



2nd International Workshop on Sectoral Emission Reduction Potential
OECD Conference Center Room CC7, Paris
organized by Government of JAPAN

Global Steel Sectoral Approach

NC (Bi-lateral, Nippon-Chugoku),
APP (Seven-lateral, Asia-Pacific Partnership on Clean Development and Climate)
and worldsteel (Further multi-lateral, World Steel Association)

Wednesday 22 October 2008

Teruo OKAZAKI, PhD

*Chair for International Environmental Strategic
Committee*

Japan Iron and Steel Federation

*General Manager, Global Environmental Affairs Department
Nippon Steel Corporation*

1. Overview of Global Steel Sectoral Approach (GSSA)

2. Corporative(cooperative) industrial Action

GSSA : NC(nippon-chugoku), APP and worldsteel

3. Discussion points of “Session 3”

“Cross-border analysis contributing to Measurable, Reportable and Verifiable actions by developing countries”

1) Measurability, Data Collection, Target setting and co-benefits.

2) Enhancing MRV actions (financial mechanism, technology cooperation, sectoral crediting mechanism)

3) Leakage issues

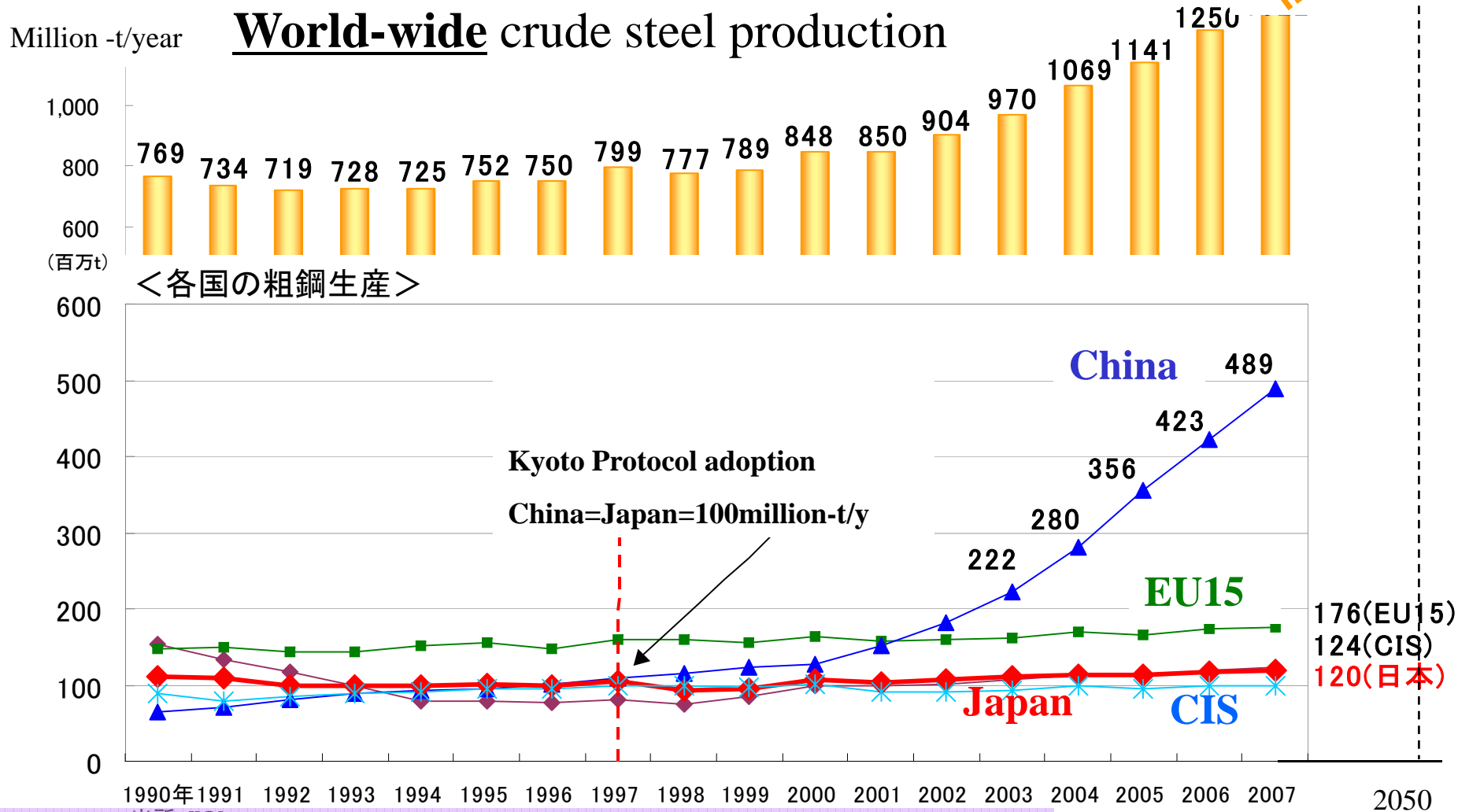
4. Summary



World-wide crude steel production

1. Overview

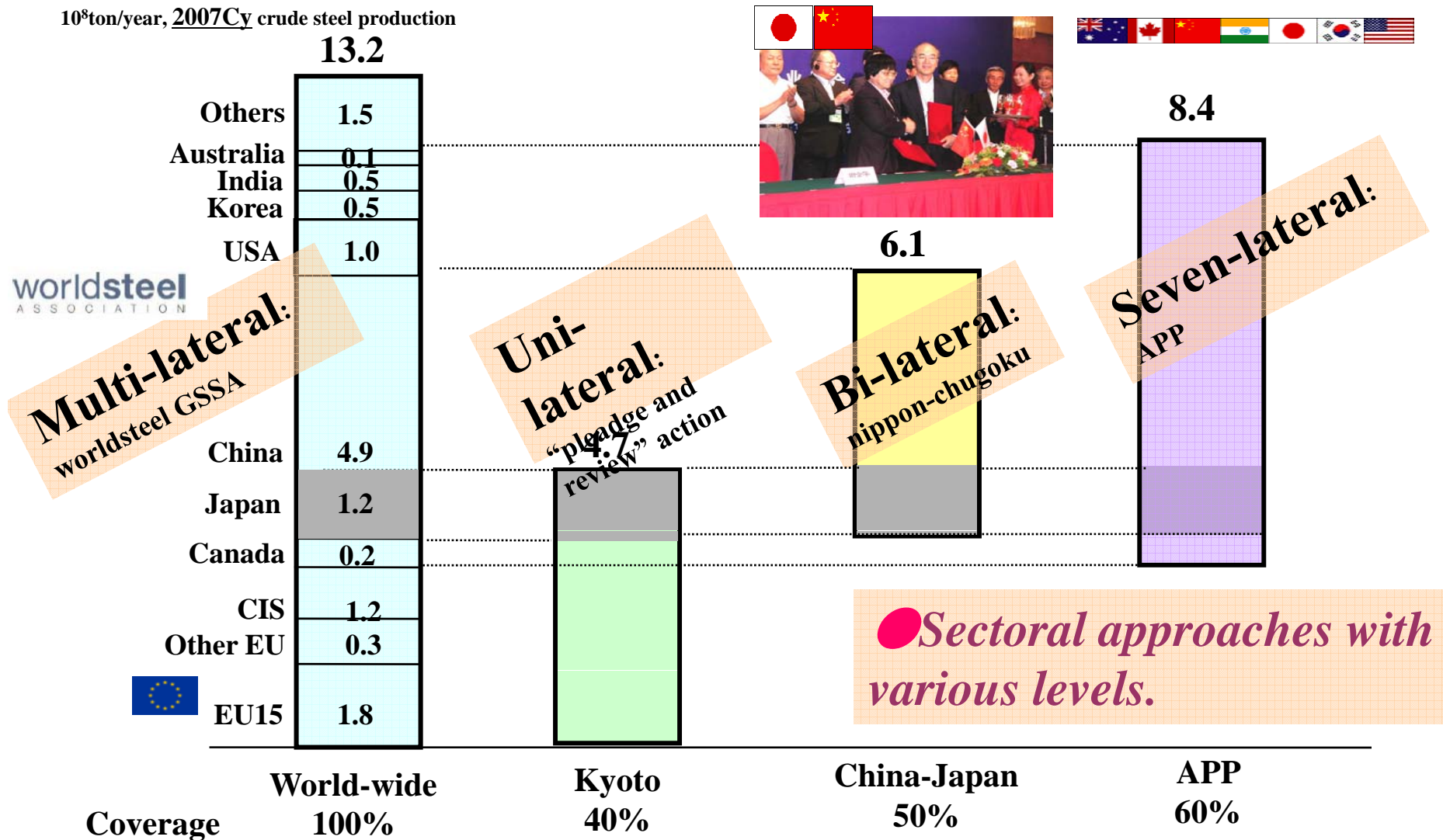
● *Rapid growth in China, last decade almost five times.*



Overview of Steel's Sector-based Approaches

1. Overview

World-wide crude steel production (2007)



Overview of APP

2. GSSA-APP



● *Sectoral approach is ongoing with achieving milestones.*

【Asia-Pacific 7 countries】

Australia, Canada, China, India, Japan, Korea, USA

【Focusing on Energy and SOX/NOX issues】

