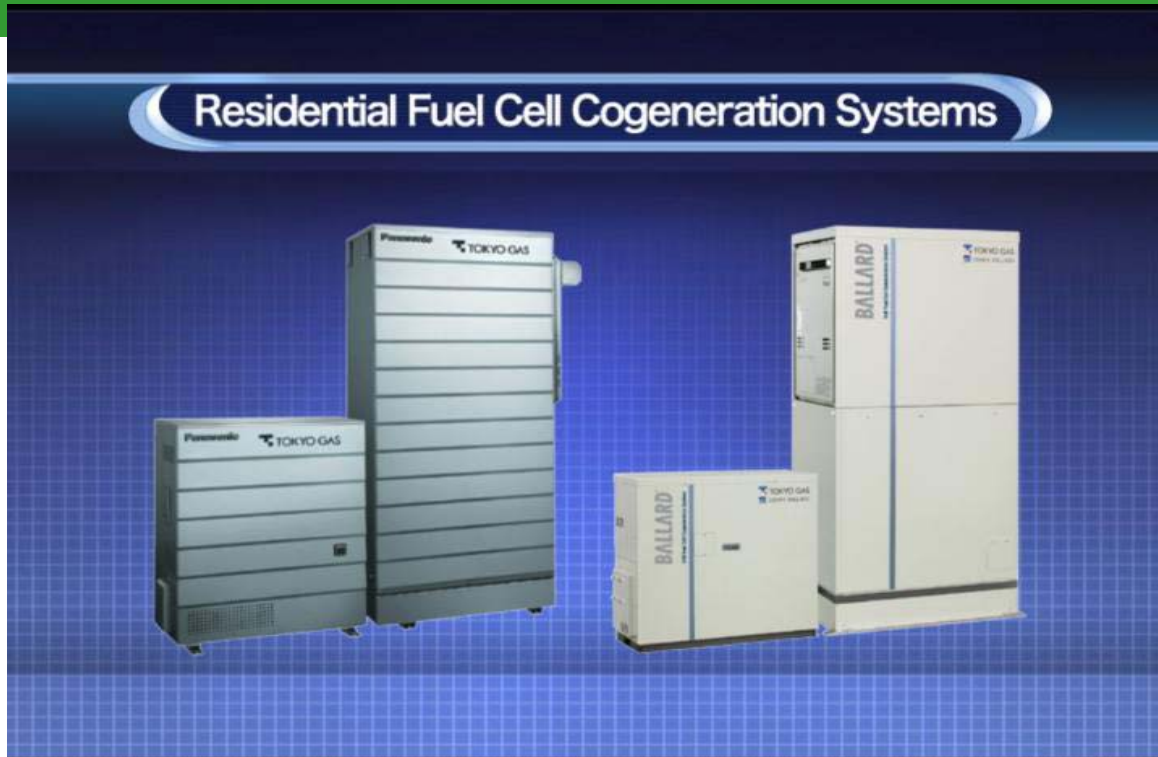
### Prius

CO<sub>2</sub> Emissions : 66g/km

NO<sub>2</sub> Emissions : 0.013g/km

PM Emissions : —





## ➤ Target under KPTAP

- Dissemination of fuel cells by 2010

Total: 1 million units for residential use

Emissions reduction estimate: 3Mt-CO<sub>2</sub>

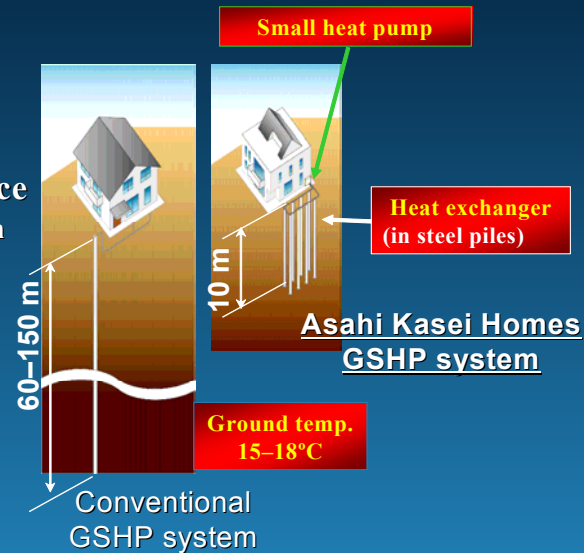
(for residential and commercial use)

