

EPRI | ELECTRIC POWER
RESEARCH INSTITUTE



**10th Annual Workshop on
Greenhouse Gas Emission Trading
Session 6 – CO2 project accounting and verification in a Copenhagen
20 – 21 September 2010
IEA Headquarters, 9 Rue de la Fédération, 75015 Paris, France**

GREEN and J-MRV

~ Public Private Financial Partnership ~

**Takashi Hongo
Special Advisor and Head of
Environment Finance Engineering Department
Japan Bank for International Cooperation**

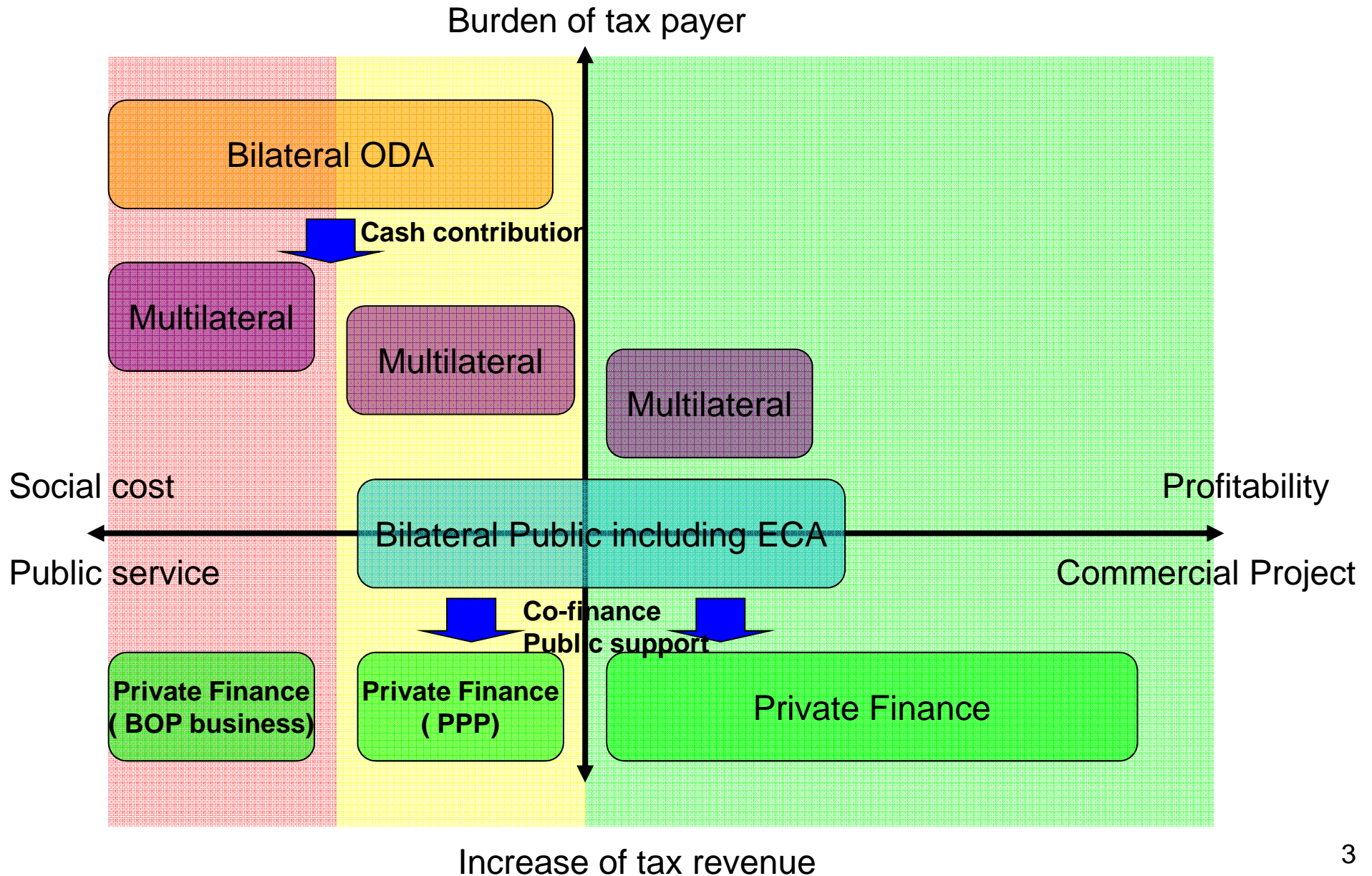
Climate Finance

~ Back Ground of GREEN + J-MRV ~

Copenhagen Accord

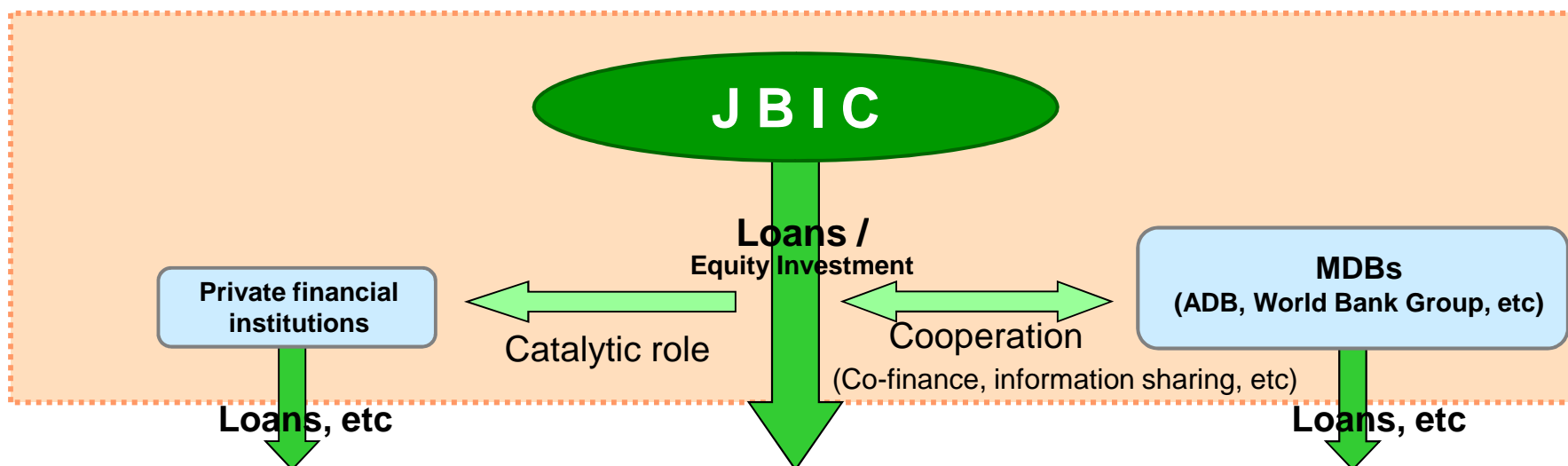
- Increase in global temperature below 2 degrees
- Emissions targets of Annex I Parties for 2020 are to be submitted by 31 January 2010.
- Nationally appropriate mitigation actions (NAMAs) by Non-Annex I Parties are to be communicated every two years. NAMAs seeking international support are to be recorded in a registry.
- Crucial role of REDD-plus
- Additional funding to developing countries:
 - USD 30 billion (2010-2012)
 - Mobilizing USD 100 billion a year by 2020 (public & private, bilateral & multilateral)
 - Copenhagen Green Climate Fund
- Technology Mechanism to accelerate technology development and transfer
- Assessment of the implementation of this Accord is to be completed by 2015.

Types of funding source



“LIFE” (Leading Investment to Future Environment) Initiative by JBIC

- LIFE will ...
 - support both public and private sectors,
 - cooperate with multilateral development banks (MDBs) and mobilize private financing.
- JBIC’s financial support under the Initiative will be around **5 billion USD for the next 2 years.**



Four main targeted sectors of the Initiative are ...

