East Asia Low Carbon Growth Partnership Dialogue Side Event

Japan's initiatives on the Bilateral Offset Credit Mechanism (BOCM) and other activities for developing countries

Ministry of Foreign Affairs
Ministry of Economy, Trade and Industry
Ministry of the Environment
Japan

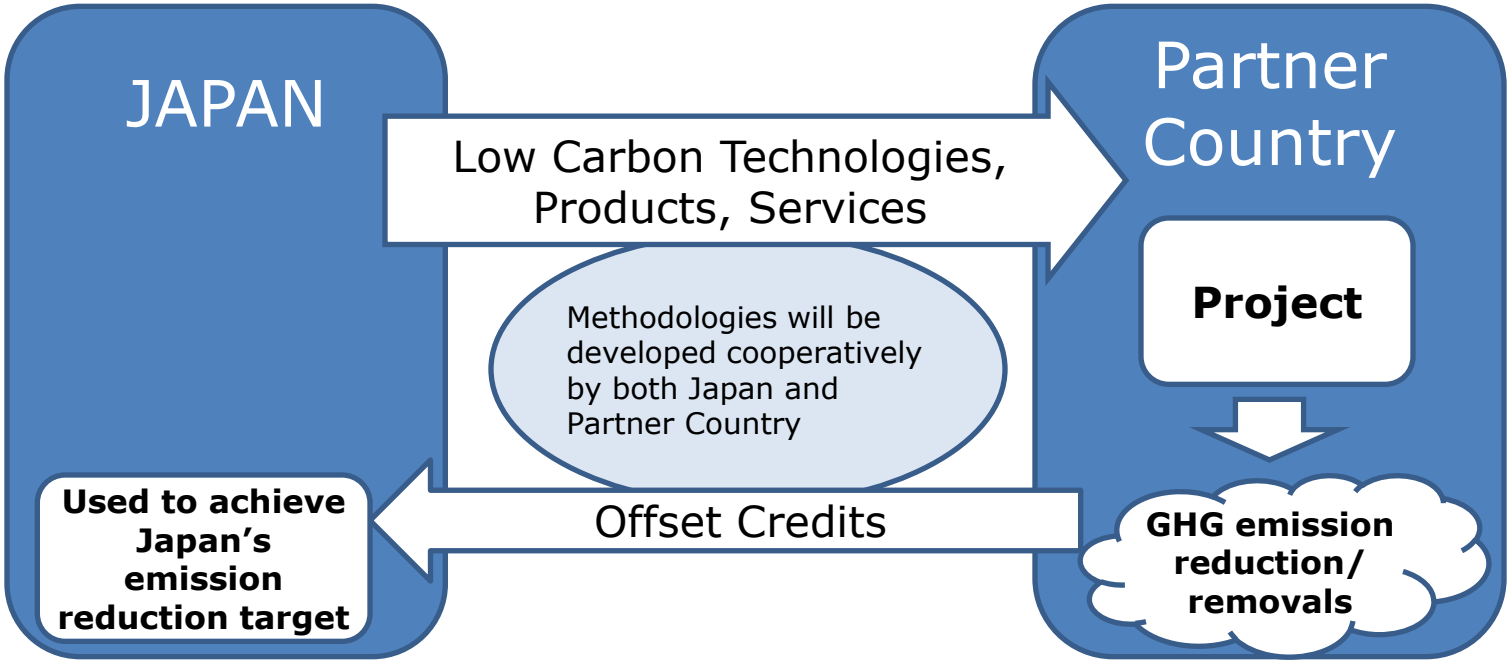
Table of contents

1. Elements of the BOCM and its methodologies

- Purpose of the BOCM
- The BOCM as new means of addressing climate change
- Governance structure of BOCM(subject to further consideration)
- Reference : Governance structure of the Clean Development Mechanism(CDM)
- Key features of the proposed BOCM in comparison with the CDM
- Comparison between the proposed BOCM and the CDM
- Consultations and way forward
- MRV Model Project and BOCM Model Project
- Framework for developing methodologies in the BOCM by METI
- BOCM Methodologies, including those of 4 study groups by METI
- BOCM Methodology Formats
- Image of BOCM Methodology Formats

Purpose 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.



