Japan's View on Sectoral Approach

October 22nd, 2008

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What is Sectoral Approach?

Concept

- SA is a tool to address global emissions by sectors
- Basic concept of SA is embedded in the Kyoto Protocol

Advantages

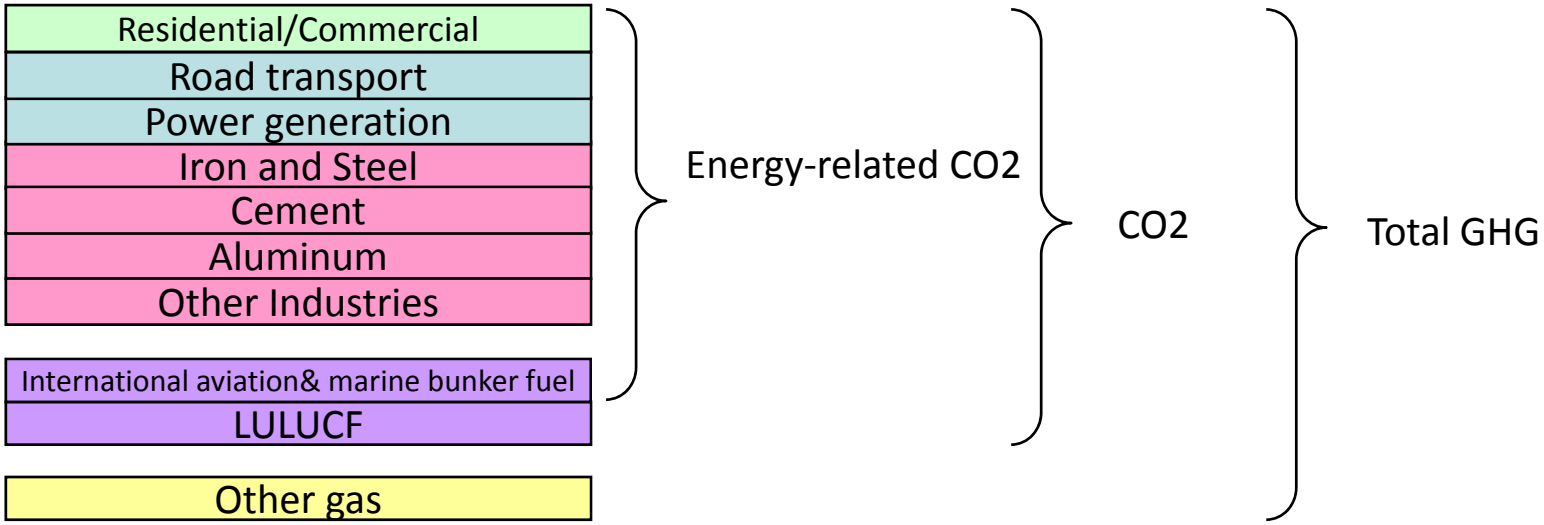
Through analyzing reduction potentials and setting indicators, SA is useful in

- setting ambitious and feasible national reduction targets for developed countries, ensuring comparability
- promoting effective technology transfer

Principles

1) Not replace national emission reduction targets
2) Consistent with the principle of “common but differentiated responsibilities and respective capabilities”
3) Not apply a single common standard to all countries
4) Not lead to any trade sanctions

Step1:Focus on sectoral emissions



Step2: Analyze Sectoral emission

Efficiency/Intensity × **Activity** = **CO2 Emission**

Evaluate improvement of efficiency based on technologies

Iron and steel — Emission per unit production/energy consumption per unit production

Evaluate improvement of intensity by policies &measures

Residential — Low-carbonization of social system, national campaigns, enhanced recycling

