Consideration of Emissions Trading Scheme in Japan

April 2012

Office of Market Mechanisms
Ministry of the Environment, JAPAN

Domestic Emissions Trading Scheme in Japan

■ It ensures efforts of covered entities to reduce emission by setting the upper limit on GHG emissions (caps) under fair and transparent rules.

- It ensures steady implementation of emission reduction by setting an emission allowance (a limit on the total amount of GHG emissions: a cap) for each entity.
- It formulates fair and transparent rules that reward those who make efforts to reduce their emission in the mid- and long-term.

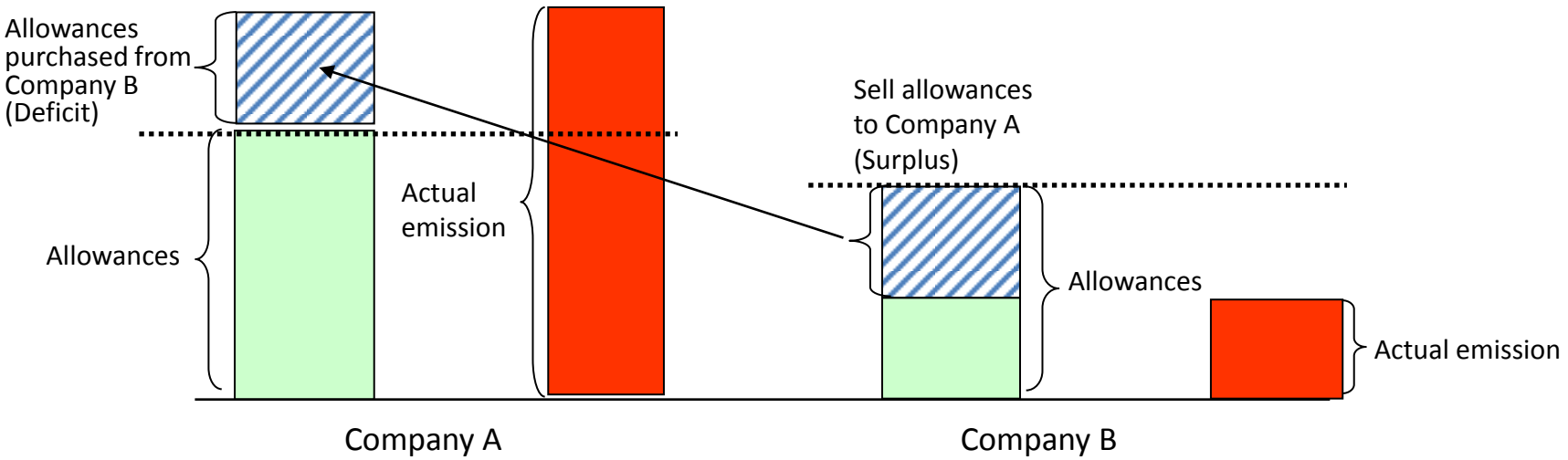
■ It enables flexible fulfillment of obligations for covered entities by allowing them to trade emission allowances.

- It increases variety and flexibility of compliance by allowing covered entities to trade emission allowances as a means of compliance, as well as reducing their own emission with any appropriate methods.
- Trade of emission allowances enables covered entities to react to changes in activity levels reflecting economic trends and/or other factors.

■ It accelerates cost-effective emission reduction by pricing carbon

- It induces efficient selections of lower cost reduction efforts, which leads efficient emissions reduction in society as a whole.
- It Increases demand for more efficient technologies to reduce emissions and for low-carbon products, which stimulates development of low-carbon technologies and products.

<Image of setting and trading allowances>



Consideration of Emissions Trading Scheme in Japan

<2005->

Japan Voluntary Emission Trading Scheme (JVETS) by Ministry of the Environment (Apr 2005-)
- Aims at the accumulation of knowledge and experience in Cap and Trade and voluntary GHG reduction.
- Currently operating phases 6-7. So far 389 companies participated with reduction targets.

<2008->

Advisory Committee on the Emissions Trading Scheme, MOE (Jan 2008-)
- Published an interim report in May 2008, with discussion points and four scheme options for cap and trade.

Experimental Introduction of an Integrated Domestic Market for Emissions Trading, GOJ (Oct 2008-)
- Started by the previous government to achieve the Kyoto Target, without intention to introduce a mandatory system.
- Continued by the current government with necessary changes, though it will not form the basis of mandatory system.

Offset credits (J-VER), MOE (Nov 2008-)
- Verify emission reduction and removal by SMEs, agriculture and forestry as reliable credits for market transaction.

<2010->

Bill for the Basic Act on Climate Change Countermeasures (Cabinet decision 12 Mar 2010, Passed the Lower House 18 May)
- Introduce a cap and trade.

Domestic Emission Trading Subcommittee, Central Environment Council (Apr-Dec 2010)
- Based on the Bill for the Basic Act, contribute to the scheme design by analyzing various discussion points.
- compile the interim report.

Three Major Policies to Counter Climate Change (Ministerial Committee on the GW Issue, 28 Dec 2010)
- Requests careful consideration on emissions trading, focusing on several concerns of this scheme.

Bill of the Basic Act on Climate Change Countermeasures

Japan's Mid-term target:

"Emission reduction by 25% by 2020 compared to the 1990 level premised on establishment of a fair and effective international framework in which all major economies participate and agreement on by all those economies on ambitious targets"

Japan's Long term goal:

80% reduction by 2050 compared to the 1990 level

- All possible policy instruments must be mobilized
- Policy and measures will include;
  - Domestic Emissions Trading Scheme
  - Tax for addressing climate change
  - Feed-in Tariff (FIT)
  - Utilization of Renewable Energy
  - Promotion of Energy Efficiency
  - Innovative technology development
  - Carbon disclosure
  - Creation of New Business etc.