The BOCM as new means of addressing climate change

2008～2012

◆Japan is currently making utmost efforts to achieve its target under the first commitment period of the Kyoto Protocol through domestic measures(GHG emissions reduction and carbon sinks) as well as acquiring credits of the Kyoto Mechanism.

Emissions reduction

Carbon sinks

Kyoto mechanism

2013～

◆Japan will continue to make emissions reduction efforts beyond 2012. Its concrete targets are currently reviewed and considered domestically.

◆The BOCM can be an effective way to achieve Japan's post 2012 targets, complementing the existing Kyoto Mechanism. Although Japan will not participate in the second commitment period of the Kyoto Protocol, it will remain in the Protocol and will intend to continue to use the Kyoto Mechanism to achieve its post 2012 targets.

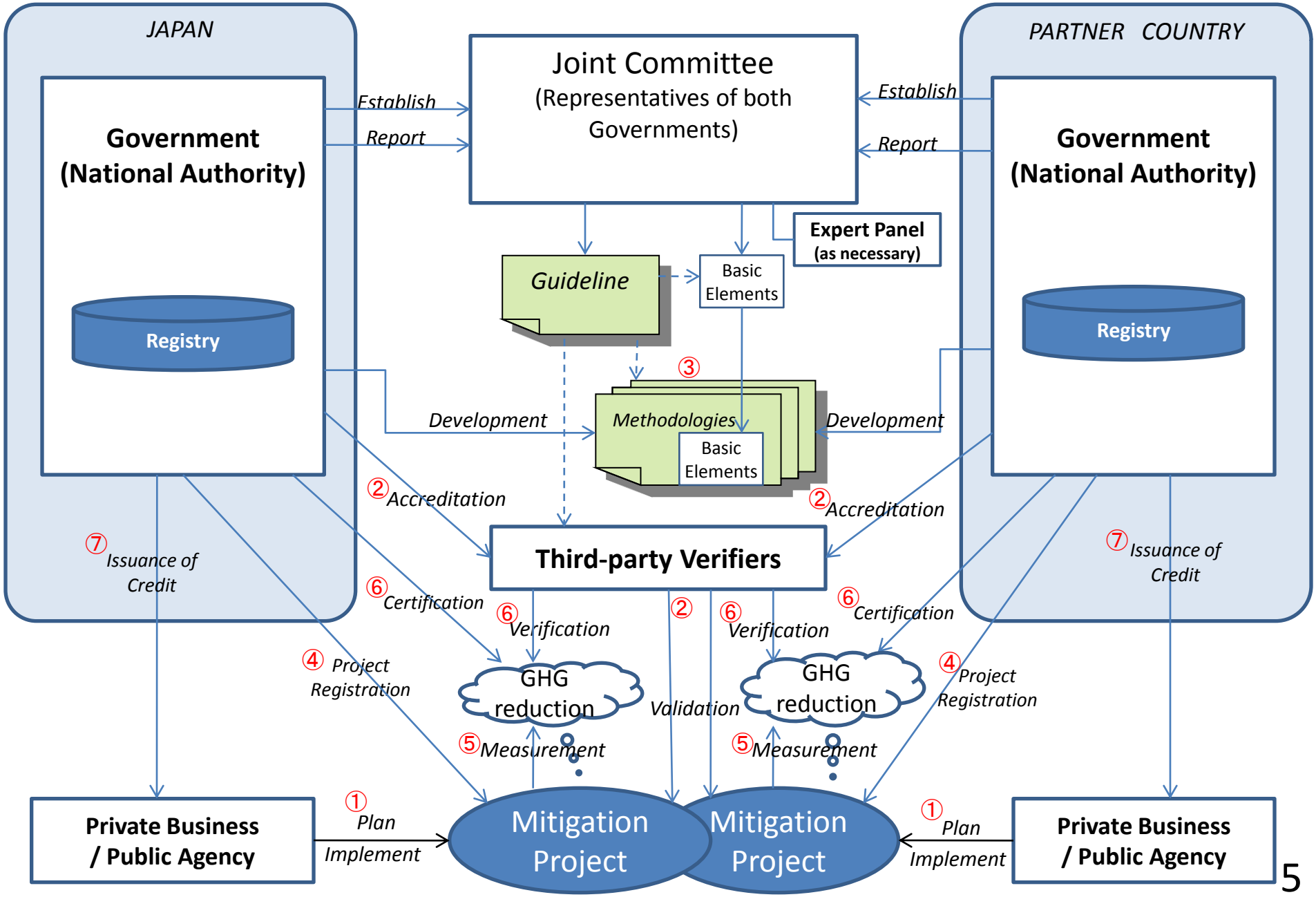
Emissions reduction

Carbon sinks

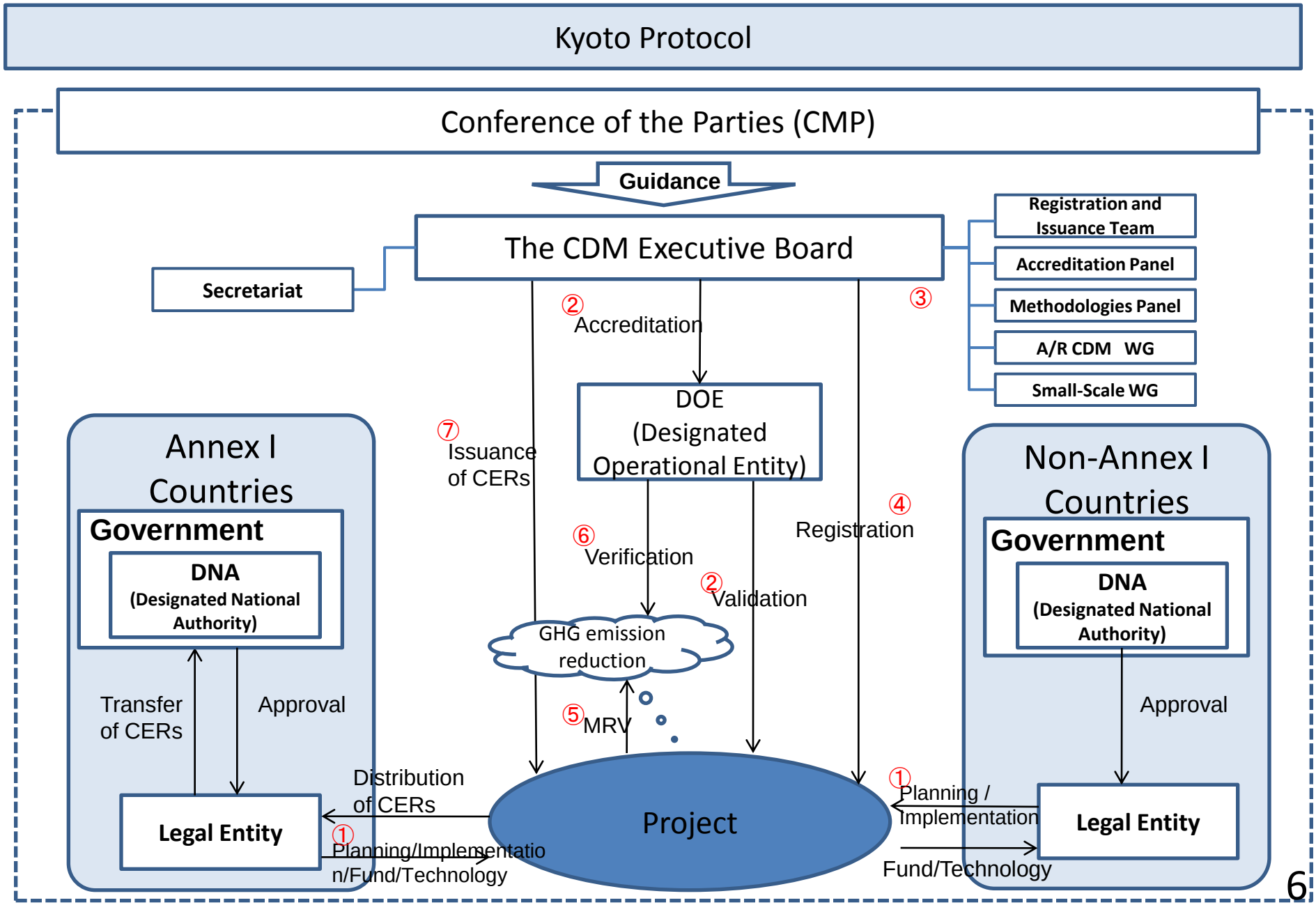
Kyoto mechanism

BOCM

Governance structure of BOCM (subject to further consideration)