Estimate Activity level

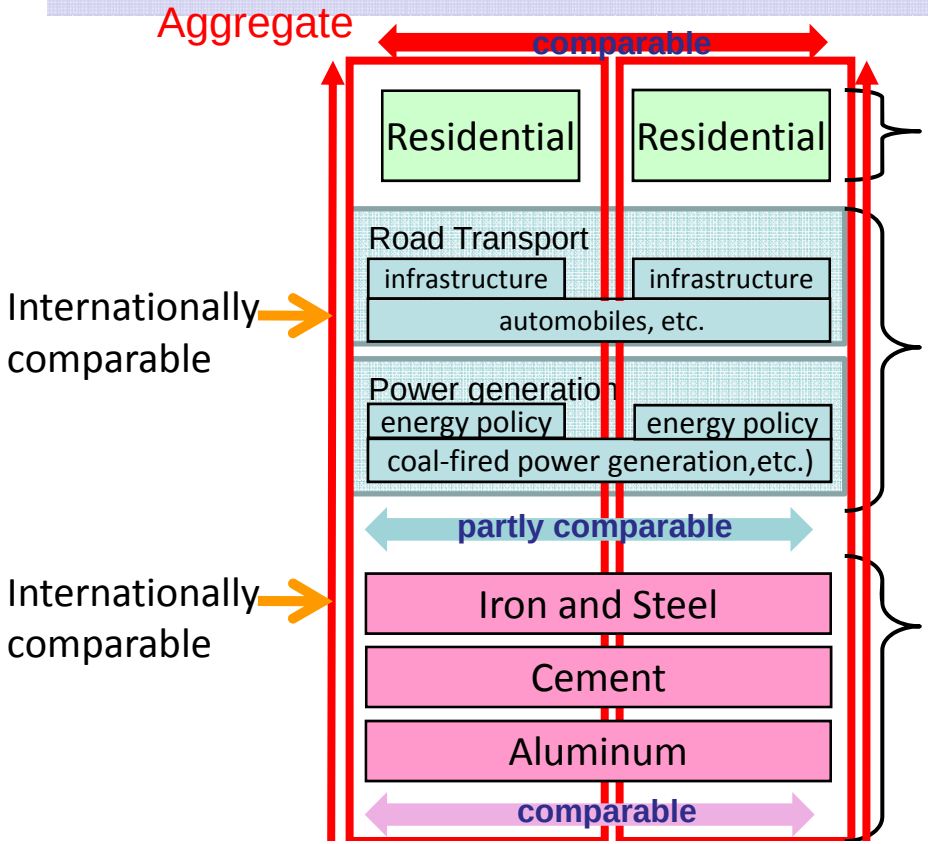
Estimate CO2 Emission

Step3:Compare the developed countries' efforts

(1) Aggregate potential of each sector to estimate national potential

Iron & steel, cement, aluminum : based on international efficiency indicator
Power generation, road transport : based on international efficiency indicator and national policy
Commercial, residential : based on national policy

(2) Cross-check and adjust the level of aggregated national target from the viewpoint of comparability, using various indicators (e.g. intensity, marginal abatement cost etc.)



Residential, Commercial etc.
Sectors to be addressed mainly based on domestic efforts

Power generation, Road transport
Sectors where international efforts/collaboration can be partly developed

Iron & steel, Cement, Aluminum
Sectors where international efforts/collaboration are already well-advanced

Step4:Disseminate BAT to promote MRV actions

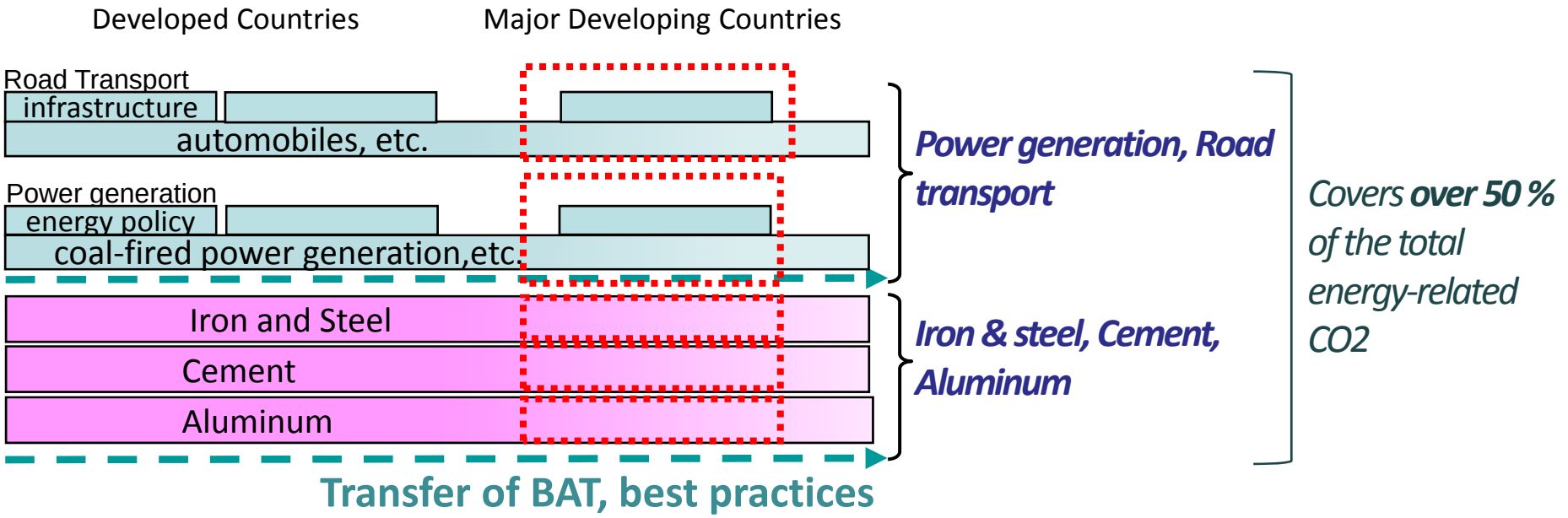
National efforts of developing countries can be supported by

