Possible MRVable Indicators for Power Sector

Workshop on mitigation potentials, comparability of efforts and sectoral approaches

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A Sectoral Approach for Power Sector should

Consider specificities of the sector;

- ✓ Close linkage between national energy policy and decision-making of individual companies
- ✓ Wide spectrum of technologies – almost zero for renewables including hydro and nuclear power generation to 1,000g/kWh for sub-critical coal-fired generation
- ✓ Heavy dependence on local sources of primary energy

MRVble Indicators & Sectoral Approach in the power sector

What can 'technology-oriented' sectoral approach do ?

- ✓ Secure developing countries' MRVable actions and help enhancing technology cooperation which include sharing best practices and capacity building
- ✓ Provide the technology roadmap, aiming to ensure that each country's policy and measures will take into consideration the technological reality (e.g. cost and maturity of technologies).

Elements for implementation of MRVable actions

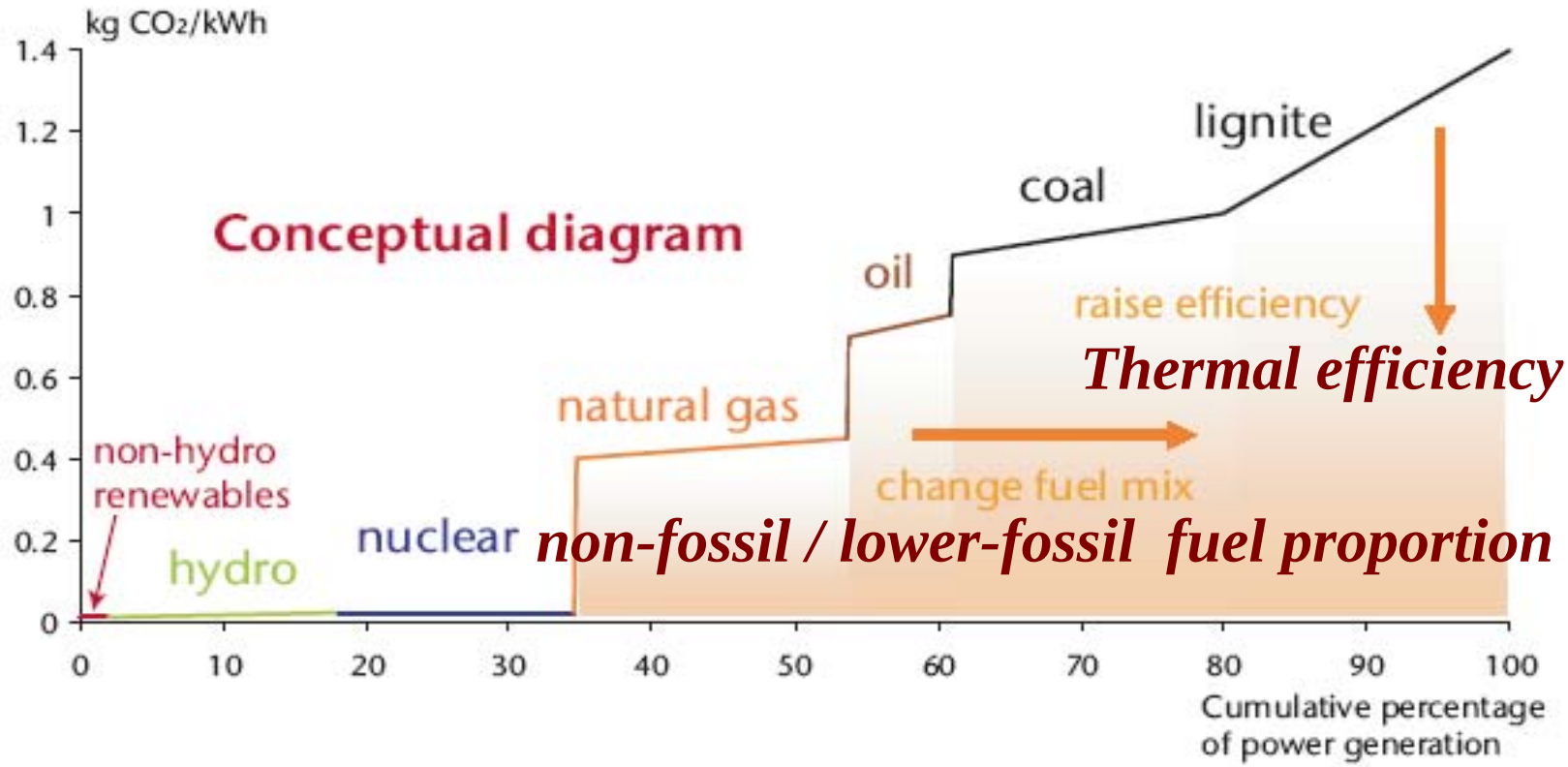
- ✓ To identify appropriate policy and measures in which each technology are evaluated based on actual understanding of technology
- ✓ To encourage data collection whilst improving its quality