Reference : Governance structure of the Clean Development Mechanism(CDM)



Key features of the proposed BOCM in comparison with the CDM

(Subject to further consideration)

	BOCM	CDM
Governance	-"de-centralized" structure (each government, joint committee)	-"centralized" structure (CMP, CDM-EB)
Sector/project Coverage	-Broader coverage	-Specific projects are difficult to implement in practice (e.g. USC coal-fired power generation)
Eligibility of projects	-several approaches are proposed ✓ "positive list" ✓"benchmarking" ✓ other methods as necessary	-"additionality" approach

Comparison between the proposed BOCM and the CDM

(Subject to further consideration)

	Work flow process	BOCM	Current CDM
①	PDD preparation	PDD will be become less burdensome by simplifying eligibility demonstration, making wider use of positive lists and benchmarking.	Project Participants (PPs) prepare PDDs (Project Design Documents), which contain eligibility demonstration based on the 'additionality tool'.
②	Accreditation of DOE/Third- party Verifier	Scope of third-party verifiers to conduct validation and other works will be broadened to include other institutions, such as ISO certifiers, in addition to DOEs.	Validation and other works are carried out only by DOEs (Designated Operational Entities).
③	Methodologies	The joint committee will identify basic elements of methodologies applicable to the BOCM.	CDM EB approves the methodologies applicable to the CDM.
④	Registration	Each government will register projects.	CDM EB registers projects.
⑤	Monitoring	In order to reduce monitoring burden, default values will be widely used in conservative manner.	PPs collect and archive all relevant data necessary for calculating GHG emissions reduction in accordance with strict rules .
⑥	Verification and certification	One third-party verifier will conduct both validation and verification for the same project.	Verification is carried out by DOEs which have not done validation. Certification is also done by DOEs.
⑦	Credit issuance	Each government will issue credits.	CDM EB issues credits.

Consultations and way forward

◆ Japan has been conducting feasibility studies in 28 countries since 2010.

◆ Japan has held consultations on the BOCM with several countries in East Asia(e.g. Vietnam, Cambodia, Lao PDR, Indonesia, India) since 2011, following up Leaders level Joint Statement with these countries. Consultations so far mainly focused on Japan's briefing on its proposed BOCM to these countries to enhance their understandings.

◆ Japan has made similar briefing to other interested countries as well.

◆ Japan will continue consultations with any interested countries. Building on the current feasibility studies since 2010, Japan plans to implement model projects for developing MRV methodologies, with the aim of starting BOCM operations from 2013.

【India】
Japan-India Joint Statement
(2010/10/25, 2011/12/28)