ETS Provision in the Bill for the Basic Act on Climate Change Countermeasures (Article 13)

1 In order that the reduction of the emission of greenhouse gases be implemented steadily, **the Government shall establish a domestic emission trading scheme** (a scheme to set limits to the emission of greenhouse gases by emitters in a certain period, and to allow trading of emission amount with other emitters and other means for complying with the limits). The Government shall investigate legislative measures necessary for this, concurrently with the investigation on the tax for the global warming countermeasures stipulated in the next article, clause 2, and **produce an agreed draft within one year after the enactment of this act as a milestone.**

2 The investigation referred to in the previous clause shall include the investigation into the coverage of emitters, methods to set limits of greenhouse gas emission of the emitters within the coverage in a certain period, a scheme to disclose the situation of greenhouse gas emission of these emitters, and other matters that are needed for the appropriate implementation of the domestic emission trading scheme.

3 With regard to the methods to set limits of greenhouse gas emission in a certain period referred to in the previous clause, investigation shall be made basically into the method to set the limits as those to the total amount of greenhouse gas emission in a certain period, while also investigating into the method to set the limits as those to the amount of emission per a unit of activity such as production volume.

Three Major Policies to Counter Climate Change (extract)
(Ministerial Committee on the Climate Change Issue, 28 December 2010)

○Introduction of Tax for Climate Change Countermeasures (extract)

GOJ will establish "Special Provisions of the Taxation for Climate Change Countermeasures" which add extra tax ratio to Petroleum and Coal Tax on all kinds of fossil fuel proportionately with their CO_2 emissions.

○Expantion of a Feed-in Tariff for Renewable Energy (extract)

GOJ will advance consideration on the introduction of this scheme from FY2012.

○Domestic Emissions Trading Scheme

The domestic emissions trading scheme, while it is the key climate change policy, triggers concerns on excessive interference on corporate management, investment deterrence to growing sectors, and over-speculation, and will impose new regulation to large emitters in addition to Tax for Climate Change Countermeasures and Feed-in Tariff.

GOJ will consider carefully about this scheme, with evaluating burden on Japanese industry, associated impacts on employment, developments and effects of emissions trading schemes in other countries, and global warming countermeasures which are already implemented in Japan (e.g. voluntary actions by industry) as well as an outcome of fair and effective international framework with participation of major economies.

Key Features of Domestic Emissions Trading Scheme in Japan (Interim Report)

(Compiled by the Domestic Emissions Trading Subcommittee, Global Environment Committee, Central Environment Council, December, 2010)

（Note）Although subcommittee members have not reached consensus on all items below, the subcommittee compiled them for the purpose of further discussion.

1. Scheme Period

・Toward national mid-term reduction target in 2020, initial scheme period will be a three-fiscal-year period and a five-fiscal-year period thereafter, provided that the scheme starts in FY2013.

2. Covered Gases

・The scheme should cover CO2 initially. Further consideration is necessary regarding coverage of non-energy use CO2 in the view of accuracy control of monitoring.

3. Entities Covered by the Scheme

・The scheme should cover legal entities that own one or more large emitting facilities (considering threshold as annual emissions at or above 10,000tCO2/year).

・It needs further consideration in the light of its advantages and competition polices whether to allow entities to comply jointly with their emissions caps.

Tentative translation is available at http://www.env.go.jp/en/earth/ets/mkt_mech/key-features1012_tt.pdf

4. Cap Setting & Treatment of CO2 emission from electricity

＜Method of Cap Setting＞

・Each entity's cap should be set flexibly, based on Emission Reduction Potential, meaning the achievable level of emission reduction taking into account its reduction efforts in the past and the applicable technologies in the future.

・Method of cap setting and the treatment of CO2 emission from electricity should be based on "Indirect emission from electricity consumption + absolute emission cap setting for free) + intensity target for electricity suppliers," also considering possibilities to mix the advantages of other methods.

【Indirect emission from electricity consumption】Covers electricity users by counting indirect CO2 emissions from electricity consumption. (By contrast, Direct CO2 emission covers electricity suppliers by counting direct CO2 emissions from electricity generation stations.)

【Absolute emission cap by free setting】Combines Benchmarking and Grandfathering. Benchmarking sets absolute emissions caps based on CO2 emissions per unit of production (Benchmark) multiplied by activity levels. Grandfathering sets absolute emissions caps based on past emissions multiplied by reduction rate.

【Intensity target for electricity】Requires electricity suppliers to improve their emission intensities (CO2 emissions per electricity).

（Other Methods）

【Intensity target】Only Limits CO2 emissions per unit of production (emission intensity) and does not set absolute emission caps.

【Absolute emission cap set by auction】Each entity acquires emission allowances by auction.

＜Estimated total allowance volume＞

・The total allowance volume should be estimated by accumulating the reduction of applicable technologies in Japan. It should be used as an indicator of whether additional measures among sectors not covered by the scheme are necessary in order to achieve the mid- and long-term emission reduction target.

Tentative translation is available at http://www.env.go.jp/en/earth/ets/mkt_mech/key-features1012_tt.pdf

5. Compliance Procedure

・Each entity shall account its actual emission annually and ensure it does not exceed its emission cap in each compliance period*. An entity may trade allowances for compliance.

* Other than one-year compliance period, a multi-year compliance period will also be considered.

6. Cost Containment Measures

・The scheme should include banking (carrying over unused allowances to the next compliance period or future scheme period) and borrowing in effect (use of allowances for the next compliance period, issued before retirement).

・An entity may use external credits (foreign credits and credits from domestic reductions) shall be allowed under qualitative and quantitative conditions.

・In cap-setting, the products contributing to emission reductions and effects on international competitiveness should be considered.

7. Coordination between national statute and local ordinances

・National statute should specify the relation between the scheme under national statutes and local ordinances, in order to ensure such consistency as to avoid excessive burden on or confusion to covered entities, and to avoid hampering early actions under the existing local government ordinances.

