

# ***Four Proposals on Sectoral Approach***

Kazuhiko HOMBU

METI, JAPAN

16<sup>th</sup> April 2008

MEM WS on Sectoral Approach, Paris

# ***Why Sectoral Approach?***

---

## ■ ***Objective***

- ◆ Cross-border sharing of BAT/BPs in each sector (e.g. APP, IISI, CSI)
- ◆ Enhancing the visibility of estimated sector-specific and/or economy-wide emissions (including intensity) on a bottom-up basis.

## ■ ***Necessity***

- ◆ Large amount of GHG emissions reduction by disseminating BATs and BPs to major emerging economies from which bulk of incremental GHG emissions will come.
- ◆ Dissemination of BATs and BPs needs sector-specific cooperation.
- ◆ “Measurable, reportable and verifiable actions” are required in Bali Action Plan.

## ■ ***Methodology***

- ◆ Specifying BATs and BPs to be shared
- ◆ Grasping country specific circumstances
- ◆ Agreeing on performance indicators and common actions to be taken
- ◆ Calculating potential for improving intensities, which will be translated to slow/reverse/reduction of emissions
- ◆ Financial/technical cooperation to achieve the above potential

## ***Four proposals***

---

***Proposal 1: Start discussion on four sectors; power, industry, transport, residential/commercial. Start with big emitting “key sub-sectors” including coal-fired power generation, steel, cement, road transport.***

***Proposal 2: Enhance Data collection in cooperation with private sector and IEA.***

***Proposal 3: Support sector-specific emissions limitation/reduction efforts by developing countries by now.***

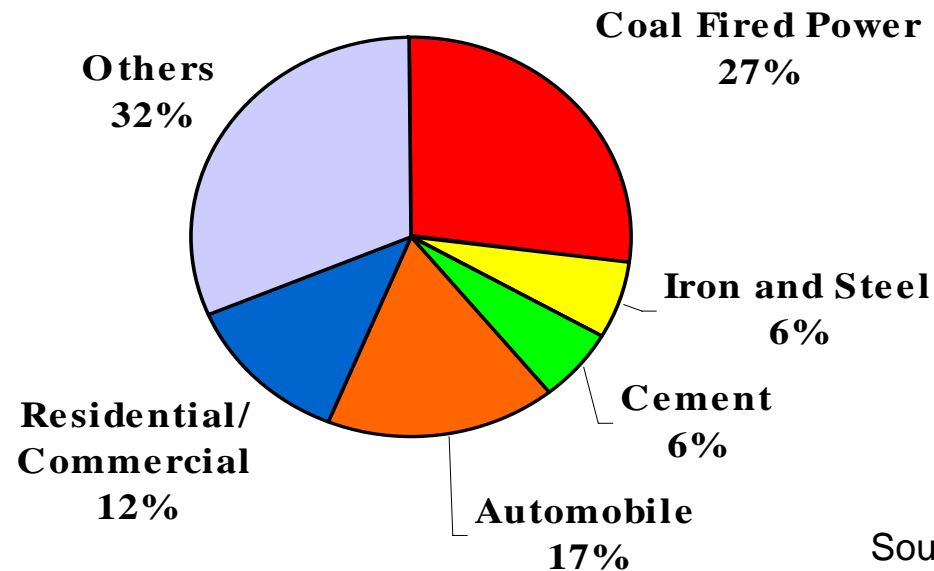
***Proposal 4: Develop innovative technologies in key sectors through an international initiative.***

## ***Need to start with big emitting “key sub-sectors”***

---

- ***Prioritise “key sub-sectors” in terms of effectiveness and practicalities***
- ***Candidates for “key sub-sectors”***
  - ◆ **Power: Coal Fired Power Generation (70% of power sector emission)**
  - ◆ **Steel, Cement (50% of industrial sector emissions)**
  - ◆ **Road Transport (70% of transport sector)**

**Global Energy Related CO2 Emissions 27.1 Gt (2005)**



Source: IEA

## ***Coal fired power generation***

---

### ■ ***Justification***

- ◆ 70% of CO<sub>2</sub> emissions are from coal fired power in the power sector
- ◆ Bulk of incremental emissions from emerging economies

### ■ ***Indicator***

- ◆ Power generation efficiency (energy consumption/kWh)