Technology Cooperation including sharing best practices and capacity building (e.g. APP)

Technology Roadmap development and provision

Cooperative sectoral approaches in power sector

Options for De-carbonizing



Source : Powering a sustainable future (WBCSD, 2006)

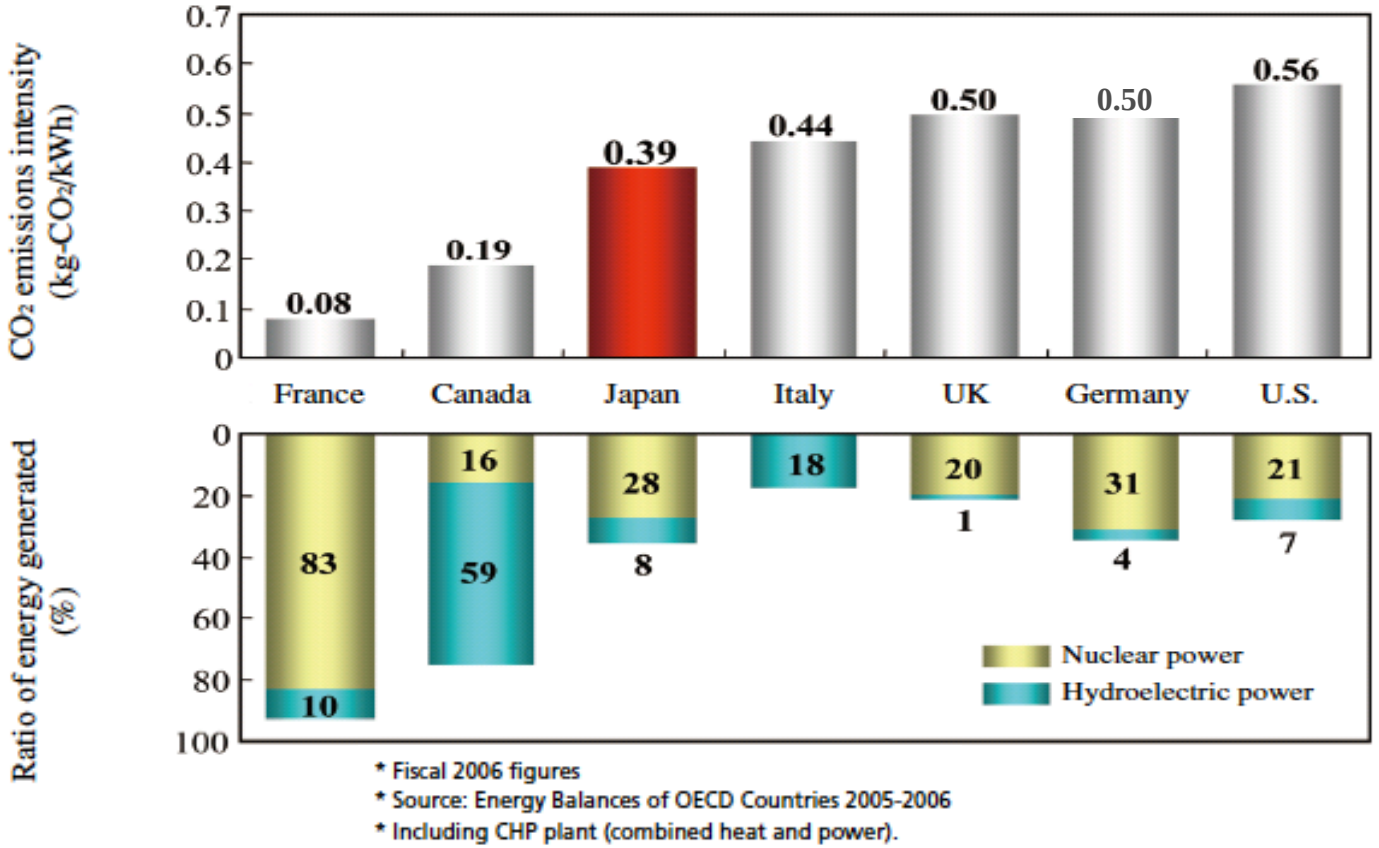
Implication for National Mitigation Actions