# Asahi Kasei Homes

## Ground Source Heat Pump (GSHP) System for Residential Use

### Features:

- ◆ Energy efficiency
- ◆ Environmental performance
  - Alleviates heat island problem
  - Reduces CO<sub>2</sub> emission
- ◆ Enhanced comfort for residents
- ◆ Economical installation



- Target under KPTAP
  - Dissemination of heat pump systems by 2010
    - Total: 5.2 million units
    - Emissions reduction estimate: 3.1Mt-CO<sub>2</sub>



# Prime Minister's Official Residence



➤ Ceremony of Setting Fuel Cells



➤ Solar Panels



➤ Wind Power Generation

# "Team -6%" Campaign

ひとつのチームになろう。  
— 京都協定書目標達成計画、始まる —



みんなで作らよう温暖化  
チーム・マイナス6%

環境省が呼び、みんなで作る地球温暖化対策。京都協定書目標達成計画、始まる。この計画に賛同する「チーム・マイナス6%」は、地球温暖化対策の推進を目的としています。環境省、国土交通省、経済産業省、厚生労働省、農林水産省、国土庁が主催しています。各府県庁、市町村が賛同し、市民参加の取り組みを進めています。また、各府県庁、市町村が主催する、アイディアコンテストも開催しています。このコンテストでは、地球温暖化対策のアイデアを募集しています。詳しくは、環境省のホームページをご覧ください。  
http://www.team-6.jp

環境省 地球温暖化対策推進本部

## 夏、男性がネクタイを はずせば、女性の ひざ掛けがいらない オフィスになります。

入会者ふえてます。あなたも「チーム・マイナス6%」の会員に。

<http://www.team-6.jp>

参加登録(個人/法人)へのお問い合わせは電話03-3573-4026(シー・オー・ツー・ロウ)  
運営事務局受付時間 土・日・祝日を除く平日 10:00~18:00

室温を28℃に設定してください。

日本の夏は、高温多湿の気候に加え、地球温暖化やヒートアイランド現象で、ますます暑さを増しています。これまで男性は上着にネクタイを着用する習慣は、女性に冷房の効用を促すことで働きを促してきました。冷房による電力消費とCO<sub>2</sub>排出量が増えるという理由です。なにか、おかしいと思いませんか？ 政府は、この夏から、大企業はじめ、みんなで作る温暖化対策CDL制度(クールビズ)を実施しています。ただネクタイを脱ぎ取るのではなく、涼しく、かつこよく、礼節を重んじるスタイルの推進です。暑気払いとことから、これまでの常識を見つめ直してください。そして、みんなで作れば、きっと日本の夏が変わります。

会員番号2番 環境大臣 小池百合子

環境省 地球温暖化対策推進本部

- Set air conditioning to 28°C during summer
- Wear cool and comfortable but stylish clothes without ties and jackets

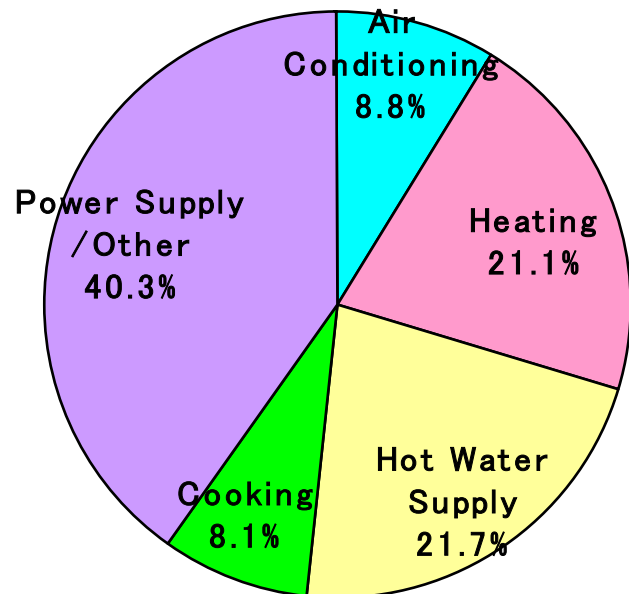
## “Cool Biz” Effects

Percentage of people who have heard of “Cool Biz”	95.8%
Reduction of electricity supply during June through August	Approx. 210 million kwh
Reduction of CO <sub>2</sub>	0.46Mt-CO <sub>2</sub>

# WARMBIZ

- Set heating system to **20°C** during winter
- “Wear more clothes if you are cold, don’t depend on the heater”

Energy Consumption in Commercial Sector  
(FY2002)