【Government-Private Partnership with small number of nations】

Characteristics of APP

- **Huge potential for CO2 emissions reduction**
 - APP seven nations CO2 emissions are approx. 60% or a whole world.
- **Technology oriented, sector-based and bottom-up approach**
- **Government-Private collaborations**
 - Non-legally binding
 - Dynamism of private sector and potential for R&D activated

APP Steel TF / Sectoral Approach by S 3- 1) APP-data&target



- APP :High coverage / Over 60% of crude steel production**
- :Technology oriented / Experts of steel industry participates**
- :Government – Private collaboration**

Step	Purpose	Action
General approach	<ul style="list-style-type: none"> ● Share state of the art save energy technology 	<ul style="list-style-type: none"> ● SOACT handbook ● Workshop
	<ul style="list-style-type: none"> ● Review current status 	<ul style="list-style-type: none"> ● Diffusion Survey of SOACT ● Energy intensity Survey by common boundary ● Barrier Survey
Model project approach	<ul style="list-style-type: none"> ● Diagnosis on selected site ● Implement flagship project 	<ul style="list-style-type: none"> ● Energy efficiency survey Potential survey Proposal for improvement ● Flagship project selection
Set milestone	<ul style="list-style-type: none"> ● Set ambitious and realistic milestone 	<ul style="list-style-type: none"> ● Possible milestone Application of SOACT Energy intensity Others

Flagship Project-2

3- 1) APP-data&target



Establish of Common Methodology
to Identity Reduction Potential and Performance Benchmarking