De-carbonization in supply side by;

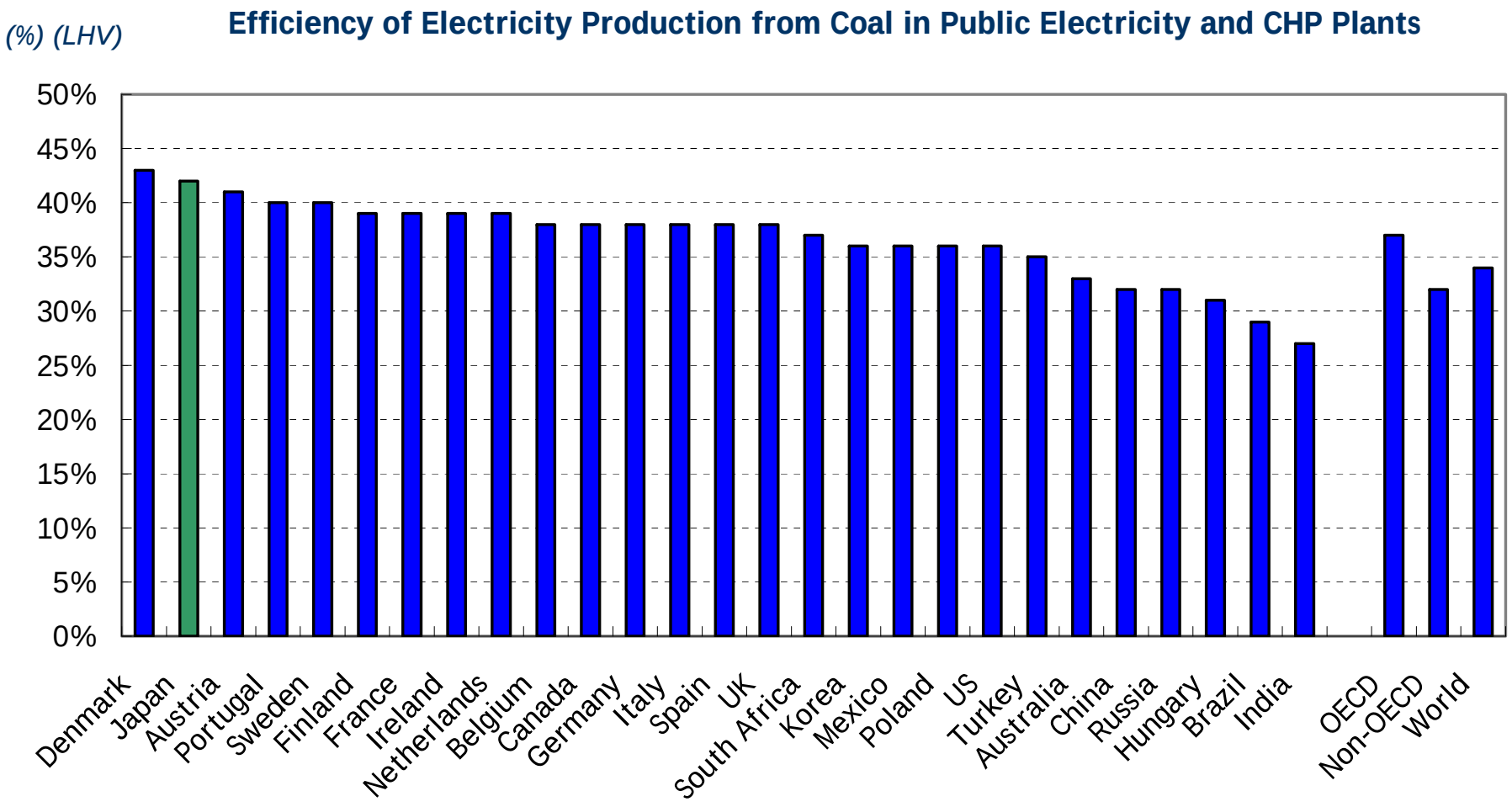
	Measures to be considered	Conceptual indicator	Possible MRVable indicators
Non-fossil fuels	Optimization energy mix -- Nuclear -- Renewables (associated with national energy policy)	Proportion of non-fossil fuel generation	
Fossil fuels	1. O&M improvement (e.g APP peer review) 2. Renovation& Replacement (supported by financial initiatives such as tax credit etc.) 3. BAT installation	Thermal Efficiency	Deviation from designed efficiency Minimum efficiency standard for incoming plant
Others	Capacity building…etc.	Important but it is Not likely to be MRVable…	