8. Others (Registry System, Market Infrastructure)

・Technical consideration is necessary for registry system that manages emissions allowances, and for market infrastructure rules.

Tentative translation is available at http://www.env.go.jp/en/earth/ets/mkt_mech/key-features1012_tt.pdf

A Set of Procedures of Domestic Emissions Trading Scheme

From “Domestic Emissions Trading Scheme in Japan (Interim Report)”

○Each entity’s allowance should be set flexibly, based on their emission reduction potential and with consideration of economic effects.
○Covered entities are able to fulfill their obligations flexibly by trading allowances, utilizing external credits, borrowing allowances and so on, in case of deficit of allowances despite their own reduction efforts.

【Allowance Setting】

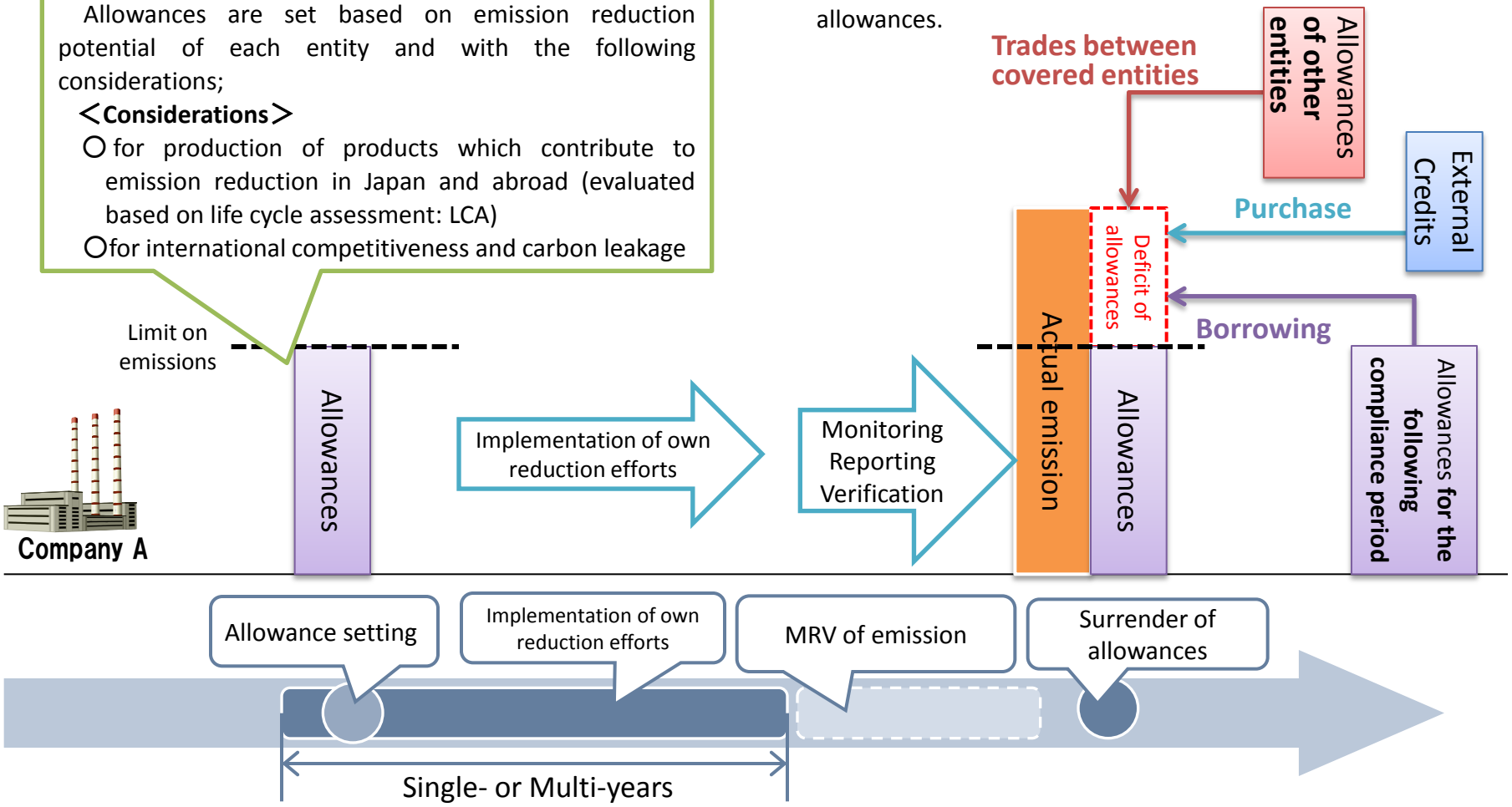
Allowances are set based on emission reduction potential of each entity and with the following considerations;

＜**Considerations**＞

○ for production of products which contribute to emission reduction in Japan and abroad (evaluated based on life cycle assessment: LCA)

○for international competitiveness and carbon leakage

※Selling and/or banking surplus allowances shall be allowed in case amount of actual emission is less than assigned allowances.



Emissions Trading Schemes by Local Governments

1. Tokyo MG

"Mandatory CO_2 Reduction and Emissions Trading Program (the Tokyo-ETS)", which requires mandatory reduction of absolute CO_2 emission, was developed from "Tokyo CO_2 Emissions Reduction Program" by amending the Tokyo Metropolitan Environmental Security Ordinance. The Tokyo-ETS has started from April 2010.