Step-1: Status Review

● *Step-by-step approach for target setting.*

Diffusion rate of technologies

Selection of technologies for survey
from a common data base, SOACT handbook

Intensity benchmarking

A common Methodology
setting for benchmarking

Formula

Boundary

Conversion
Factors

Diffusion Survey

Barriers Survey

Intensity Survey

Step-2: Reduction potential

Step-3: Target setting

7

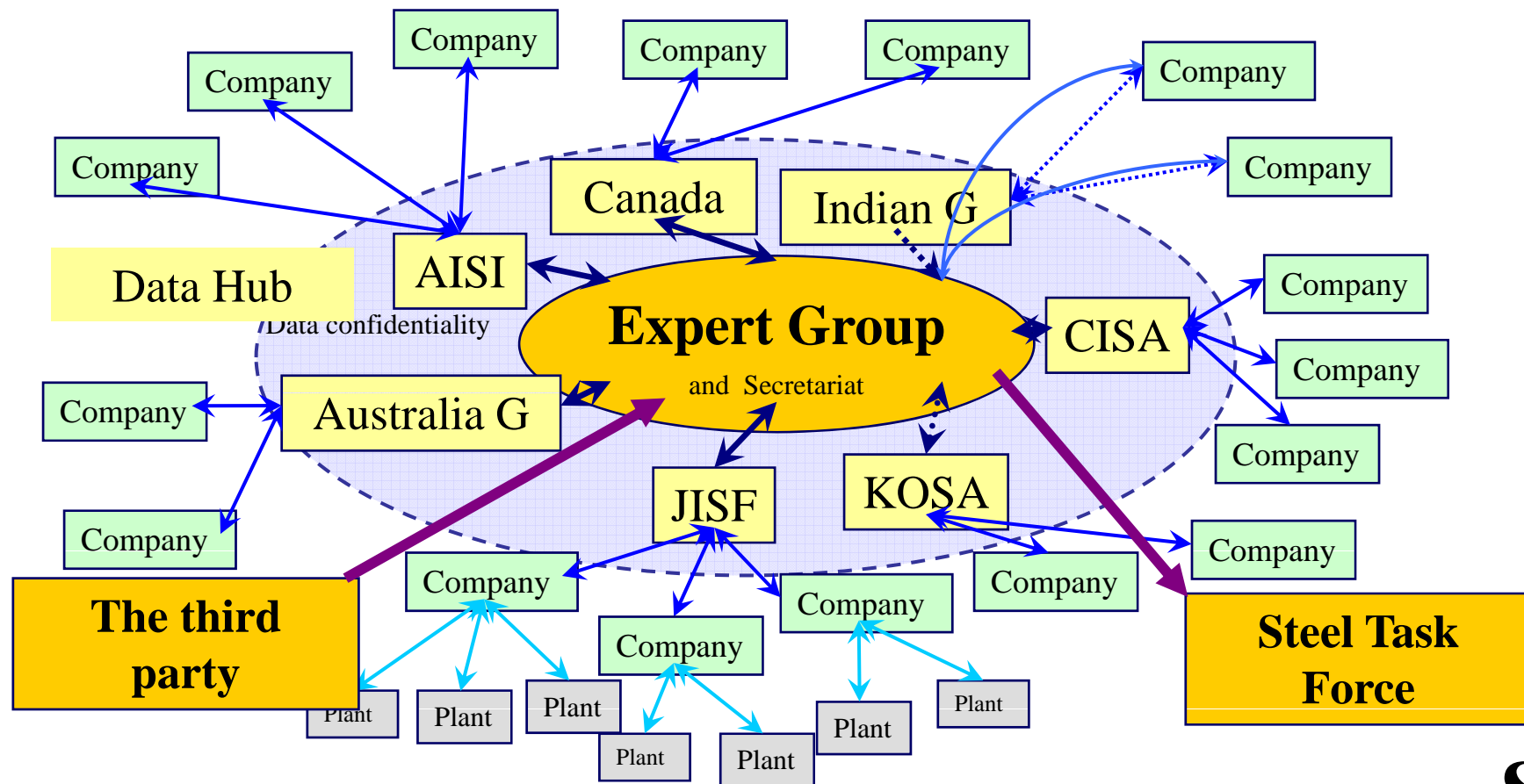
Data Collection

3- 1) APP-data&target

DH & EG for better quality and quantity



● *Data collection with higher coverage and credibility. Data hub and expert group play an important role with confidentiality.*