Country-by-country Comparison of CO2 Emission Intensity

- *Varies by access to natural resources & energy policy*
- *But, can see how extensive it has been pursued*
- *Indicator of promotion of non-fossil fuel generation*



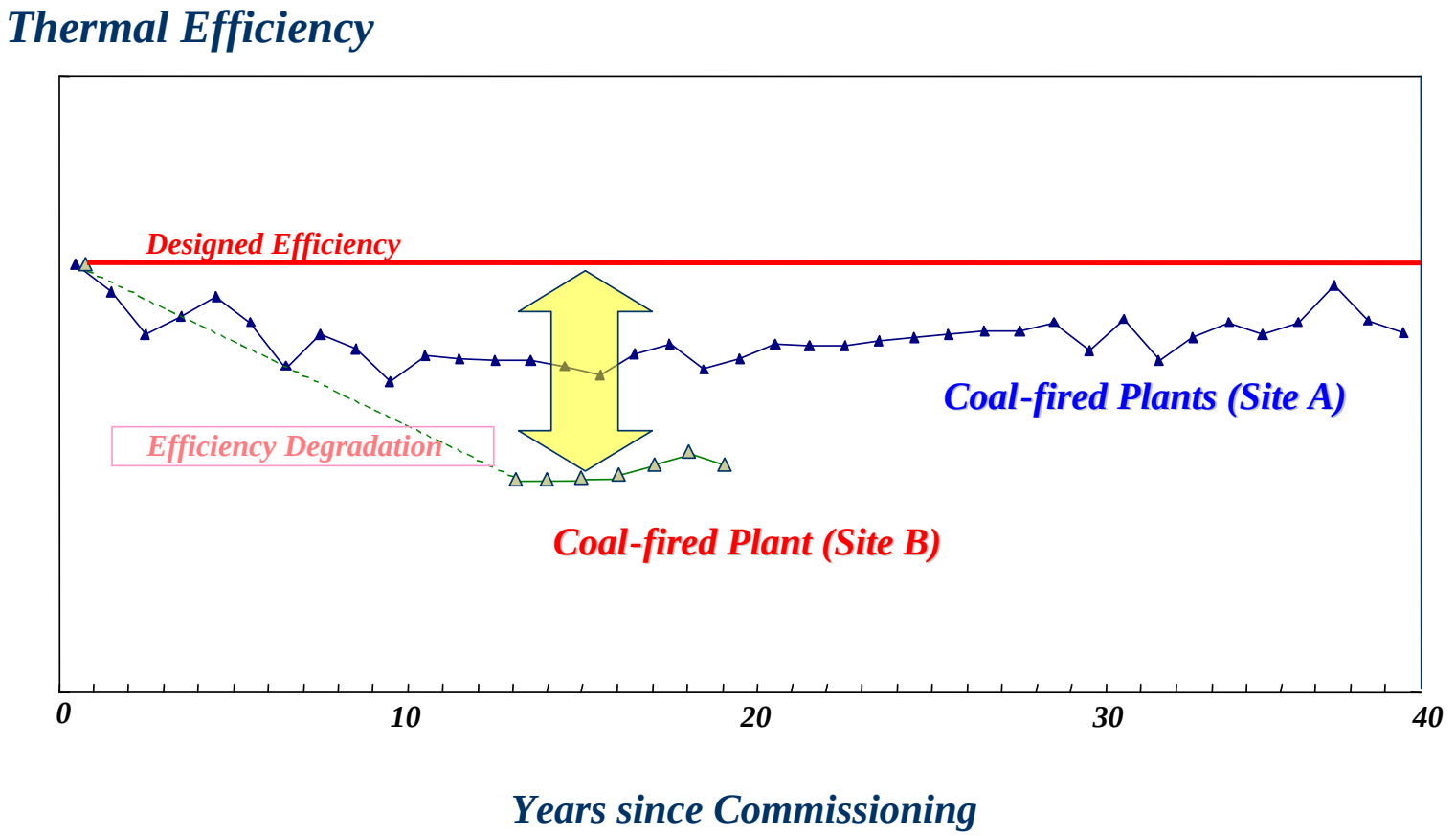
Country-by-country Coal-firing Thermal Efficiency