Coverage	Large CO2 emitters, such as office buildings and factories. --Consumption of fuels, heat and electricity is 1,500 kiloliters or larger per year (crude oil equivalent) 1,400 installations（including 1,100 business facilities and 300 factories）
compliance period	5 years --1st compliance period: from FY2010 through FY2014 --2nd compliance period: from FY2015 through FY2019 Monitoring and Reporting: every year
CAP setting	TMG's target of GHG emission reductions (25% reduction levels by 2020 from the 2000 emission) *The cap for the first compliance period(2010-2014) has been set at a level of 6% below base emissions. *The cap for the second compliance period will need to be set at a level of approximately 17% below base emissions.
Allowance allocation	Grandfathering Base year emission × Compliance factor × 5years *Base year emissions: Average of past 3 years
Penalty	Fine will be imposed for non-compliance emitter
Offset	•Small and Midsize facilities Credits within Tokyo area •Outside Tokyo Credits •Renewable Energy Certificates
Banking/borrowing of allowance	Banking is allowed/Borrowing is not allowed

2. Saitama Pref.

"Target-Setting Emissions Trading Program", in which the prefecture sets reduction targets of covered facilities and allows them to trade allowances, was established in accordance with Saitama Prefecture Global Warming Strategy Promoting Ordinance. The new program has started from April 2011.

Compliance period	5 years --1st compliance period: from FY2011 through FY2014 --2nd compliance period: from FY2015 through FY2019
Coverage	Large CO2 emitters, such as office buildings and factories. --Consumption of fuels, heat and electricity is 1,500 kiloliters or larger per year (crude oil equivalent) Number of covered facilities: about 600 in Saitama Pref.
Allowance allocation	• Base year emission (average emission of consecutive 3 years between FY2002 and FY2007) x Compliance factor (6% or 8%) x Compliance period • Grandfathering with free allocation
Offset	• Reduction surplus certified by Pref. (Emissions reduction exceeding the yearly obligation by covered facilities) • Emissions reduction credits from small and midsize facilities in Saitama (Emissions reduction by energy-saving measures) • Forest sink credits (equivalent to amount of CO_2 reduction by forest sink) ・Others

※Tokyo MG and Saitama Pref. singed the agreement to link their ETS on September 17, 2010

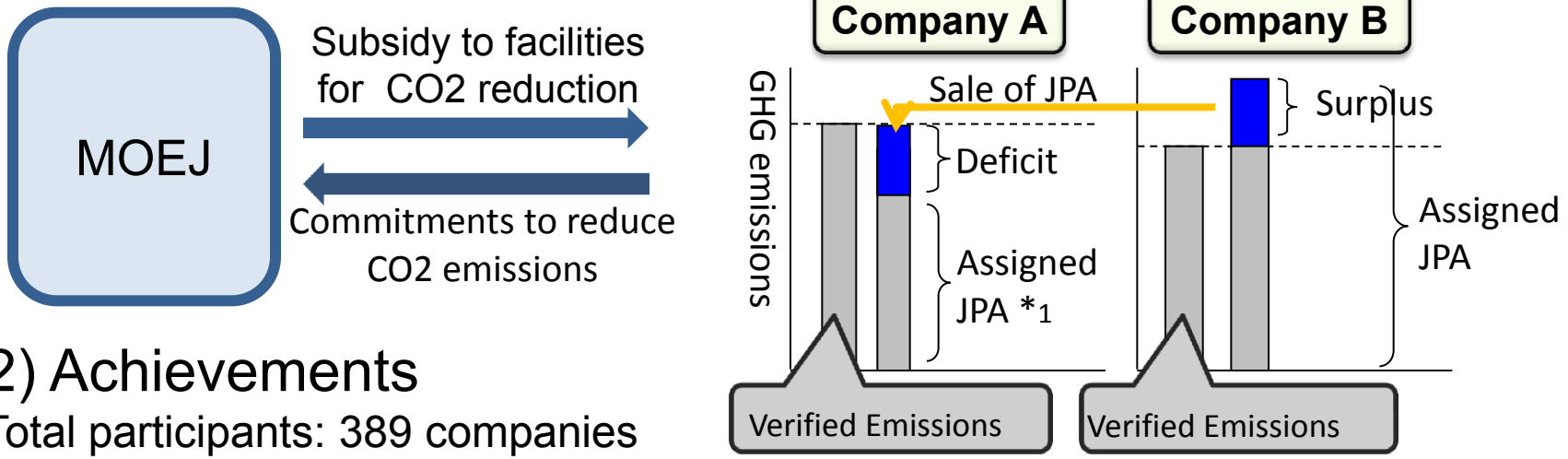
3. Other related schemes

Over 30 local governments (prefectures and major cities) have their own mandatory schemes/programs which require businesses to formulate their own GHG reduction plans and periodically report them to the governors /mayors.

Japan's Voluntary Emissions Trading Scheme (JVETS)

(1) Scheme outline

- Launched by MOEJ in 2005
- Supports voluntary CO2 reduction activities by business operators to ensure their emission reduction targets in a cost-effective way with subsidy and emissions trading
- Participants of JVETS constitute a part of Experimental Integrated ETS (2008~).