# Market-based mechanisms



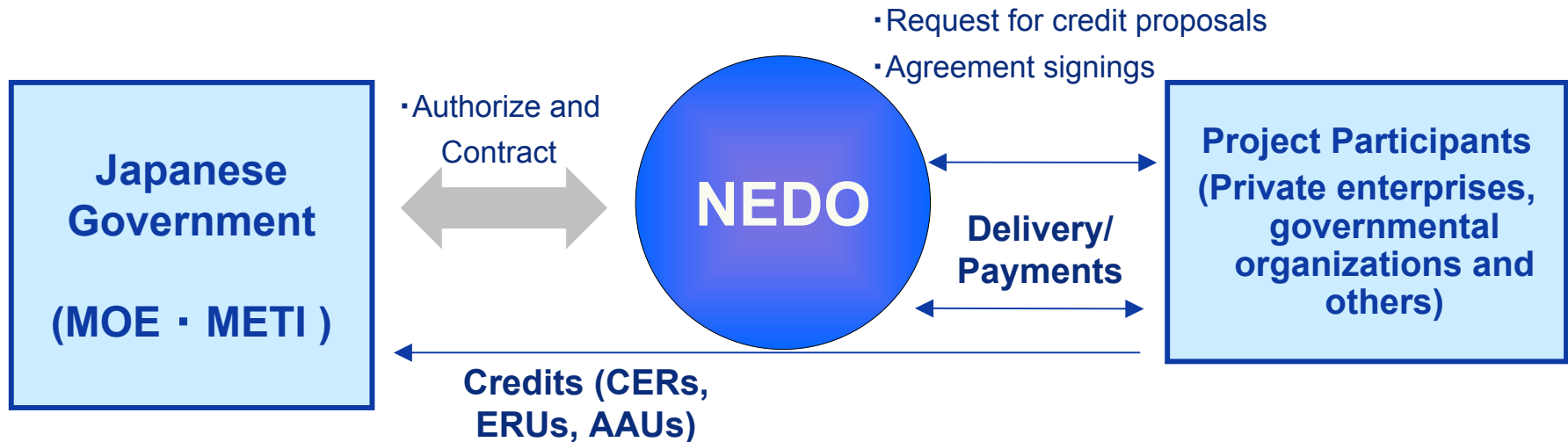


# Kyoto credits Acquisition Program by GOJ


- ❖ Under Japan's "Kyoto Protocol Target Achievement Plan", Japan needs total of 100 million tons of Credits (through CDM, JI and GIS)
  - ❖  $1.2 \text{ billion tons ('90)} \times 1.6\% \times 5 \text{ years} = 100 \text{ million tons}$
- ❖ Kyoto credits Acquisition Programme by the Japanese Government starts from FY2006
- ❖ Budget for FY2006: US\$100million.
- ❖ Implementation: NEDO (New Energy and Industrial Technology Development Organisation)

# Kyoto credits purchasing scheme by GOJ

- ❖ Ministry of the Environment (MOE), Ministry of Economy, Trade and Industry (METI) have commissioned NEDO to carry out credit acquisition
- ❖ NEDO aims to acquire credits cost-effectively from FY2006



# Current effort of Japan on ET

- ❖ Conscious of development of carbon market (ET scheme) in the world
- ❖ But current formal position is...
  - “issue (cap & trade ET) that **must be comprehensively studied**”, including “comparison of the domestic emissions trading system with other methods and their effects and the impact on industrial activities and the national economy” (*Target Achievement Plan(2005.4)*)
- ❖ Intensive study and exercises
  -  *Japan's Voluntary Emissions Trading Scheme*



# Japan's Voluntary Emissions Trading Scheme (JVETS)

Subsidies for new facilities and their installation leading to GHG emissions reduction

← Budget for FY2005: 3 Billion Yen

Participants shall retire JPAs and CERs in the registry

Operational period (FY2006)

June 2007

April 2005

Application for subsidy/ Screening

Start (April 2006)

End (March 2007)

- Setting-up period for new facilities
- Calculation and verification of base year GHG emissions

- Emissions allowances (JPAs) will be allocated to each participant
- The participants can trade JPAs freely throughout FY2006

Calculation and verification of actual GHG emissions in FY2006

Remaining JPAs and CERs can be carried over to the participants in the next operational period (FY2007)

**Facilities to be subsidised**

- New facilities to improve energy efficiency or to promote renewable energy leading to GHG emissions reduction (Total budget: 3 Billion Yen)

**Required items for application**

- Facilities and their installation costs
- Expected amount of emissions reduction in FY2006
- Base year emissions (overall average for the past 3 years)