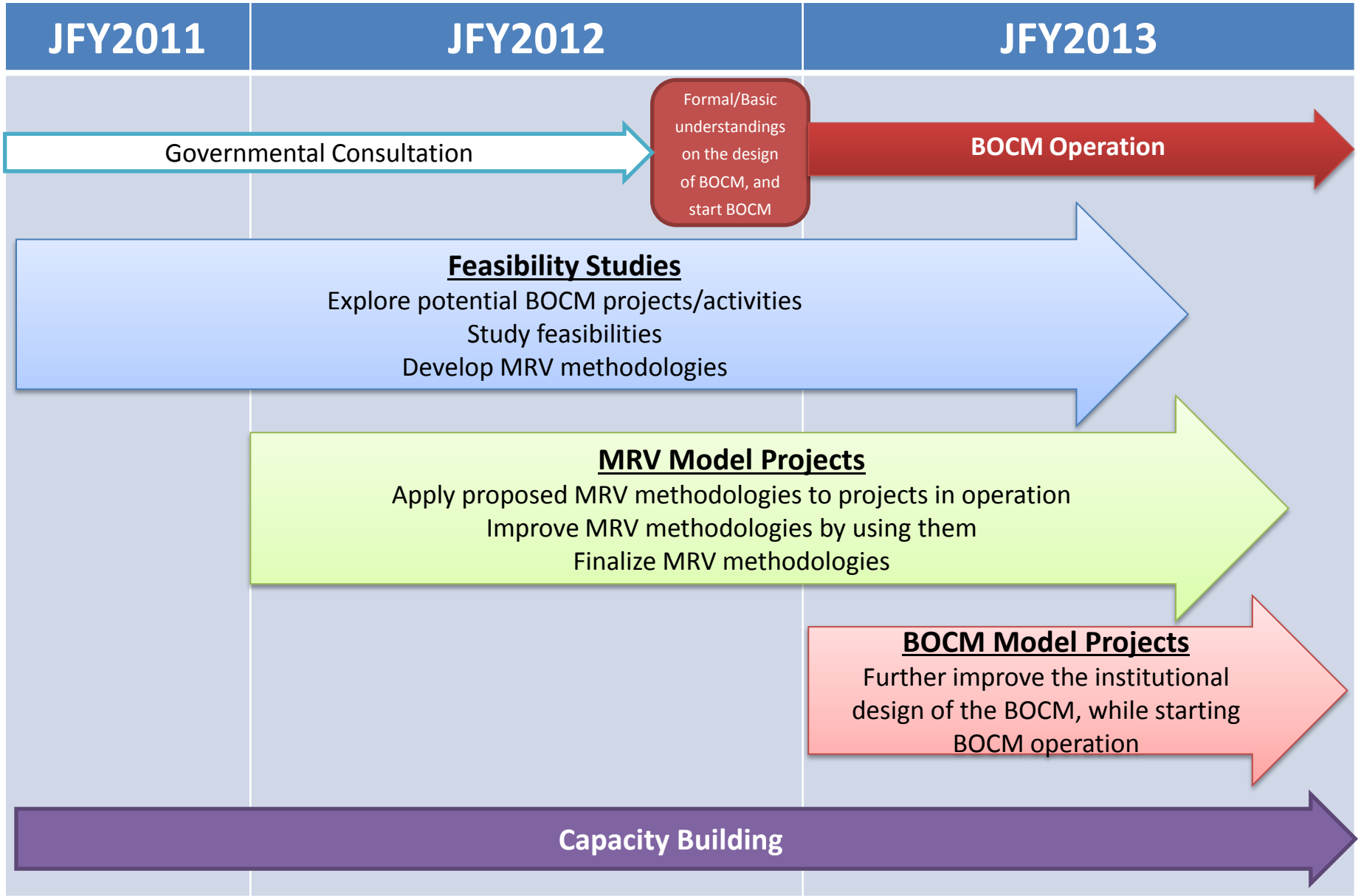
【Thailand】
Japan-Thailand Joint
Statement (2012/3/7)

【Vietnam】
Japan-Vietnam Joint Statements
(2010/10/31, 2011/10/31)

【Mekong Region】
Japan-Mekong Joint Statement
(2010/10/29, 2011/11/18)

【Indonesia】
A document of bilateral cooperation on
climate change issues (2011/11/25)

MRV Model Project and BOCM Model Project(1/2)



MRV Model Project and BOCM Model Project(2/2)

MRV Model Project

- The purpose of MRV Model Project is to develop MRV methodologies, by applying them to model projects under operation, and make inputs to institutional design of the BOCM.
- MRV model projects will be selected from those already under operation, and selected entities will develop methodologies to be used for the projects (methodologies already developed through FS may also be used).
- Selected entities will implement MRV in the selected projects on the basis of the methodologies to calculate emission reductions/removals achieved, and improve the methodologies.
- Applicable MRV methodologies will be finalized by both countries, based upon knowledge and experience gained through implementation of these MRV model projects. The knowledge and experience will be input to the Government consultations on institutional design.

BOCM Model Project

- The purpose of BOCM Model Project is to further improve the institutional design of the BOCM, while starting BOCM operation.
- After selection of BOCM model projects, selected entities will implement the BOCM model projects and quantify amount of emission reductions/removals achieved by the projects, by applying MRV methodologies.