- **Clean power generation**
 - Solar, geothermal, wind power, clean coal power plant, etc
- **Energy efficiency improvement**
 - Upgrading of existing transmissions and distributions, modernization and heat recovery of steel furnaces and cement kilns, ESCO (energy service companies), etc.
- **Water**
 - Water purification and supply, sewage system, wastewater treatment, desalination and water processing, etc
- **Urban transportation**
 - Modal shift in densely populated areas, etc

Projects Financed by LIFE

No.	Country/ Region	Project	Month/Year
1	India	High Energy-Efficient Boiler Manufacturing Project (for Coal-Fired Plant)	Jul. 2009
2	UAE	IWPP Project	Oct. 2009
3	India	High Energy-Efficient Boiler Manufacturing Project (for Coal-Fired Plant)	Oct. 2009
4	Asia	Fund Focusing on Efficient Energy and the Environment Sector	Oct. 2009
5	Asia	Infrastructure Fund Focusing on Emerging Asian Countries	Dec. 2009
6	Kazakhstan	Export Loan for Thermal Power Generation Equipment Utilizing Gas Generated by the Oil Field	Dec. 2009
7	Korea	Export Loan for By-product Gas-fired Combined Cycle Power Generation Equipment for Iron & Steel Plant	Jan. 2010
8	UAE	Fund Focusing on Climate Change Investment Universe	Jan. 2010
9	Indonesia	Thermal Power Plant Expansion Project	Mar. 2010
10	Indonesia	Thermal Power Plant Project	Mar. 2010
11	Mexico	Thermal Power Plant Project	Mar. 2010
12	Maldives	Water Supply and Sewerage System Operation Project	Mar. 2010

Total amount of financing by LIFE including private funding as co-financing is USD 5.4 billion as of 31 March, 2010.