※Participation unit: Single site basis

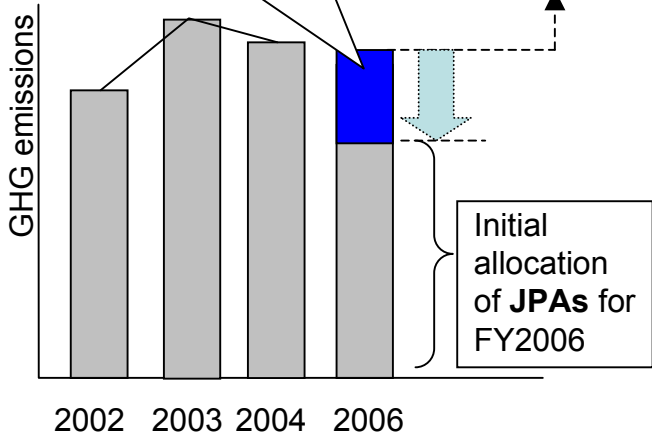
Screening on the basis of "cost-efficiency" optimisation

※Subsidy rate: 1/3 of installation cost

**Committed amount of emissions reduction during FY2006**

Base year emissions (an average for the past 3 years)

Final trading period (about one week): Participants can trade JPAs and CERs again if necessary



**<Key points>**

- After the final trading period, if participants cannot retire JPAs corresponding to the actual amount of their emissions, the subsidies paid should be returned.
- CERs from CDM projects also can be used for the retirement in the registry.



# Outline of JVETS for FY2006

- ❖ **Participating Entities: 32 entities + 8 traders**
- ❖ **Size of participants' emissions**
  - Base year emissions: 500 - 468,000 t-CO<sub>2</sub> p.a.
  - GHG reductions: 40 - 92,000 t-CO<sub>2</sub> p.a.
- ❖ **Sectors: Glass Mftg, Petrochemical, Auto-Components, Ceramics, ESCO, etc.**
- ❖ **Total emissions reduction in FY2006:**  
276,000 t-CO<sub>2</sub>
- ❖ **Cost of reduction: around 7US\$ / t-CO<sub>2</sub>**

# Expectations & concerns in Japan

## ❖ **Some voice from Industry:**

- “ET is a system for controlled economy but we should take voluntary actions to combat CC”

## ❖ **Debate on domestic ETS (Media’s View):**

- Regarding economic tools, Japan is lagging behind
- Industry disapproves caps
- Nippon Keidanren sets sectoral targets under its voluntary action plan, but its compliance is in question
- Caps may include transport and offices---sectors whose emissions are increasing---so the system covers industry as a whole
- Linkages with EU-ETS must be looked into



- *Foreign views / expectations of an ET scheme in Japan?*



# **International Cooperation**





# Japan 2050 Low-Carbon Society Project

- ❖ To stabilize climate change, reduction of drastic GHG emissions is necessary.
- ❖ The ministry of the Environment, Japan started a science based assessment project for its long-term climate policy from 2004.
- ❖ In Feb 2006, MOEJ and UK Defra (Department for Environment, Food and Rural Affairs) launched the Japan-UK joint research project that investigates ways of moving towards a Low-Carbon Society (LCS) by 2050.

# Japan UK Joint Research Project -An International Workshop

- ❖ A workshop on “Developing Visions for a Low-Carbon Society (LCS) through Sustainable Development” was held in June 2006 in Tokyo with the participation of the experts from about 20 countries (Both from developed and developing countries)
- ❖ In the workshop, experts reviewed country level studies and discuss for sharing images to investigate pathways leading to achievement of LCSs



# Asia Pacific Seminar on Climate Change

- ❖ This Seminar has been held since 1991 . The 15<sup>th</sup> seminar was held in Yokohama, on 11-15 September 2005. (Chair: Dr. Ancha)
- ❖ The *objectives* are:
  - To Provide a forum for the countries of the region.
  - To Share information and to develop relationships in an informal manner.
- ❖ The Seminar has contributed to formulating policies and measures to address climate change in the context of sustainable development.