Framework for developing methodologies in the BOCM by METI(1/2)

Subject to further consideration

The requirements to be met by the BOCM methodologies

The BOCM methodologies should:

- Be simplified, objective and practical, while lowering uncertainty and ensuring environmental integrity,
- Accelerate the deployment of low carbon technologies, products and services, taking into account the national circumstances in host countries,
- Facilitate the nationally appropriate mitigation actions (NAMAs) in host countries.

The elements to be included in the BOCM methodologies (Forest-related methodologies will be considered separately)

1. Eligibility

Eligibility defines the conditions on which projects/activities are allowed to obtain emissions reduction under the BOCM.

<Concept in establishing the eligibility criteria>

The eligibility should be established in terms of emissions reduced by accelerating the deployment of low carbon technologies, products and services and facilitating NAMAs, but not based on the hypothetical assessments of what would have occurred in the absence of additional revenue from offsets/credits of emissions reduction.

<Draft eligibility criteria>

(1) Positive list

Positive list identifies the low carbon technologies, products and services that should be deployed in host countries as its priority, and the projects meeting the positive list will be automatically deemed eligible.

(2) Benchmark

Benchmarks are determined in advance by project types based on energy efficiency or diffusion rate of equipments and measures, and the projects overachieving the benchmarks will be automatically deemed eligible.

(3) NAMAs identified by host countries

The NAMAs which host countries develop by themselves and to which the host countries register that offsets/credits can be issued will be eligible as the BOCM.

(4) Others

In principle, the eligibility should be evaluated based on the conditions (1) to (3) above, however, such indicators as market share, diffusion rate of technologies or barrier due to prevailing practice may be applied, if appropriate.

Framework for developing methodologies in the BOCM by METI(2/2)

Subject to further consideration

The elements to be included in the BOCM methodologies (Forest-related methodologies will be considered separately)

2. Emissions reduction calculation

➢The emissions reduction by the BOCM should be calculated as the difference between reference emissions and actual emissions after project/program implementation (project emissions).
In principle, the reference emissions should not be established on a project-specific basis, but be commonly applied to the projects/activities which meet a certain eligible criterion.

➢ The reference emissions should be established so that they lead to the reduction in global emissions, based on the following indicators:

- Performances of equipments and appliances（including those under energy efficiency standards and labeling scheme)
- Existing actual emissions at a certain time point before project implementation
- Historical emissions trends in the past, etc.

3. Monitoring

➢ Monitoring methodologies should be designed so that they are feasible and do not impose excessive burden on project participants, taking into account the national circumstances in host countries by, inter alia:

- Establishing conservative default values
- Making use of manufacturer's specifications or statistics, which don't need to be measured
- Making use of estimations based on sampling and simulations
- Monitoring activity levels using compiled data such as company's inventory and accounts
- Allowing the estimation of missing data at the verification of monitored data under certain conditions, etc.

BOCM Methodologies, including those of 4 study groups by METI (1/2)
(steel, cement, power generation, and home electrical appliance)

Reference material

Good methodology is essential in ensuring the environmental integrity, flexibility and the transparency of the BOCM. The following MRV methodologies are proposed through METI-FS and work of the study groups. These proposals are subject to further consideration.

	Current CDM	Steel	Cement	Power generation	Home electrical appliance
Eligibility criteria	• For a project to be eligible under the CDM, it needs to be proven as 'additional' not only on emission reductions to be achieved but also on investments and technologies to be used.	• Positive list of eligible technologies is used for eligibility assessments (positive list approach). • Indicator for total energy efficiency on steel works is reference use only, not for eligibility judgment.	• A project is eligible if the performance improved through the project exceeds the 'benchmark' performance level (Benchmarking approach). • Positive list approach	• Positive list approach • Benchmarking approach • For projects that meet certain conditions (such as small scale), application of barrier analysis could be considered.	• Positive list approach • Benchmarking approach *The approach is selected according to the applicable Standard Labeling scheme in a host country.
Reference level	• Reference level is defined as 'baseline' that represents emissions that would have occurred in the absence of the project concerned. • The baseline needs to be established for individual projects in accordance with strict rules.	• Reference level is defined as the current situation without eligible technology's deployment for individual facilities (Project by project approach)	• Estimated from a historical trend value for individual facilities • Average performances in the past 5 years are calculated by using the CSI CO2 protocol when applying the benchmarking approach	• Use of average emission factor of all power sources or average emission factors by fuel • Calculated based on recent performance • Use of voluntary target value on a corporate basis is being considered.	• Average of energy efficiency for standard products • In the case of benchmarking approach, average of energy efficiency for standard products in the base year is estimated on the basis of catalogue values and used.