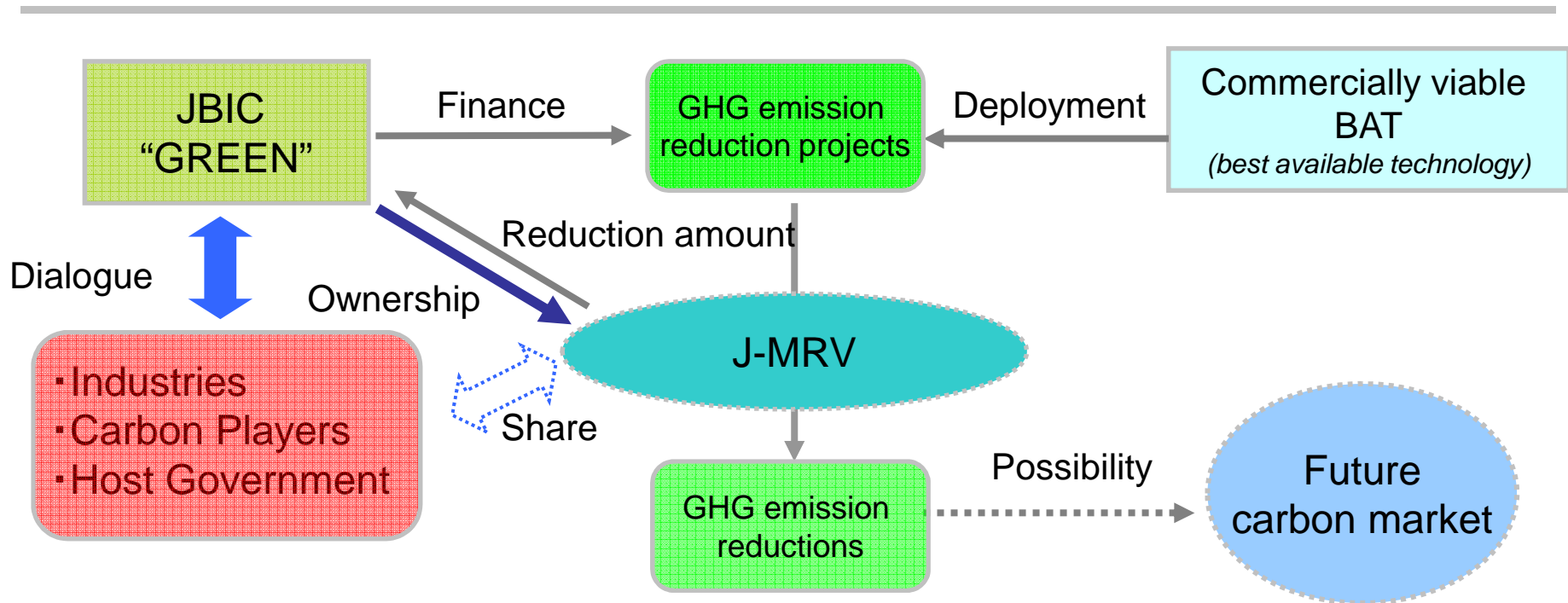
New Financial Program (GREEN) and J-MRV

(Global action for reconciling economic growth and environmental preservation)

JBIC will review the followings

1. Climate change policy of the host country
2. Technology to be used
3. Reduction amount by J-MRV

J-MRV
JBIC establishes a guideline for quantifying GHG emission reduction amounts.
It was designed “simple, practical and internationally acceptable” guideline



(MRV: Measurement, reporting and verification)

Committee for establishing J-MRV

1. Members :

<External Experts>

Ryuji Matsuhashi The University of Tokyo (Chairman)

Tsuyoshi Nakao Environmental Resources Management ERM Japan Ltd.

Tomohiko Ike E&E Solutions Inc.

Hiroki Kudo The Institute of Energy Economics, Japan

Kuniyuki Nishimura Mitsubishi Research Institute, Inc.

Kazuhito Yamada Pacific Consultants Co., Ltd.

<JBIC>

Environment Finance Engineering Department

2. Period

Feb. 2010 ~ May 2010

3. Consultation



J-MRV Seminar in Cologne, May 2010

Goal of J-MRV

1. Goal

JBIC intends to:

- **Establish simple, practical and internationally acceptable framework of MRV to promote international projects reconciling GHG reduction and economic development.**
- **accelerate low carbon investment through measurement of GHG reductions by the projects.**
- **implement necessary steps quickly to fit for actual investment.**

2. Contents

- **J-MRV shows a guiding principle including representative methodologies and its procedures.**
- **Methodologies is attached as an annex and new methodologies will be successively added.**

3. Advisory Committee

- **Independent from JBIC.**
- **Experts on energy or methodology on CDM, ISO and others.**
- **Provide third party and professional opinions to JBIC.**

Baseline Emission and Reduction amounts

Principle :

- **Simple, practical and internationally acceptable**
- **Based on the decision making process of the investment**