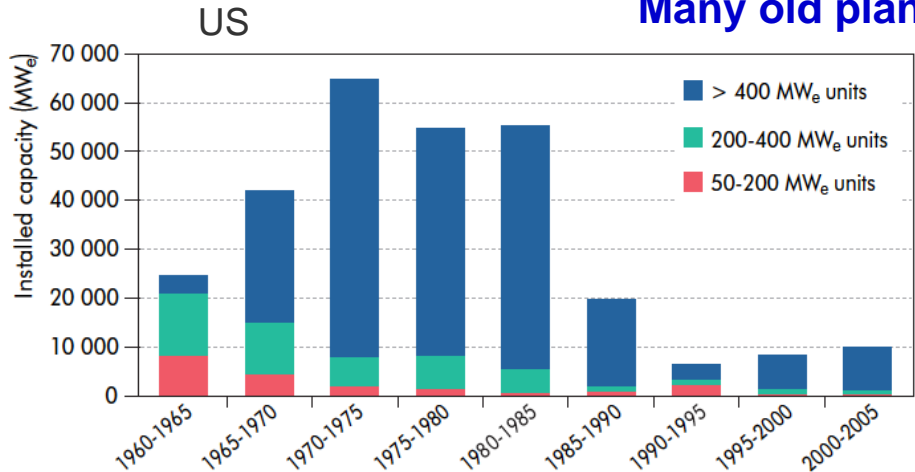
### ■ ***Possible Common Actions***

- ◆ Minimum efficiency standard of incoming plants (new and replacing plants)
- ◆ Maintaining efficiency of existing plants
- “Common actions” are feasible. **However, “common efficiency target for power generation” won’t be feasible.** Each country will set its own measurable, reportable and verifiable goal based on its specific national circumstances.
- De-carbonization of power mix (CO<sub>2</sub> emissions/kWh) is also essential, but given different national circumstances, “common actions” won’t be feasible. Setting individual voluntary goals for introducing cleaner energies (ex. clean use of coal, RE, nuclear) could be an important.

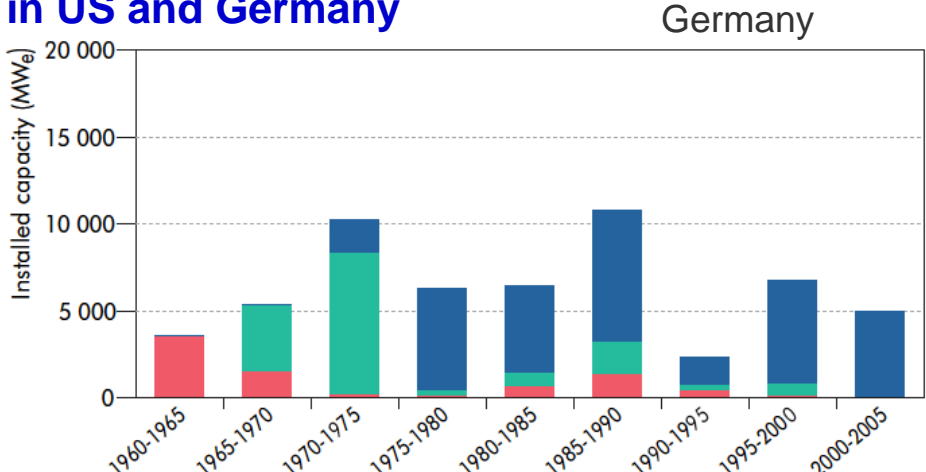
# Age distribution of coal-fired capacity by size

“Common efficiency target for coal-fired power generation” won’t be feasible under the different national circumstances.