*Source: Energy Efficiency Indicators for Public Electricity Production from Fossil Fuels (IEA 2008)

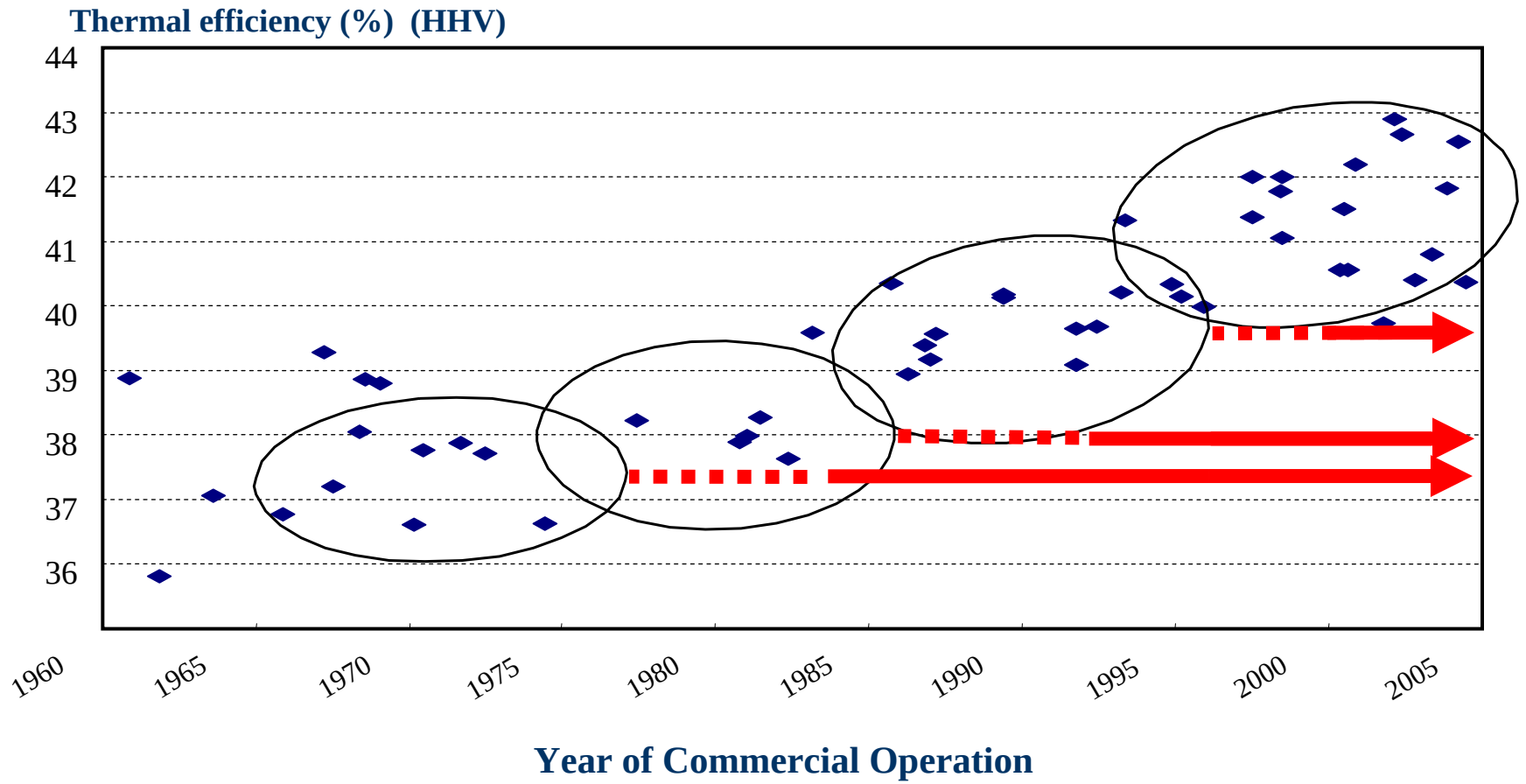
Thermal Efficiency of Existing Plants

- Minimize deviation from designed efficiency



Thermal Efficiency of Incoming Plants

- Minimum efficiency of incoming plants can be considered



Cooperative Actions to Maintain Efficiency under the APP

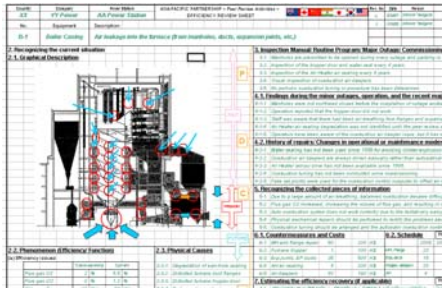
Peer Review Activities for Aged Coal-fired Power Plants

- Trial @US(Nov,2006) <50 participants>
- Japan（April,2007） <50 participants>
- India（Feb,2008） <80 participants>
- US（May,2008） < 80 participants>
- Australia （June,2008） < 50 participants>

'Green Handbook'

Instructions of day-to-day operation and maintenance technologies and practices of coal-fired power plants.

Free of charge



'Check List' and 'Review Sheets'

First used in efficiency improvement proposal in India

Estimate the CO2 reduction potential as 120Ml Ton-CO2/year

(1% recovery in thermal efficiency among all APP Participating countries)

How would the approach work in under the Post-2012 framework?

- ✓ *The APP activities, likened as referential case for developing countries' MRVable actions, are a workable scheme that could be further developed under the post-2012 framework.*