- identifying BAT/BP and
- promoting effective transfer of them through analyzing reduction potentials

Major developing countries can use sectoral efficiency indicators to set MRV mitigation actions

Many of these actions have no regret nature with co-benefits (e.g., energy conservation, reduction of air pollution)

*BAT: Best Available Technology



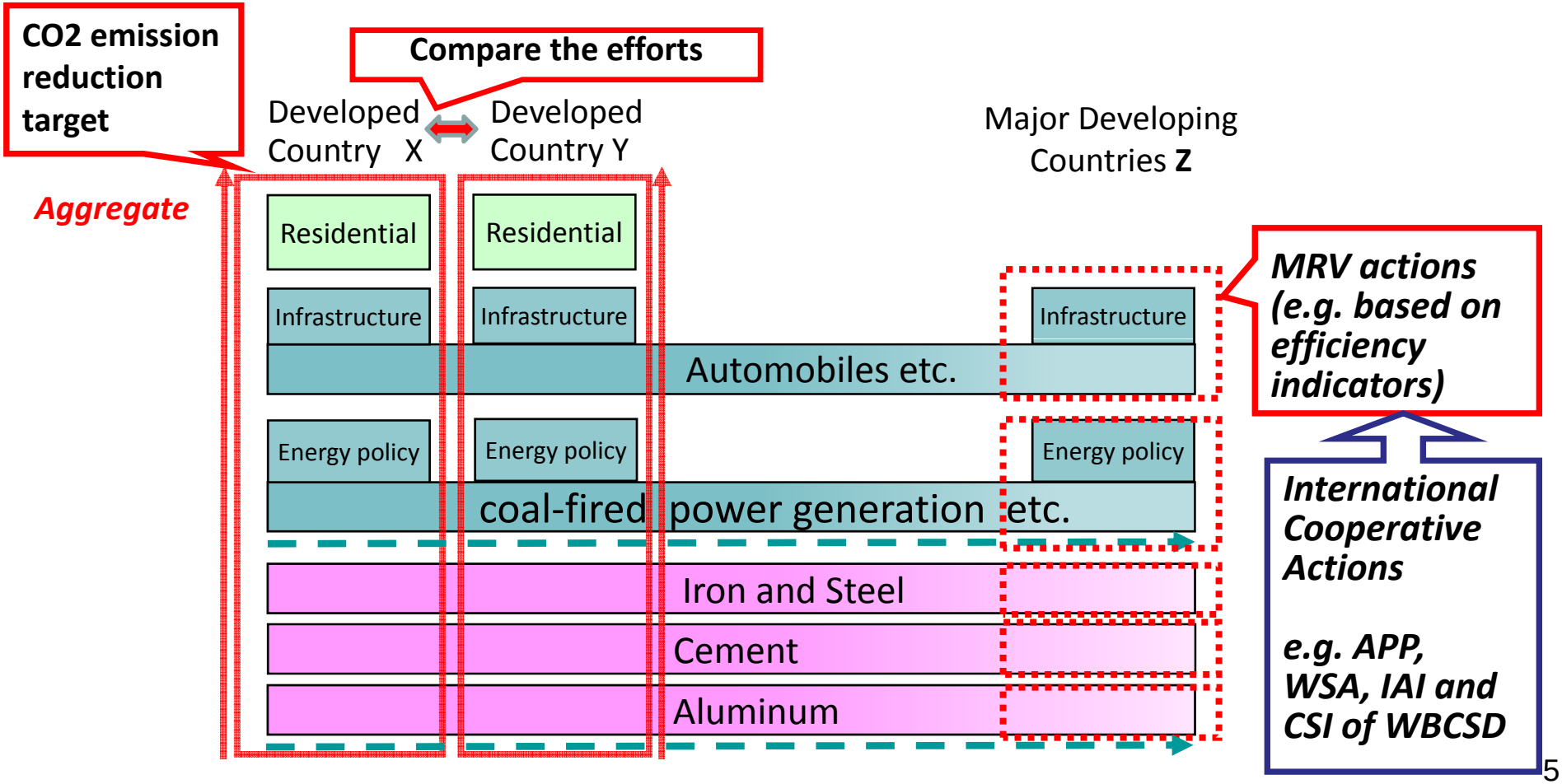
Example of cooperation under the Asia-Pacific Partnership (APP)