(2) Achievements

- Total participants: 389 companies

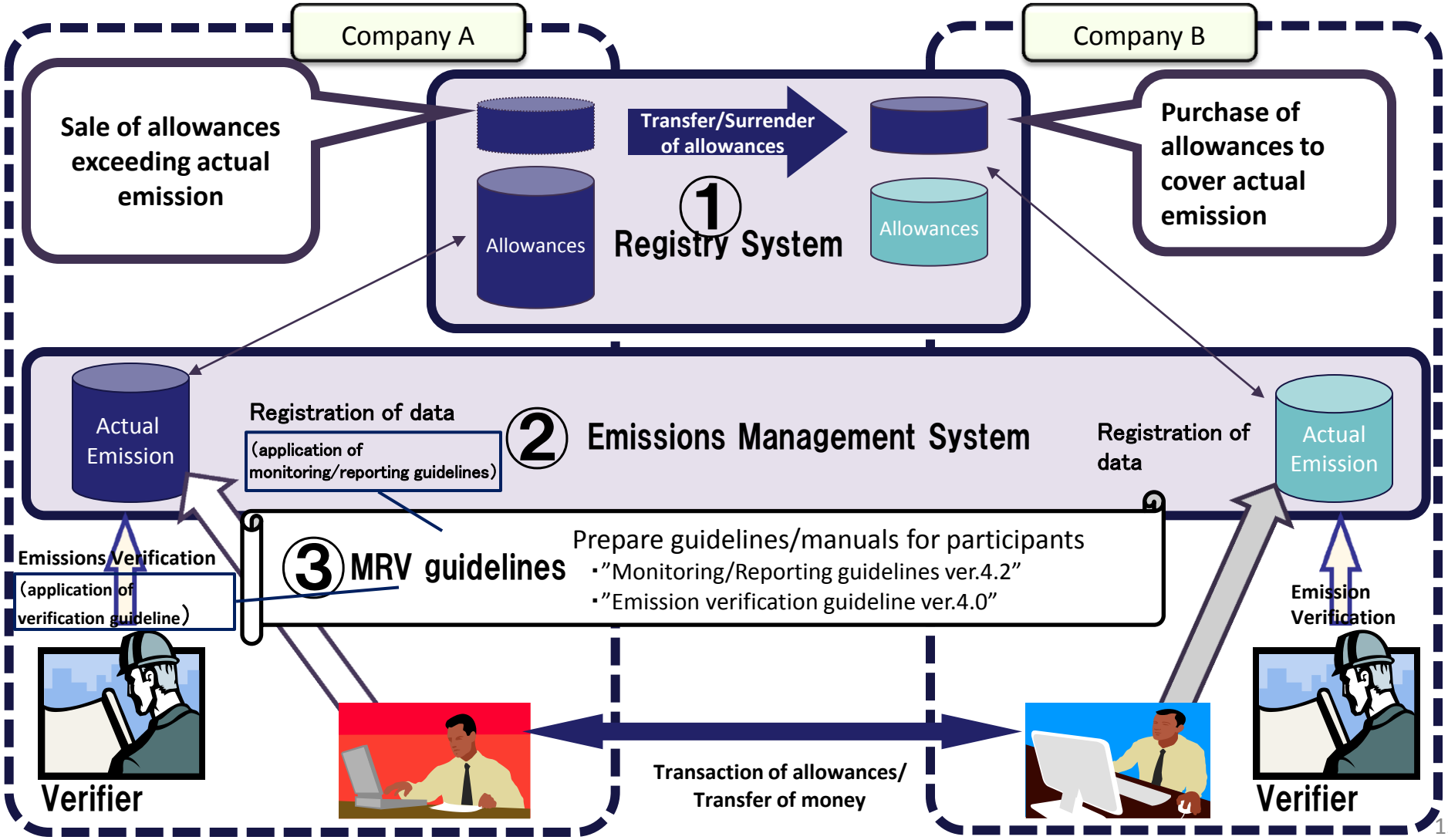
Commitment Period	FY2006	FY2007	FY2008	FY2009	FY2010
Achieved Reduction(kt-CO2)	377(29%)	280(25%)	383(23%)	950(28%)	97(16%)
Committed Reduction(kt-CO2)	273(21%)	217(19%)	136(8%)	345(10%)	100(16%)
Number of transactions	24	51	23	24	41
Average JPA price (JPY/t-CO2)	JPY1,200	JPY1,250	JPY800	JPY750	JPY830

*1 : Assigned JPA = (Base year emissions (An average for the past 3 years)) – (Committed reduction)

- Development of infrastructure: Monitoring, reporting and verification guidelines, third-party verification, the emissions management system and the registry for allowance.

JVETS Operation Infrastructure

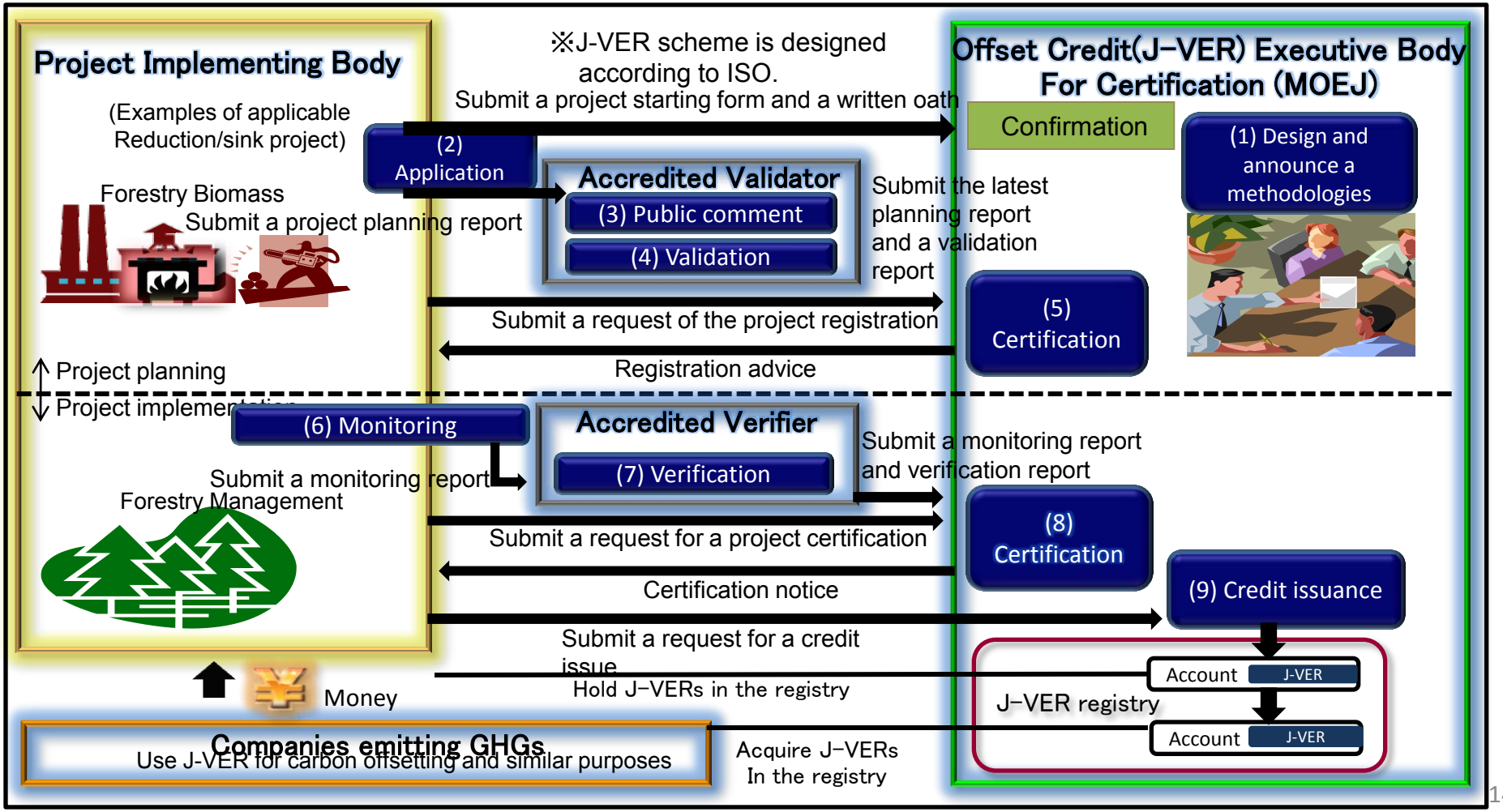
○Basic infrastructure, such as monitoring, reporting and verification (MRV) guidelines, registry system for allowances and emission management system are vital.
○ Through the operation of JVETS, basic infrastructure was established and a similar operational system as the EU-ETS was developed.