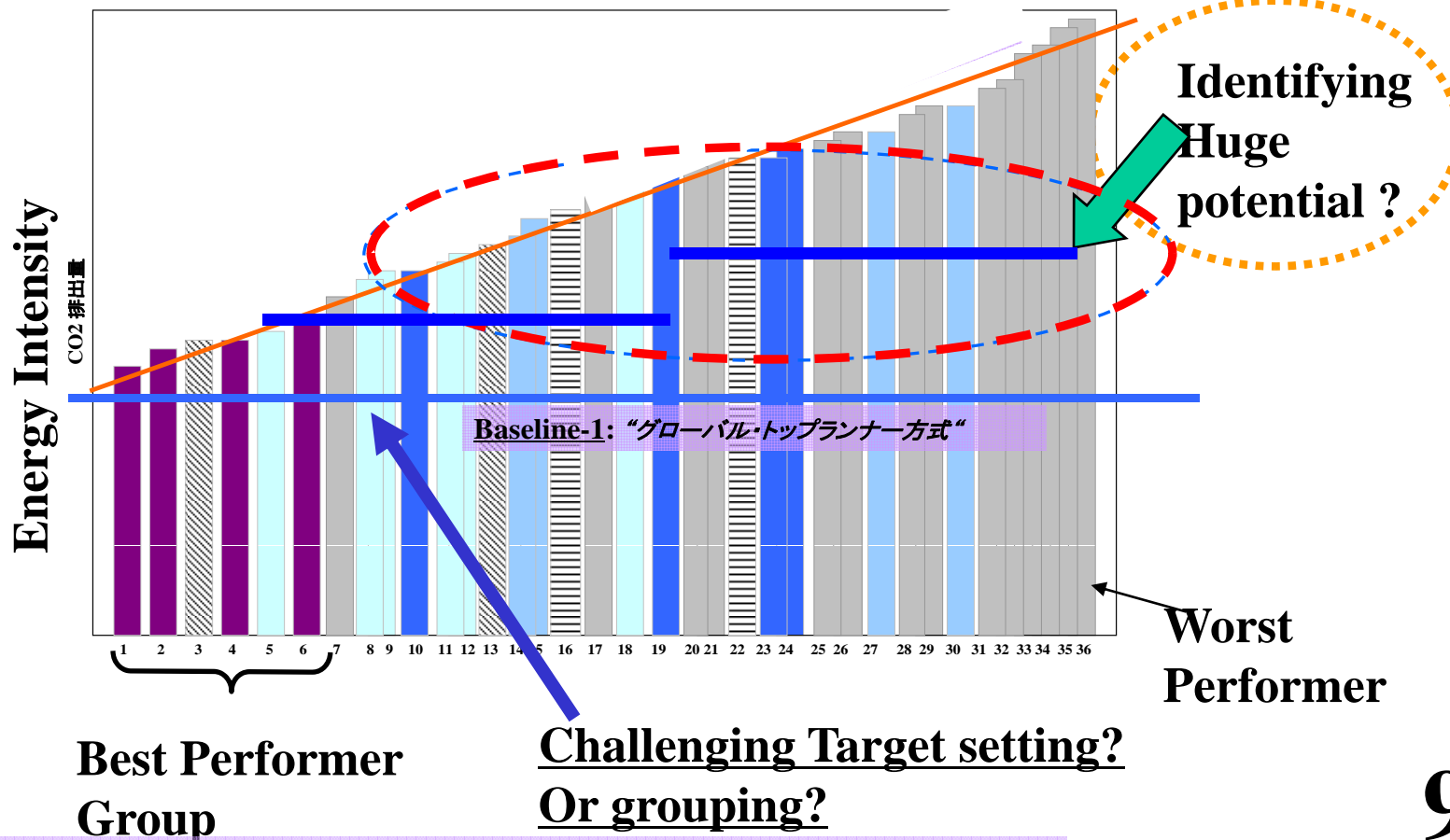
A common methodology

3- 1) APP-data&target

target setting , discussion has just started, to be a main agenda in the 6th Steel Task Force in Beijing.



● Using collected data, target setting will be issue. A common methodology for target setting should be discussed & shared.



CO2 Mitigation in Steel Industry

3- 1) APP-data&target



$$\text{CO2 Emission} = \frac{\text{Energy Consumption}}{\text{Crude Steel Production}} \times \frac{\text{CO2 Emission}}{\text{Energy Consumption}} \times \text{Crude Steel Production}$$

Approach	Improve Energy Intensity	Energy Source Conversion	Steel Consumption
Short, Mid-term	Deploy existing save energy technology (Large Potential)	Change coal to natural gas, charcoal... (Limited Potential)	Increase due to world economy expansion at developing countries in particular
Long term	Develop new technology for reduction process of iron ore	Develop new technology for alternative reducing agent	

Mid-term Target Setting

Conceptual Image for Integrated Steel Plants

(under preliminary discussion by the Expert Group)

3- 1) APP-data&target



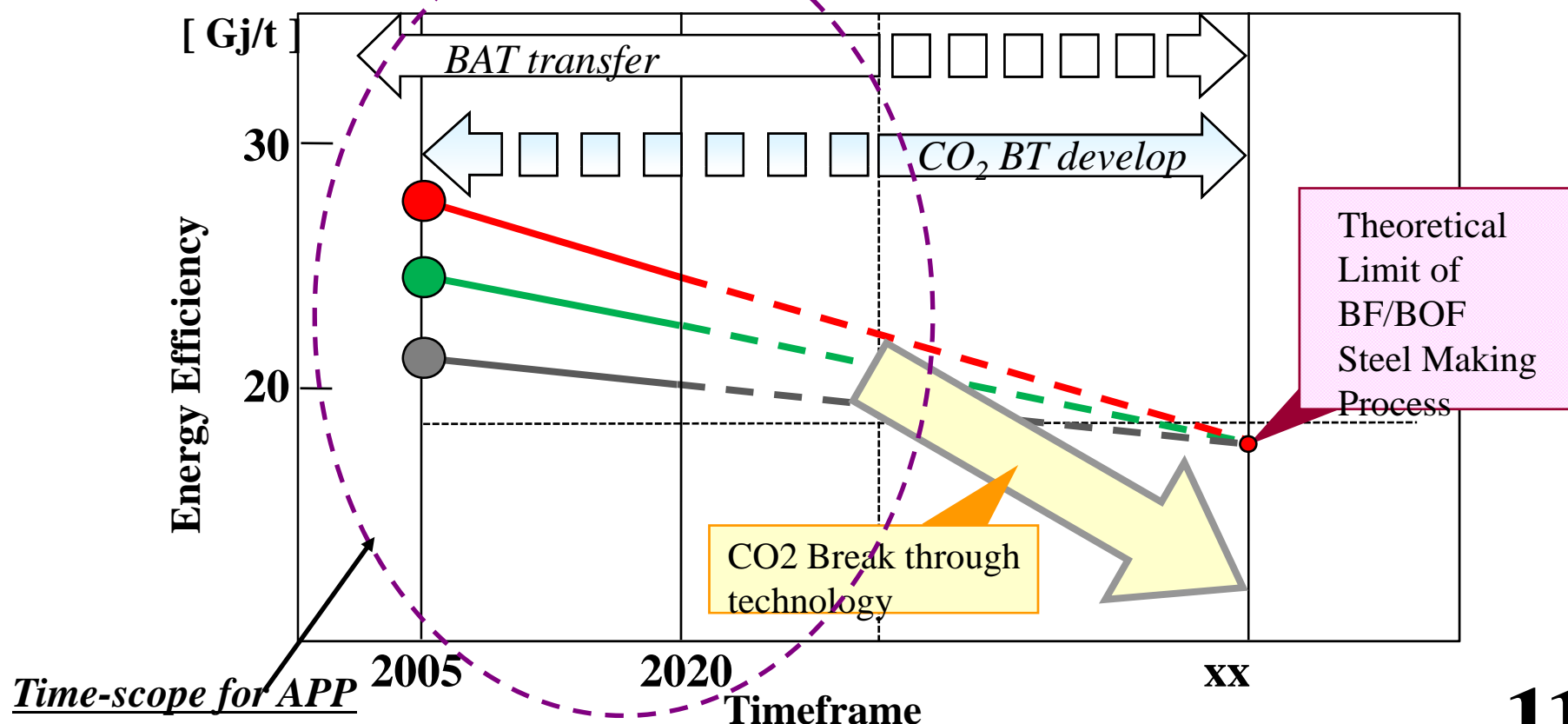
● *A common? for longer-term and differentiated for mid-term?*