Many old plants in US and Germany

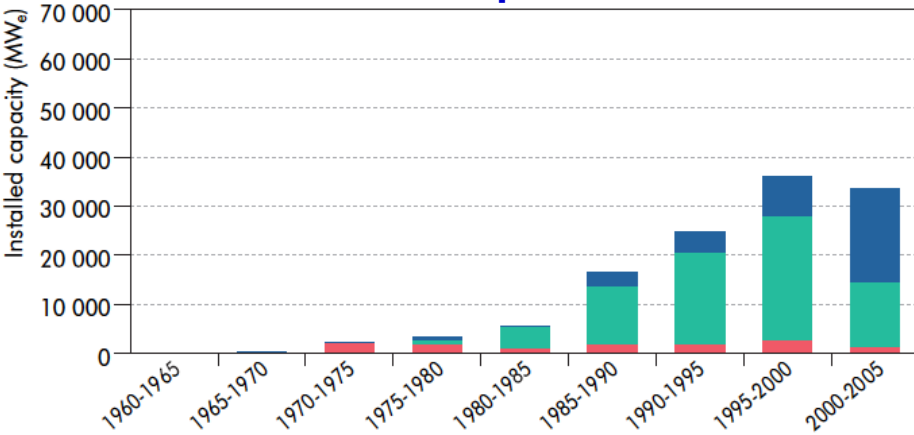


Source: IEA Clean Coal Centre, 2005b.



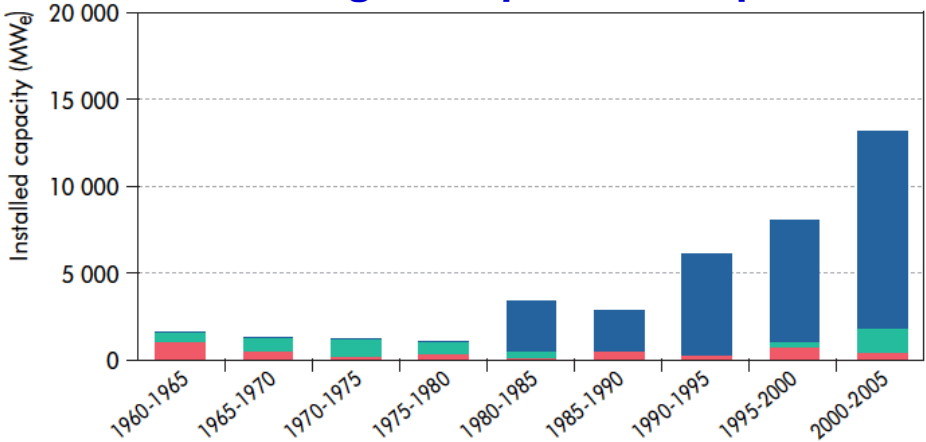
Source: IEA Clean Coal Centre, 2005b.

New medium size plants in China



Source: IEA Clean Coal Centre, 2005b.

New large size plants in Japan



Source: IEA Clean Coal Centre, 2005b.

## Introduction of advanced technologies is crucial

Low carbon power generation technology is progressing. Advanced technologies should be used for incoming plants.

		<b>Installed capacity</b>	<b>Carbon Intensity</b>
Conventional	Sub-critical	85%	1.00
Advanced	Supercritical (SC)	11%	0.85
	Ultra-Supercritical (USC)	2%	0.8 (0.7 in 2020)
	Integrated Gasification Combined Cycle (IGCC)	>0.1%	0.86 (0.7 in 2020)

**Note:** Supercritical plants are defined as those operating at steam temperatures above 540°C.  
 Ultra-supercritical plants are units operating at temperatures above 580°C.

Source: IEA Energy Technology Perspectives 2006  
 Powering a Sustainable Future, 2006, WBCSD

## ***Steel and Cement***

---

### ■ ***Justification***

- ◆ 1<sup>st</sup> and 2<sup>nd</sup> emitters in the industrial sector. Ample experience in specifying BATs/calculating potentials through APP, IISI and CSI

### ■ ***Indicator***

- ◆ Energy consumption and/or CO2 emissions if applicable per unit production

### ■ ***Possible Common Actions***

- ◆ Specifying BATs for reducing energy consumption/CO2 emissions
  - ◆ Setting goals for introducing the above technologies (e.g. more than X% introduction of technology Y)
  - ◆ Setting goals for improving production efficiency (e.g. X kg-CO2/t for steel)
- **Setting an uniform target across countries is not realistic.** Each country will set its own measurable, reportable and verifiable goal based on its specific national circumstances.

# Key BATs have big potential for mitigation



- The SOACT Handbook is being compiled in APP steel TF by member countries.
- By the end of 2006, 53 environmental protection technologies and 48 energy saving technologies have been filed.

- CO2 emission reduction potential of APP6 is 127million tons per year.
- 4 key technologies share 80% of the total.  
 CDQ, COG Recovery, BFG Recovery, BOF Gas Recovery