Technology Handbook → *CO2 reduction potential* → *Performance diagnosis* → *Technology transfer*

Scheme of Sectoral Approach

Through analyzing reduction potentials and setting indicators, Sectoral Approach

- helps to compare the developed countries' efforts
- accelerates global emissions reduction by
  - supporting national efforts of developing countries through transfer of technology
  - helping major developing countries to set MRV mitigation actions



Nationally appropriate actions by developing countries

Differentiation and Actions of Developing Countries (DCs)

A) DCs expected to take further mitigation actions based on certain criteria such as economic development stages, response capabilities and shares of global GHG emissions

- Binding targets for:
  - GHG intensity or energy intensity in major sectors (e.g., power, iron/steel, cement, aluminum, road transport)
  - Economy-wide GHG/GDP or TEC/GDP (with estimate of total GHG emissions based on GDP forecast)
- National measurement system for its targets
- Voluntary national action plan to be reviewed periodically by COP

B) DCs emitting very little GHGs and vulnerable to climate change (e.g. LDCs and SIDs)

C) Other DCs

- Voluntary national action plan to be reviewed periodically

Graduation

- Move to upper group in accordance with the economic development

Japan's Case: Energy Supply & Demand and CO2 emissions

<Basic Concept>

1. Estimate sectoral activity level.

- ✓ ***Basic sectors are i) Industry, ii) Commercial and Residential and iii) Transportation.***

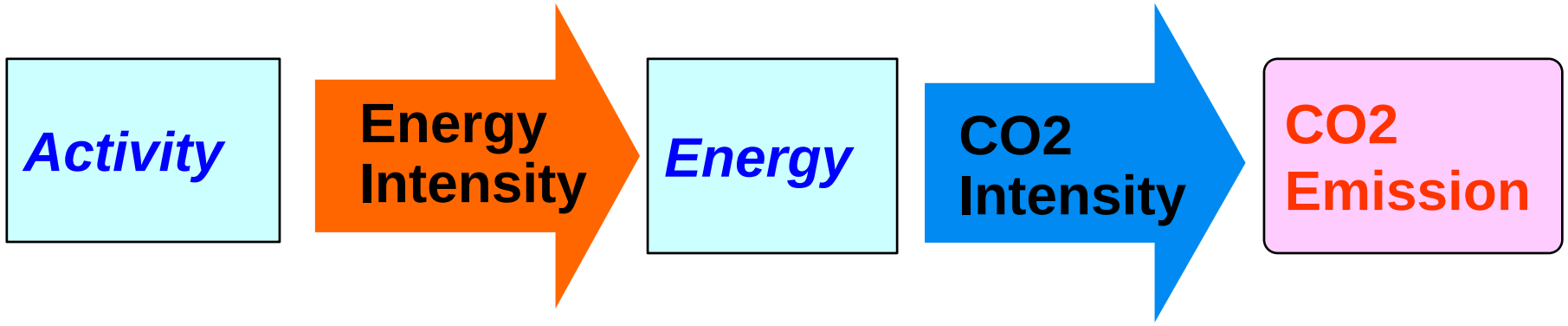
2. Estimate sectoral energy demand from activity level

- ✓ ***i)Energy efficient technology and ii) energy saving activities improve efficiency.***

3. Calculate sectoral energy supply from demand.

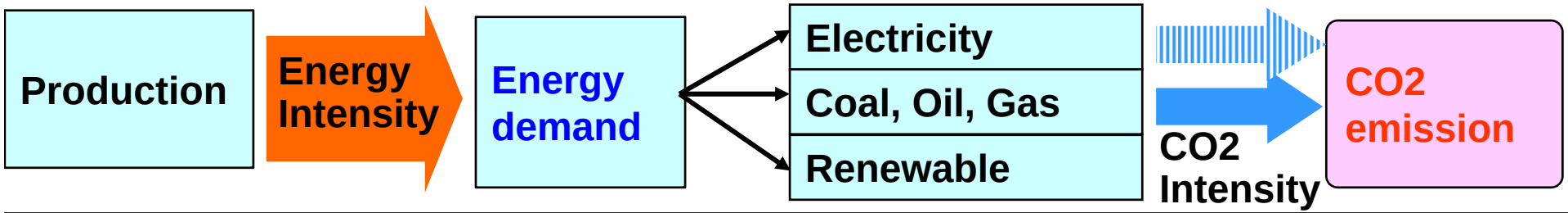
4. Calculate sectoral CO2 emission from energy supply.