◆ Short / Medium-term target

- Deploy existing technology
- Focused to the theoretical limit at the year of xx.
- Different milestone for each producer

◆ Long term target

- CO₂ Break through program



Flagship Project-3

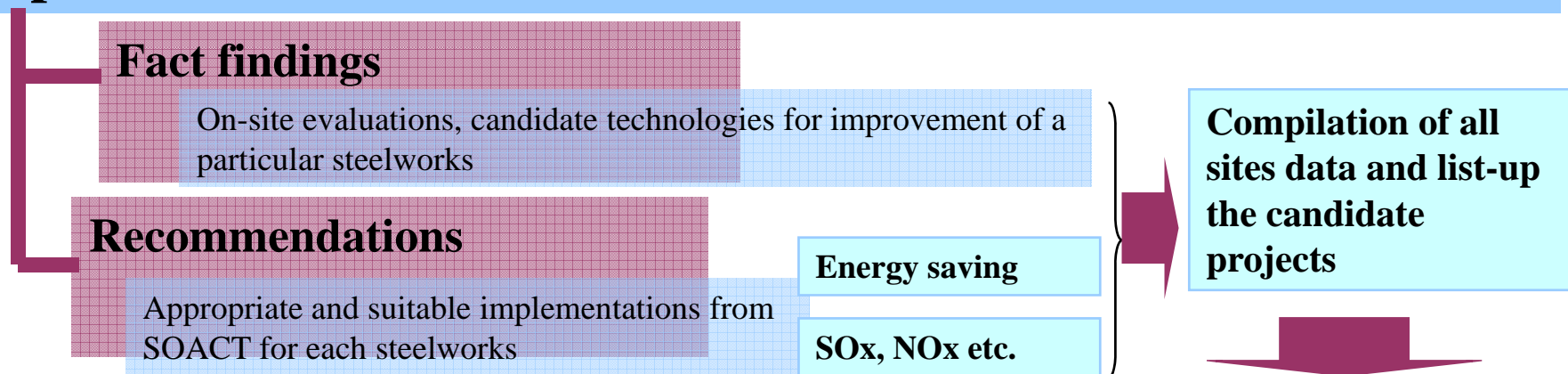
3- 2) APP-cooperation

Technology deployment based on performance diagnosis



● *Another step-by-step approach for acceleration/promotion of technology transfer/diffusion among APP seven nations.*

Step-1: Site visit (Project-4)



Step-2: Prioritization and selection of actual flagship projects using results of site visits

Evaluation and prioritization
of all candidate projects

- Barriers for realization (financial, technological etc.)
- Cost-effectiveness etc.

Step-3: Proposal to the Steel Task Force as actual model projects.

12

Site visit by the experts.

3- 2) APP-cooperation



● So far four site-visits, identifying a set of appropriate technologies for each site and also reduction potential.

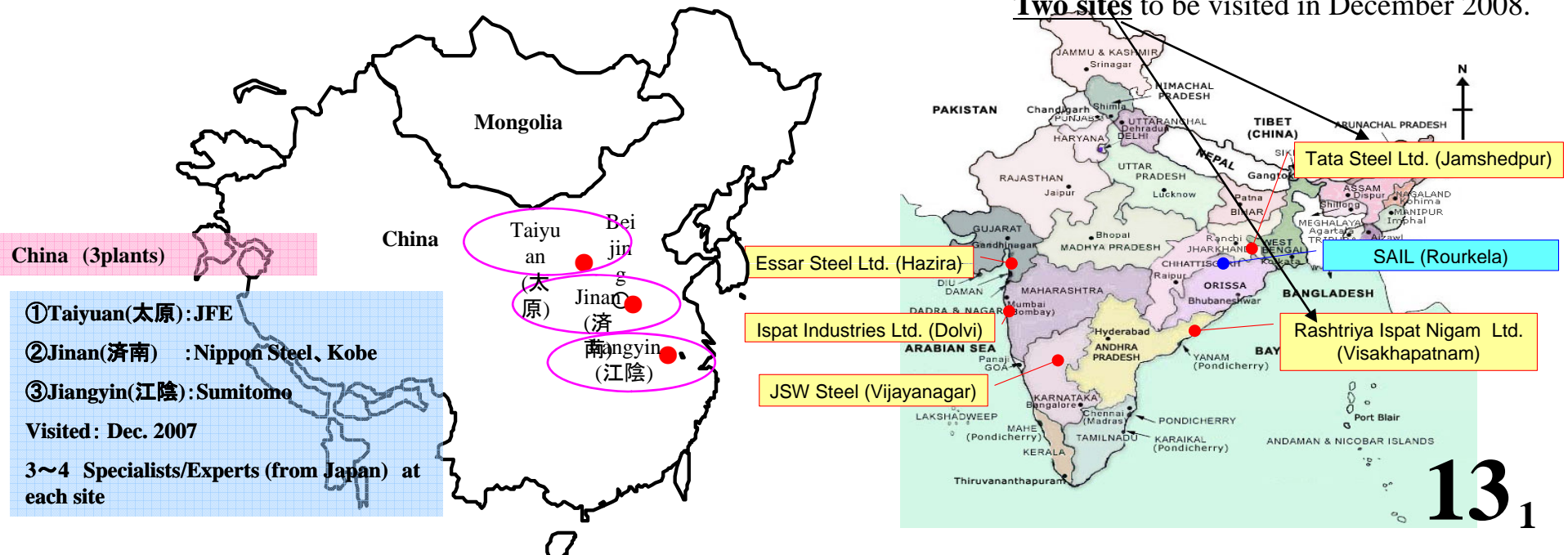
Estimation of CO2 emissions reduction potential as results of sites visit