Baseline amounts = Emissions in the case without investment

Reduction amounts = Baseline emissions - Emissions from projects

Option

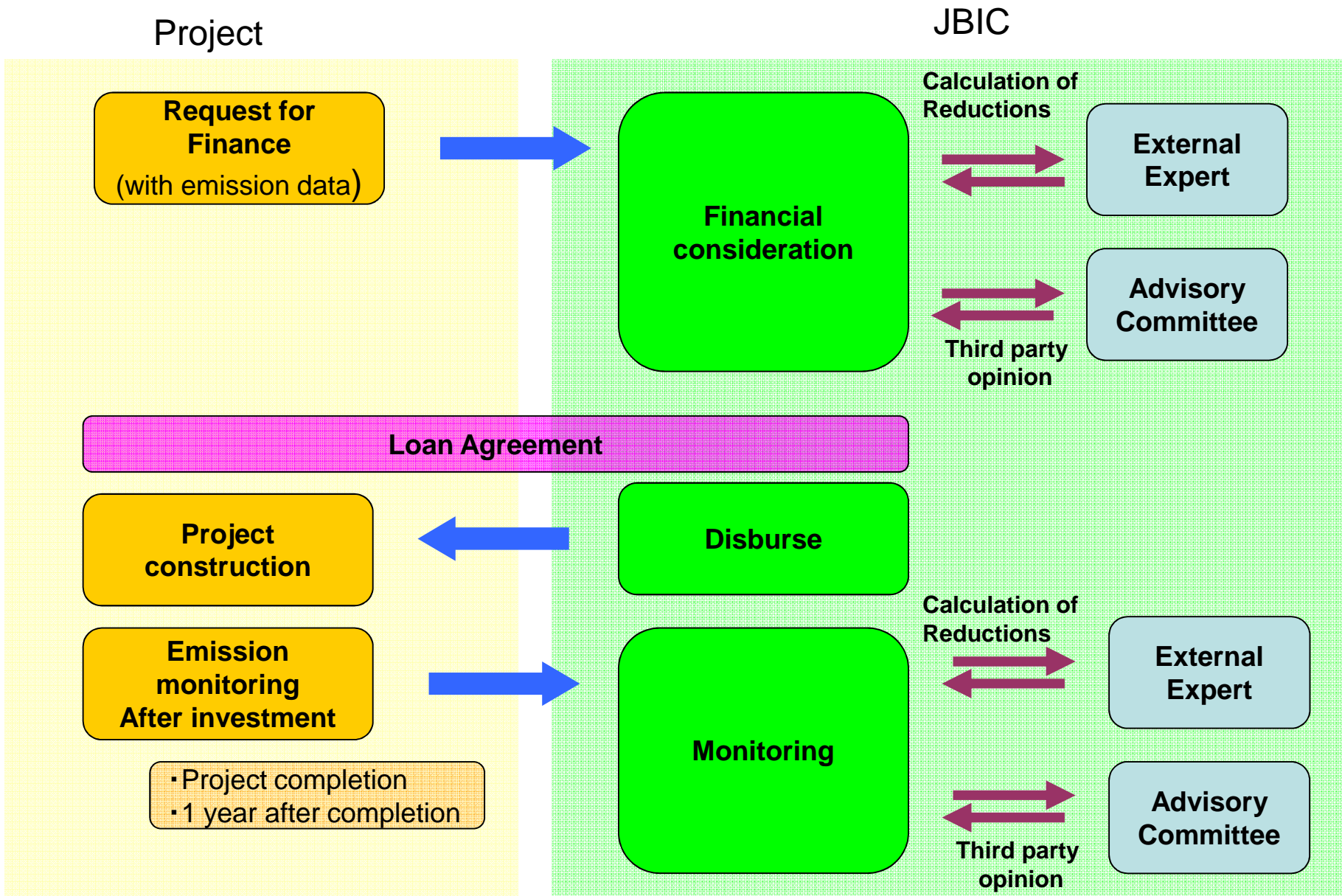
- **Actual emissions before investment, taking account of operation rate (Rehabilitation)**
- **Emissions from similar installations in operation in the country or in the region**
- **Emissions from similar installations recently invested in the country or in the region**