Offset Credit (J-VER) Scheme

- J-VER Scheme, established by MOEJ in November 2008, is a verification scheme for credits generated through the reduction/removal by sinks of greenhouse gases carried out via domestic projects.

- By utilizing the J-VER scheme, funds for carbon offsetting by individuals, businesses, local governments and others can be directed to domestic project propone ts in forest management or local industries. J-VER is a new mechanism to promote the domestic *Green New Deal* program through a global warming prevention campaign, expansion of job opportunities, and economic measures by using private-sector capital.

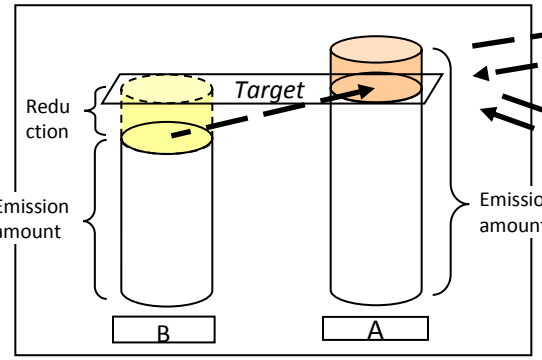


Experimental Introduction of an Integrated Domestic Market for Emissions Trading

Integrated Domestic Market

Experimental emissions trading scheme

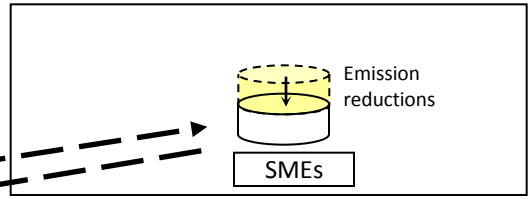
- **Participating corporations set their own emission reduction targets (absolute- or intensity-based).**
- **Allowances and specified credits can be used to achieve the targets.**
- **Target is set consistently with Voluntary Action Plans. Government examines each target's validity.**
- **Monitoring and Reporting are required. Verification is required for Trading.**



JVETS is incorporated into this scheme as one of the participating options.

Domestic Credits

Joint reduction projects by large corporations and small- and medium-scale enterprises (SMEs)



Financial, Tech. Resources

Domestic credits

Kyoto Mechanism Credits

GHG reduction from projects abroad

—Achievement of targets is to be reflected in the "voluntary action plan" and contribute to the Kyoto target.
—Continued by the current government with necessary changes, though it will not form the basis of mandatory cap and trade system.

Results of Experimental Emissions Trading Scheme in FY2010

- Of 109 participants who cleared their emission reduction targets, 10 participants retired 2,530,000t-CO2 of allowances borrowed in FY2009. 105 participants banked 5,750,000 million t-CO2 of allowance surplus.
- Of 43 participants who failed to clear their targets, 5 participants retired 3,650,000t-CO2 of allowances banked in FY2009. 10 participants retired external credits. 21 participants borrowed 21,140,000 t-CO2 of allowances.
- 14 participants of above 43 participants and 2 participants who failed to retire allowances borrowed in FY2009 and 2008 by surplus in FY2010 (the 16 participants are declaring their intention not to attend in FY2011 and 2012) ended up not achieve their target.

Cleared(emission-based) **109 (8.28 million t-CO2)**

How to Use Allowance Surplus	Num	Amount (thou t-CO2)
Sold	0	0
Retired Borrowed Allowances※1	10	2530
Banking	105	5750
Banked All of Surplus in FY2010	98	5220
Banked Surplus of Allowances Remained After Retiring Allowances Borrowed in FY2008 and 2009	7	530

※1: 2 participants borrowed 3,420,000t-CO2 of allowances again, which were borrowed in FY 2008 and 2009.

Failed **43 (72.42 million t-CO2)**

How to Offset Deficits	Num	Amount (thou t-CO2)
Allowances Borrowed in FY2008 and 2009※2	5	3650
Purchased Allowances	0	0
External Credits	10	47600
Borrowing※3	21	21140
Borrowed All of Deficits in FY2010	15	230
Borrowed Deficits Remained after Retiring External Credits	6	20910

※2: 3 participants banked 1,969,000t-CO2 of remained allowances.