	Site	Energy saving (TJ/y)	CO2reduction (kt-CO2/y)
China	Taiyuan	-	-
	Jinan	18,544	2,080
	Jiangyin	2,308	279
	China total	20,852	2,359
India	SAIL	9,209	1,019

China: Visited December 2007

India: Visited January 2008

Two sites to be visited in December 2008.



China (3plants)

- ①Taiyuan(太原): JFE
- ②Jinan(济南) :Nippon Steel, Kobe
- ③Jiangyin(江陰): Sumitomo

Visited: Dec. 2007

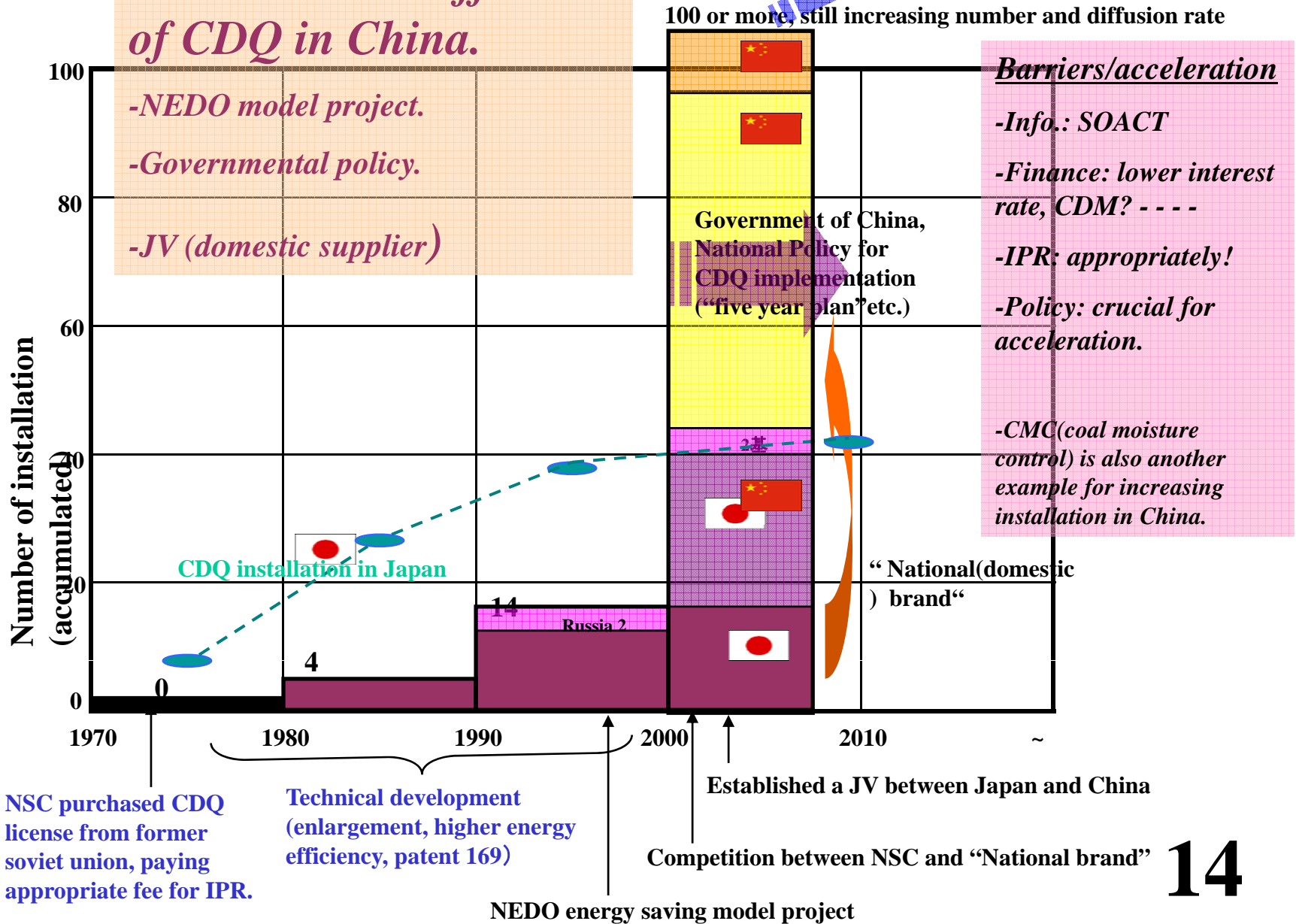
3~4 Specialists/Experts (from Japan) at each site