Taking account of

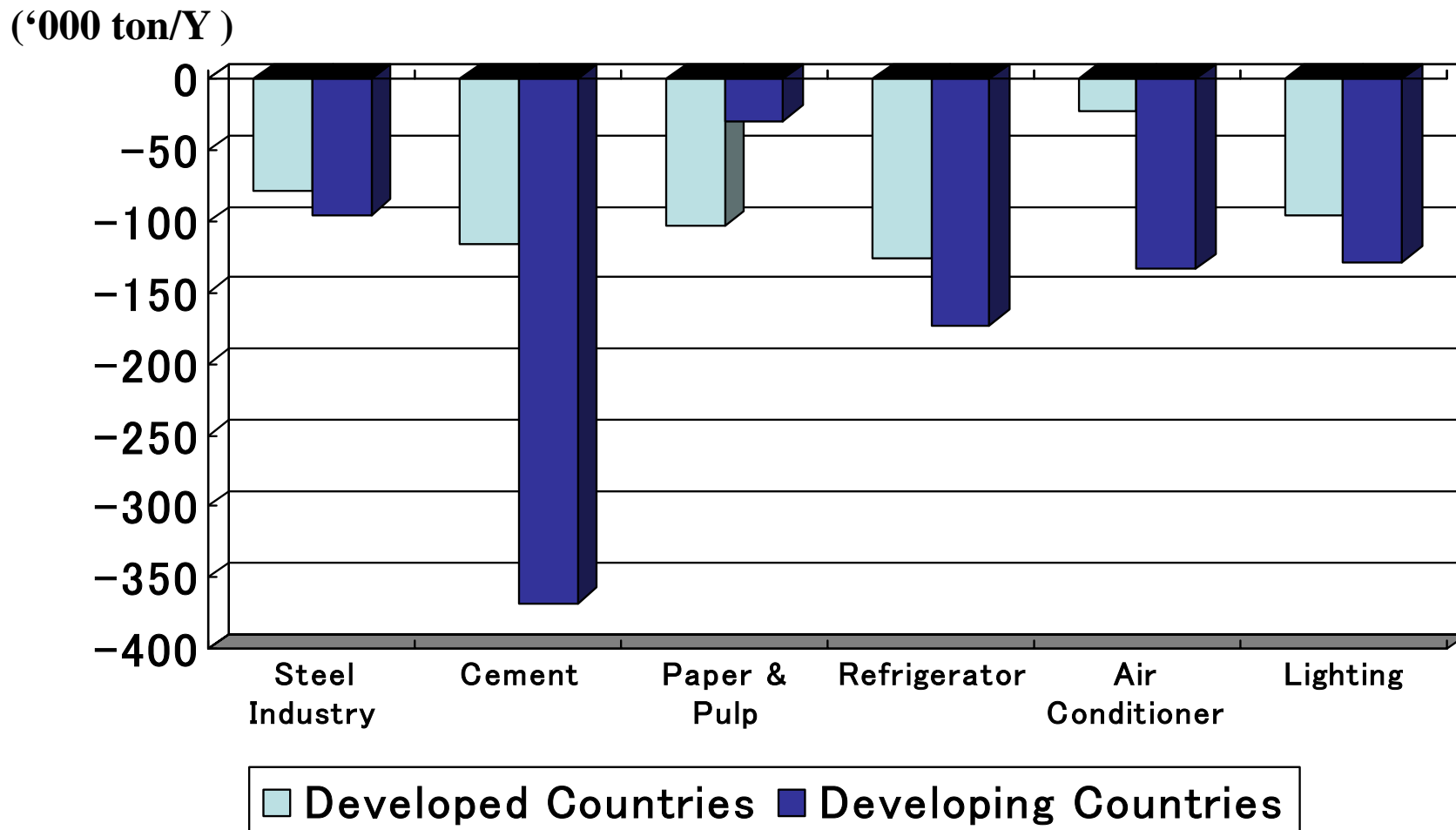
- **investment climate such as economy, energy, technology, regulation.**
- **availability and reliability of data**