<http://www.ap-net.org/seminar/h01.html>



# *Asia-Pacific Network for Global Change Research*

❖ The APN was established in 1996, as an inter-governmental network with 21 countries for the objectives;

- to promote global change researches,
- to enhance interactions between the science communities and policy makers in the Asia-Pacific region

❖ The APN has two pillar projects;

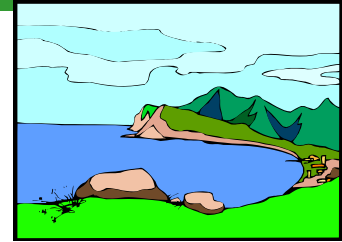
- Annual Regional Call for Proposals
- CAPaBLE (Scientific Capacity Building /Enhancement for Sustainable Development)

❖ The APN today plays a significant role in supporting global change research in the Asia-Pacific region.





# APN Strategic Plan (FY2005-2009)



## Goals

1. Supporting regional cooperation in global change research
2. Strengthening interactions among Scientists and policy-makers
3. Improving scientific and technical capabilities
4. Cooperating with other global change networks and organisations
5. Facilitating development of research infrastructure and transfer of know-how and technology



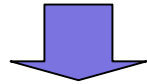
# ODA-based International Activities

## *Japan's stance on Official Development Assistance (ODA) towards Gulf Countries*

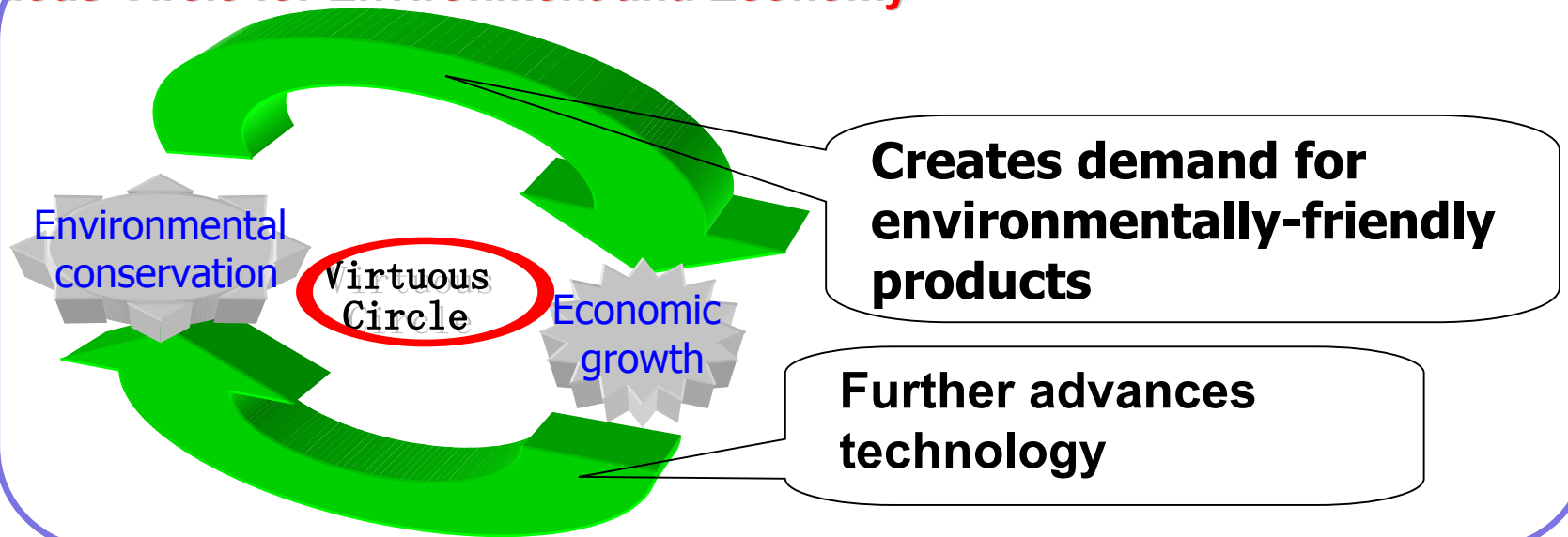
- ❖ Mid-term plan was created in 1999.
- ❖ **Purpose:** Economic diversification by help reducing economic dependence on petroleum
- ❖ **Focus areas:**
  - Training and capacity building of engineers and technicians
    - (ie) Japan-Saudi Arabia (1998-): Joint project on environmentally friendly car mechanics
  - Establishing and enhancing Enabling environment for attracting FDI and technological assistance from abroad.
  - Environmental management (monitoring, pollution control, etc.)
    - (i.e.) Oman (2002-) F/S on rehabilitation and management of the Mangroves.

# Conclusion

- ◆ National Campaign
- ◆ Dissemination of Technologies



## Virtuous Circle for Environment and Economy



**Achievement of 6% reduction commitment**