CDQ* installation in China

*Coke Dry Quenching

3- 2) NC-cooperation

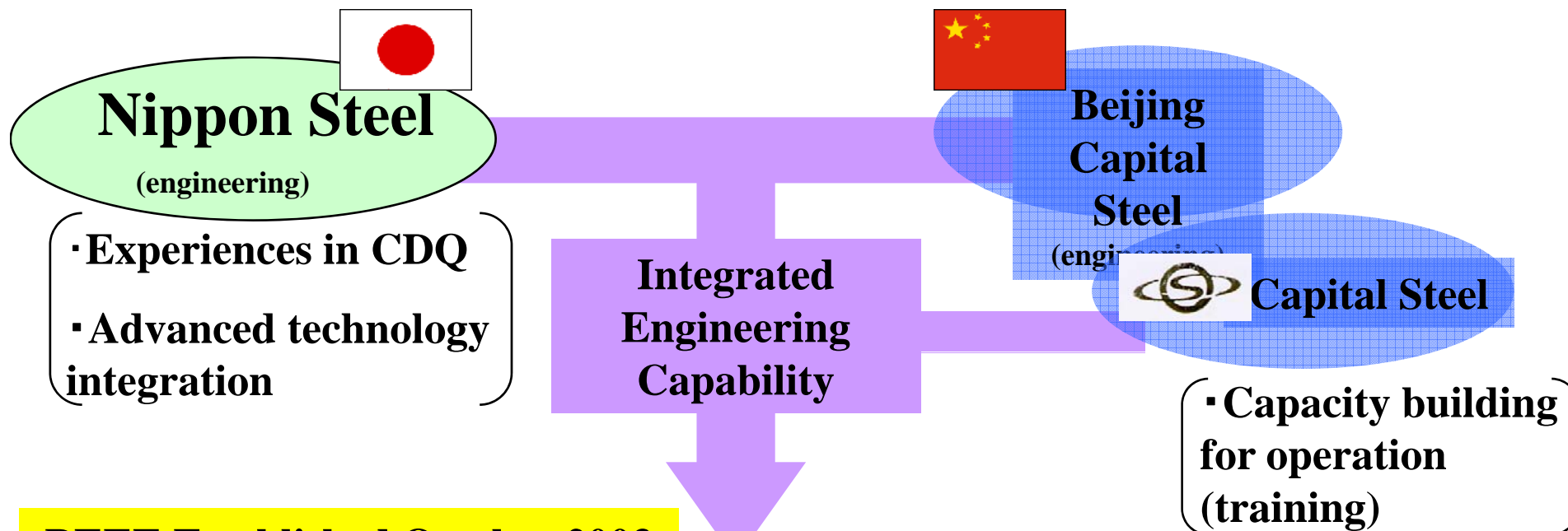
● Accelerated diffusion of CDQ in China.



JV for CDQ in Beijing

3- 2) NC-cooperation

● *JV is one of the factors which have accelerated diffusion.*



BEEE Established October 2003

Beijing JC Energy & Environment Engineering Co.,Ltd

北京中日聯節能環保工程技術有限公司

Objectives:

Accelerating/promoting diffusion of CDQ

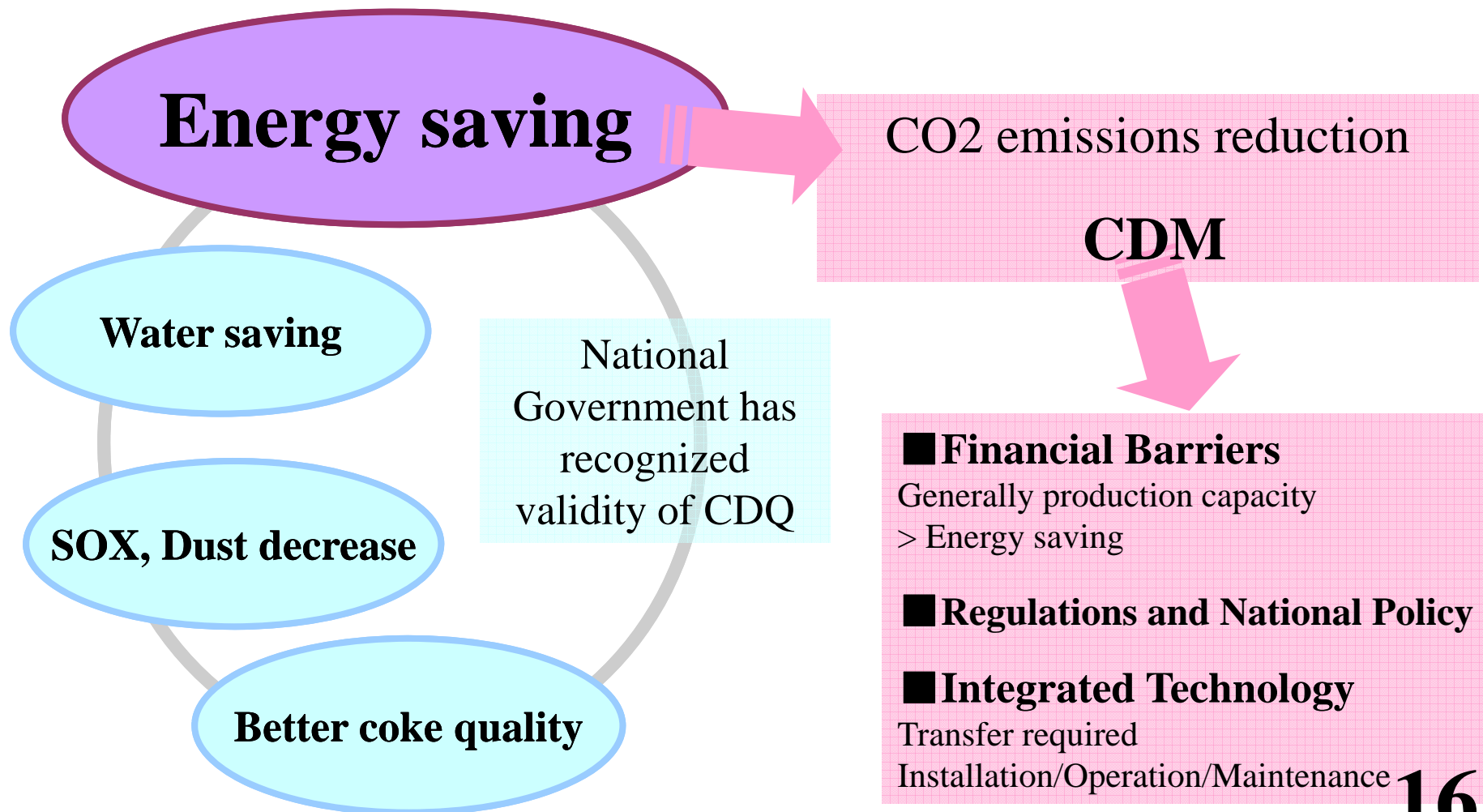
Domestic brand for supplying CDQ

Supplying advanced energy-saving/environmental technologies for steel industry

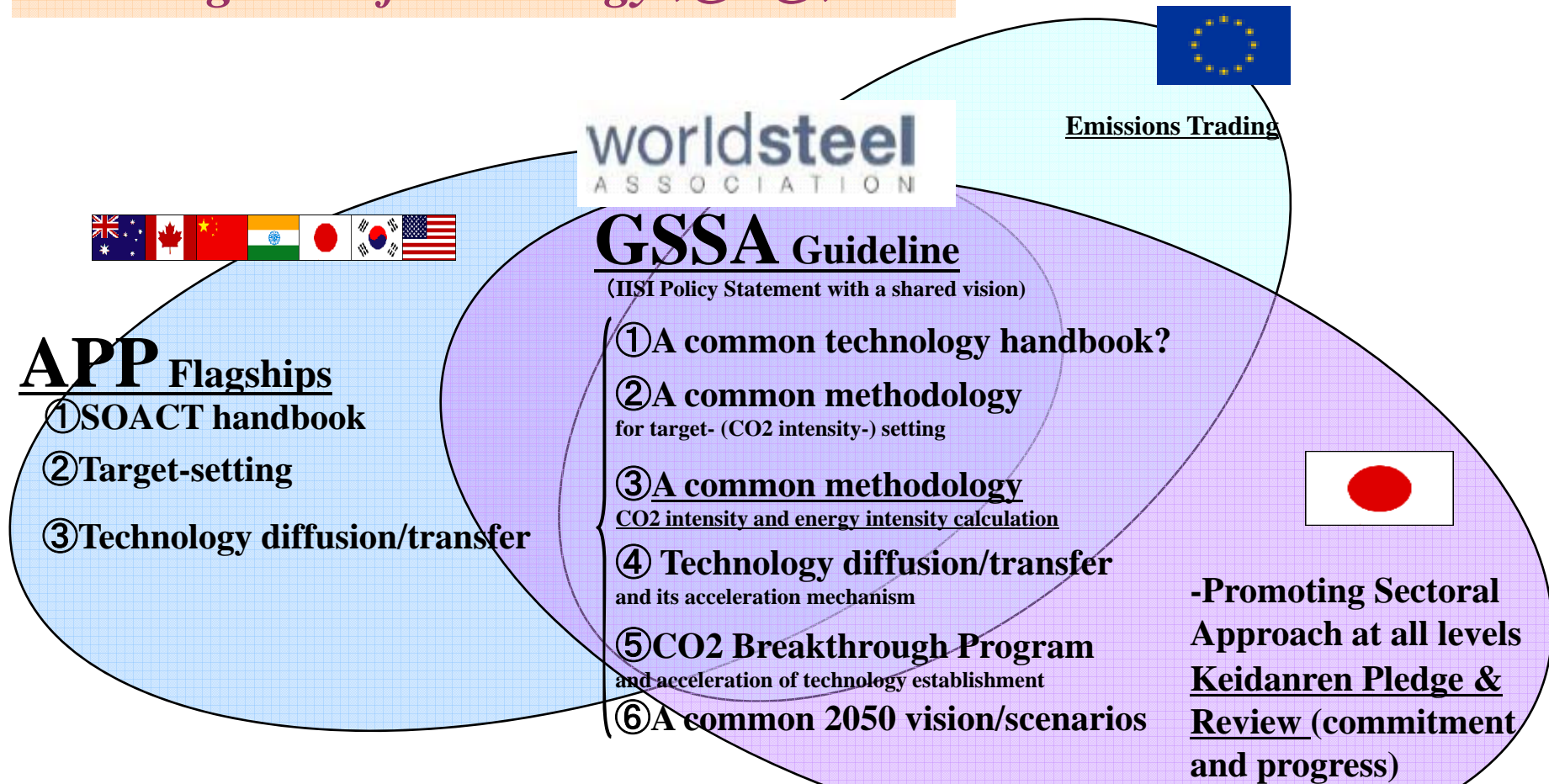
CDQ co-benefits & barriers



● *CDQ has co-benefits (water, SOX, dust and quality etc.).*



● Four commons (①·②·③·⑥) and two categories of technology (④·⑤).



● World-wide Comparable Efforts ⇒ Establishing a global level playing field

- *Global Solution required.*

Global issue requires a globally coordinated solution.

- *Technologies required.*

Supplying steel for the globally increasing demand with minimized CO2 emissions worldwide.

- *Diffusion of Best Efficient Technologies*

- *Development of Breakthrough Technologies*

*Thank you for your
kind attention!*

Are there limits to **adaptation**?

Dutch cow ready for sea level rise?

Europe-Asia Dialogue on Climate Challenge of the 21st Century

The Finnish Parliament Group for Global Issues

Helsinki, 8th September 2006

Dr. Ottmar Edenhofer / Kai Lessmann