- ✓ **i) Low carbon technology and ii) change of energy mix improve CO2 intensity.**



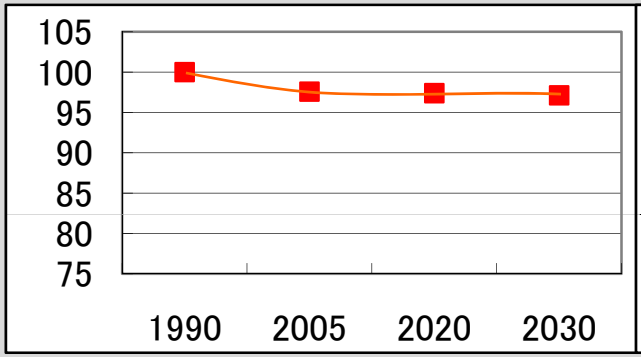
Japan's Case: How to Calculate the Sectoral Emissions

1. **Energy demand is evaluated from the production.**
2. **Introduction of energy efficient technology is considered.**
3. **Introduction of low carbon technology and low carbon fuel mixture are considered.**
4. **CO2 emission from fuel input is directly calculated.**
5. **CO2 emission from electricity is indirectly calculated.**

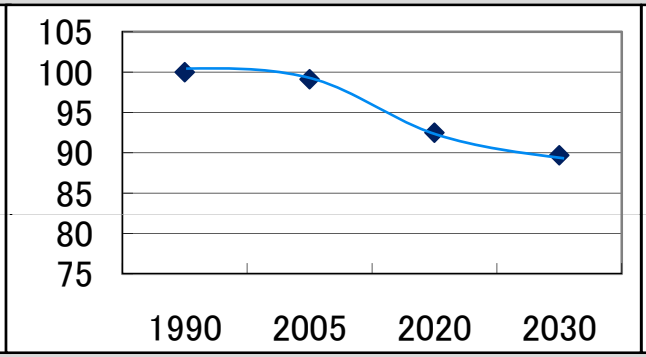


Example: Subsector A

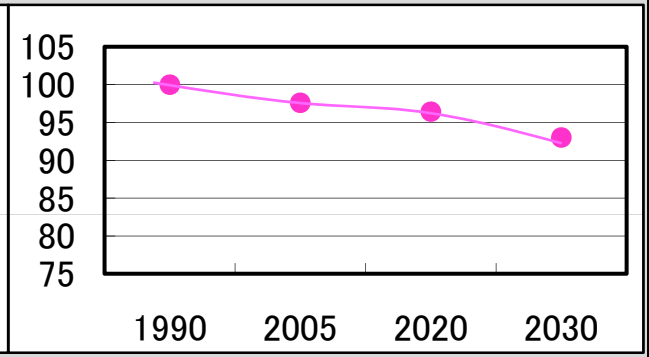
Improve Energy Intensity



Improve CO2 Intensity



Reduce CO2 emission



Japan's Case: Structure of Sectors and CO2 Emission

1. **Basic sectors are constructed by sub-sectors.**
2. **Energy demand and CO2 emission are evaluated by sub-sectoral basis.**
3. **"Power Sector" is separately estimated.**

1. Industry sector

4 Manufacturing Industries **Iron & steel, cement, chemicals, paper & pulp**	energy demand / unit production (ton)
Others	energy demand / million yen (value added)

2. Commercial and Residential sector

Commercial	energy demand / unit floor (m2)
Residential	energy demand / unit household

3. Transportation sector

Passenger transport	energy demand / passenger * km
Cargo transport	energy demand / ton * km

4. Power sector

Questions for Workshop

1. How bottom-up mitigation potential analysis can contribute to setting fair and equitable quantified emission reduction targets for developed countries with ensuring comparability?

2. How cross-border analysis can contribute to Measurable, Reportable and Verifiable actions by developing countries?

Next Step for Discussion on Sectoral Approach

Nov 27-28, 2008: Warsaw

Industrial Ministerial Meeting on Sectoral Cooperation

- Sectoral cooperative activities

March, 2009: Bonn

Workshop on Methodological Issues for Sectoral Approach

- Sectoral activities on indicators and potentials
- Integrating SA into post-2012 framework