Sampling and theoretical value may be applicable

Procedure of GREEN and J-MRV



Potential of CO2 emission reduction by technologies

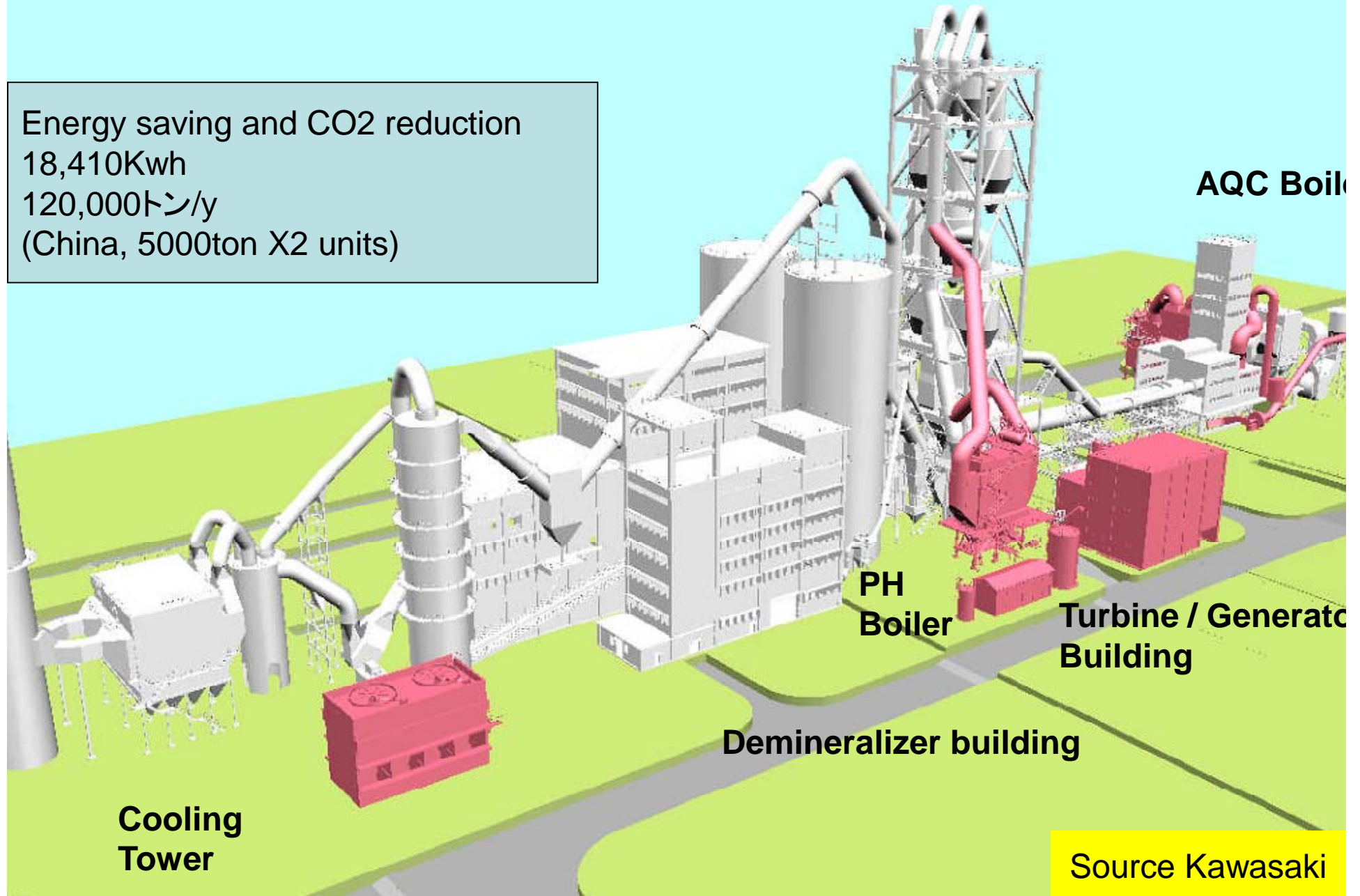


Source: IEEJ

CO₂ emission reduction potential by using Japanese BAT

Heat Recovery System of cement production facility

Energy saving and CO2 reduction
18,410Kwh
120,000トン/y
(China, 5000ton X2 units)



Source Kawasaki

J-MRV is at “Learning by doing stage”

We welcome comments and partners

Bilateral Credit

Bilateral Scheme : F/S Support Program

	Project types	Project site
METI	Advanced Coal Fired Power	Indonesia, Viet Nam, India
	Geothermal Power	Indonesia, Philippine
	Transmission Improvement	Viet Nam
	Energy Intensity Industry (Steel, Cement)	Philippine, India, Lao
	Energy management of industry	Indonesia, Thailand
	REDD+	Peru, Indonesia
	Eco Drive, Eco House	Thailand , China
MOE	Waste Management	Thailand
	Peat Fire Management	Indonesia
	Modal Shift	Lao

Bilateral Scheme : “J-MRV and GREEN” and F/S Support Program

Project Cycle



F/S Support Program

Standardized MRV

Finance (GREEN, LIFE)

J-MRV

Bilateral Agreement

Management Capacity

International acceptance

“Demand”

Public-Private Financial Partnership

Capacity of Our Planet

Change of Lifestyle

Use of Technology

Better investment climate, More investment

Public Sector

(Improvement of investment climate)

Private Sector
(Driving force)

Financial Sector
(Push last one mile)