※3: 14 participants borrowed 2,625,000t-CO2 of allowances borrowed in FY2008 and 2009.

Total of FY2008, 2009 and 2010

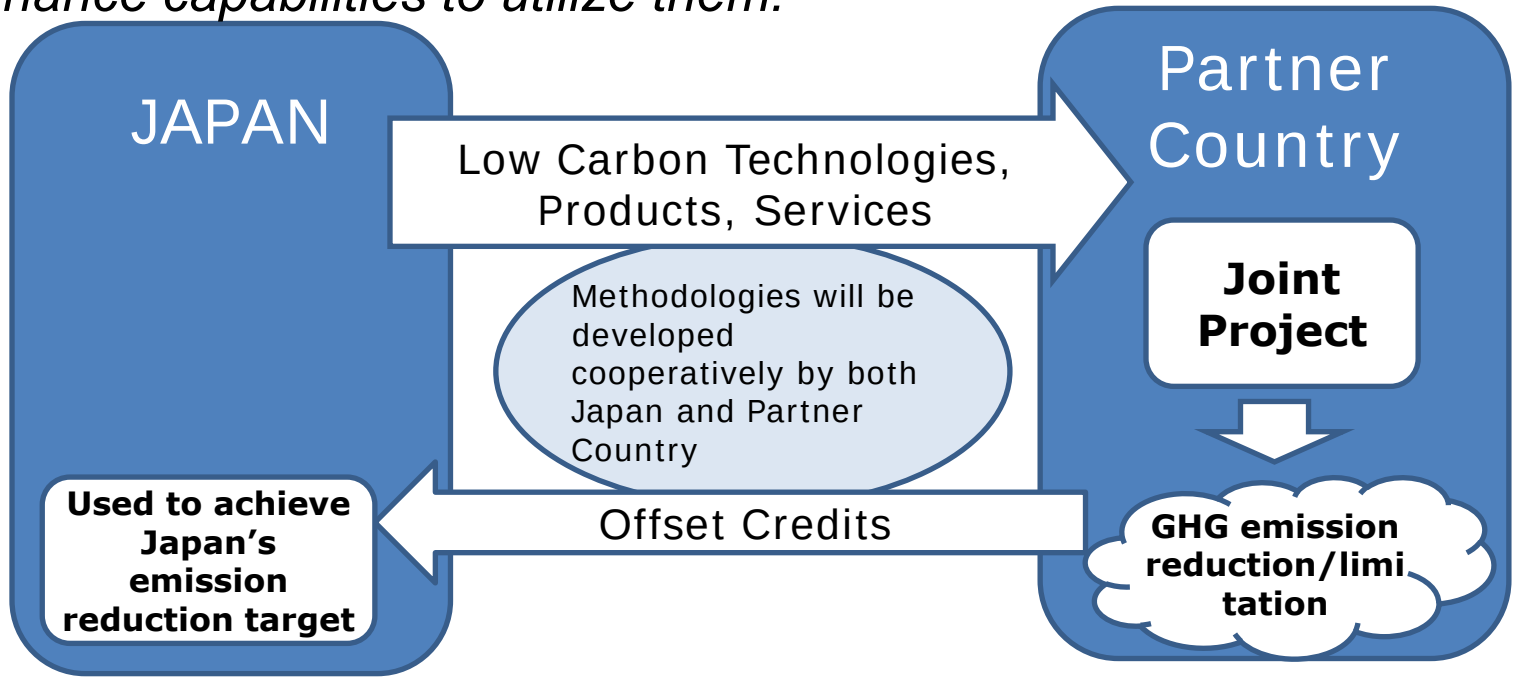
Banking (Total)	108	32.61 million t-CO2
Borrowing (Total)	26	50.81 million t-CO2
Non-achiever(Total)	16	470 thousand t-CO2

Note: Of 32 JVETS participants who cleared their targets, 5 participants sold 3,000t-CO2. 25 participants banked 18,000t-CO2. 7 participants cancelled 1,000t-CO2. 36 participants who failed to clear their targets purchased 25,000t-CO2 of allowances, As a result, every participants complied their targets.

Image of Bilateral Offset Credit Mechanism

Purposes of the BOCM

- *Contribute to the ultimate objective of the UNFCCC through promotion of mitigation activities globally.*
- *Facilitate the bilateral cooperation in the field of climate change in such a way that best suits each country's national circumstances.*
- *Contribute to the sustainable development of developing countries.*
- *Appropriately evaluate the contribution to GHG emission reductions or removals.*
- *Facilitate diffusion of low carbon technologies, products and services and enhance capabilities to utilize them.*



MOE-J's initiatives to promote the BOCM

(1) Feasibility Studies (FS) for potential BOCM projects/actions

- Called for proposals from Japanese entities on for potential BOCM projects/actions, in order to acquire knowledge and experience for designing and implementing the BOCM.
- 29 projects were selected for FY2011, increased from three in FY2010.

(2) Information platform for the BOCM

- New Mechanisms Information Platform website was established to provide the latest movements and information on the BOCM.
- Manage help desk for new market mechanisms, in order to respond inquiries.