- ✓ *Further enhanced incentives for the private sectors' participation, APP-type public and private partnership should be recognized as an action under the post-2012 framework and as a part of the private sector's contribution appropriately.*
- ✓ *Following are our scope of discussion;*
  - ✓ *a robust MRVable process would be devised for the activities*
  - ✓ *activities taken under the sectoral approaches would be registered and followed up by periodical reporting*
  - ✓ *a platform would be developed for demonstration of the sectoral approaches in a way that it assures independency of sectoral public and private partnership*

Summary

- ✓ *When considering further framework, it is;*
  - *important to enhance the thermal efficiency of power plants and to set a minimum standard for incoming plants globally*
  - *essential to promote country by country effort of optimization of non-fossil fuel generation with an understanding that it may vary in access to country's natural resource.*
- ✓ *Cooperation sectoral approaches as APP will facilitate technology transfer and it should be recognized as an MRVable action under post-2012 framework.*

Nuclear

Renewables

Efficient Thermal

Electrification

CCS

For further information

Asia-Pacific Partnership web-site

http://www.asiapacificpartnership.org/

Federation of Electric Power Companies of Japan (FEPC Japan)

http://www.fepc.or.jp/english/env/app/

---'Checklist' & 'Review Sheets are available.

---Your inputs are welcome for further development.