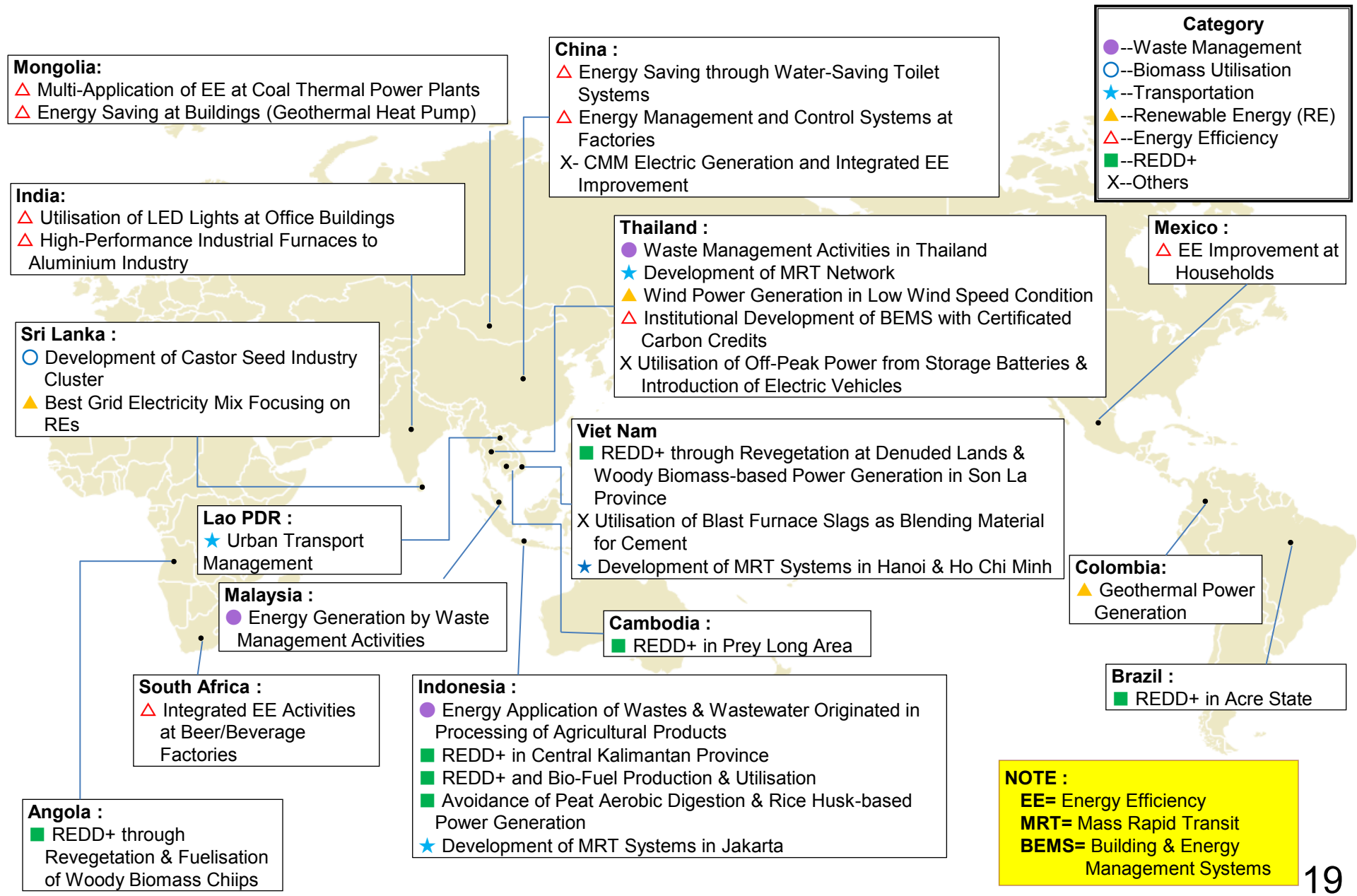
(3) Capacity Building for the BOCM

- Consultations with government officials and private firms in developing countries in order to develop capacity to implement new market mechanisms.
- Capacity building for MRV was launched in Asia, Latin America and Africa, including developing MRV methodologies reflecting each national circumstance.

(4) New registry system for the BOCM

- Developing new registry for recording and tracking of emission reductions under the BOCM.

BOCM Feasibility Studies in FY2011



Category
- ●--Waste Management
- ○--Biomass Utilisation
- ★--Transportation
- ▲--Renewable Energy (RE)
- △--Energy Efficiency
- ■--REDD+
- X--Others

Mongolia:
- △ Multi-Application of EE at Coal Thermal Power Plants
- △ Energy Saving at Buildings (Geothermal Heat Pump)

China :
- △ Energy Saving through Water-Saving Toilet Systems
- △ Energy Management and Control Systems at Factories
- X- CMM Electric Generation and Integrated EE Improvement

India:
- △ Utilisation of LED Lights at Office Buildings
- △ High-Performance Industrial Furnaces to Aluminium Industry

Thailand :
- ● Waste Management Activities in Thailand
- ★ Development of MRT Network
- ▲ Wind Power Generation in Low Wind Speed Condition
- △ Institutional Development of BEMS with Certificated Carbon Credits
- X Utilisation of Off-Peak Power from Storage Batteries & Introduction of Electric Vehicles

Mexico :
- △ EE Improvement at Households

Sri Lanka :
- ○ Development of Castor Seed Industry Cluster
- ▲ Best Grid Electricity Mix Focusing on REs

Viet Nam
- ■ REDD+ through Revegetation at Denuded Lands & Woody Biomass-based Power Generation in Son La Province
- X Utilisation of Blast Furnace Slags as Blending Material for Cement
- ★ Development of MRT Systems in Hanoi & Ho Chi Minh

Lao PDR :
- ★ Urban Transport Management

Malaysia :
- ● Energy Generation by Waste Management Activities

Cambodia :
- ■ REDD+ in Prey Long Area

Colombia:
- ▲ Geothermal Power Generation

South Africa :
- △ Integrated EE Activities at Beer/Beverage Factories

Indonesia :
- ● Energy Application of Wastes & Wastewater Originated in Processing of Agricultural Products
- ■ REDD+ in Central Kalimantan Province
- ■ REDD+ and Bio-Fuel Production & Utilisation
- ■ Avoidance of Peat Aerobic Digestion & Rice Husk-based Power Generation
- ★ Development of MRT Systems in Jakarta

Brazil :
- ■ REDD+ in Acre State

Angola :
- ■ REDD+ through Revegetation & Fuelisation of Woody Biomass Chiips

NOTE :
EE= Energy Efficiency
MRT= Mass Rapid Transit
BEMS= Building & Energy Management Systems