BOCM Methodologies, including those of 4 study groups (2/2)

Reference material

	Current CDM	Steel	Cement	Power generation	Home electrical appliance
Monitoring	• Monitoring needs to be undertaken for individual projects in accordance with strict rules. • In many cases, the monitoring involves actual measurements of emissions reduction achieved.	• Based on ISO 14000 series' methodology • Actual measurement (accounting)of projects based on ISO 14064-2, similar to the methodologies defined by CDM-Executive Board • Projects' contribution to the total energy efficiency on steel works is referenced.	• Use of the CSI CO2 protocol to obtain reliable data. (In the case of a project that exceeds the boundary defined by the protocol, need to develop an alternative calculation method.)	• Measuring based on the defined boundary • Application of the default value for some monitoring items is being considered.	• Reasonable and cost-effective sampling methodology is being proposed and developed. • Sampling methodology using statistical estimate • Estimation and use of data obtained by laboratory testing • Catalog values, corrected as necessary, may be used in the future.
Example of eligible technologies	—	• Waste energy recovery technology (CDQ, CMC, TRT, Sinter waste heat recovery, etc.) • High efficiency equipment (Inverter, combined cycle power generation, etc.) • Capacity building for governments and facility owner of developing countries to learn ISO 14404 methodologies and factor analysis for better energy efficiency	• Co-processing （e.g. Alternative Fuels, Biomass Fuels and CFCs' Decomposition） • Utilizing of waste heat （e.g. Power generation and supply to the community） • Operation management (e.g. Energy conservation technology)	• A-USC (Advanced Ultra Super Critical) coal thermal power plant • LNG combined cycle thermal power plant • High efficiency transmission facility etc.	• Inverter control （Air conditioner, Household refrigerator, ・・ etc） • Light Emitting Diode （LED Lighting, LED display , ・・・etc） • Thermal insulation （Household refrigerator,Rice cooker ・・・etc） • Heat pump （Air conditioner, Water heating system, ・・・ etc）

BOCM Methodology Formats

- Key Features of the methodology formats
  - ➢ The methodology formats should be designed, so that project proponents can use them easily, verifiers can verify the data easily, and calculation logic is disclosed transparently.
  - ➢ In order to reduce monitoring burden, default values should be widely used in conservative manner.

Applicability	• A “check list” will allow easy determination of applicability of methodologies to the proposed project.
Method	• Flow chart will guide project proponents to the most appropriate calculation method for the proposed project.
Data	• List of required parameters will inform project proponents what data is necessary to calculate GHG emission reductions/removals with methodologies. • Default values for specific country and sector are provided beforehand.
Calculation	• Premade spread sheets will calculate GHG emission reductions/removals automatically by inputting required parameters, in accordance with methodologies.

Image of BOCM Methodology Formats (1/5)

- Applicability
  - Simple check list is provided for project proponents to determine the applicability of the methodology
  - All conditions have to be met in order to apply a methodology.

Example: High-Performance Industrial Furnace

	Applicability	Check
Condition 1	• High-performance industrial furnaces implemented in the planned project are equipped with regenerative burners.	☑
Condition 2	• High-performance industrial furnaces are implemented in the aluminum sector of the host country.	☑
Condition 3	• The same heat source is used by the waste heat generating facility and the recipient facility of waste heat.	☑
Condition 4	• Unused waste heat has to exist with in the project boundary prior to the planned project implementation.	☑
Condition 5	• Fossil fuels and electricity consumption by the high-performance industrial furnaces have to be measureable after the project implementation.	☑

Image of BOCM Methodology Formats (2/5)

- Method
  - Flow chart will guide project proponents to the most appropriate calculation method for the proposed project

Example: High-Performance Industrial Furnace

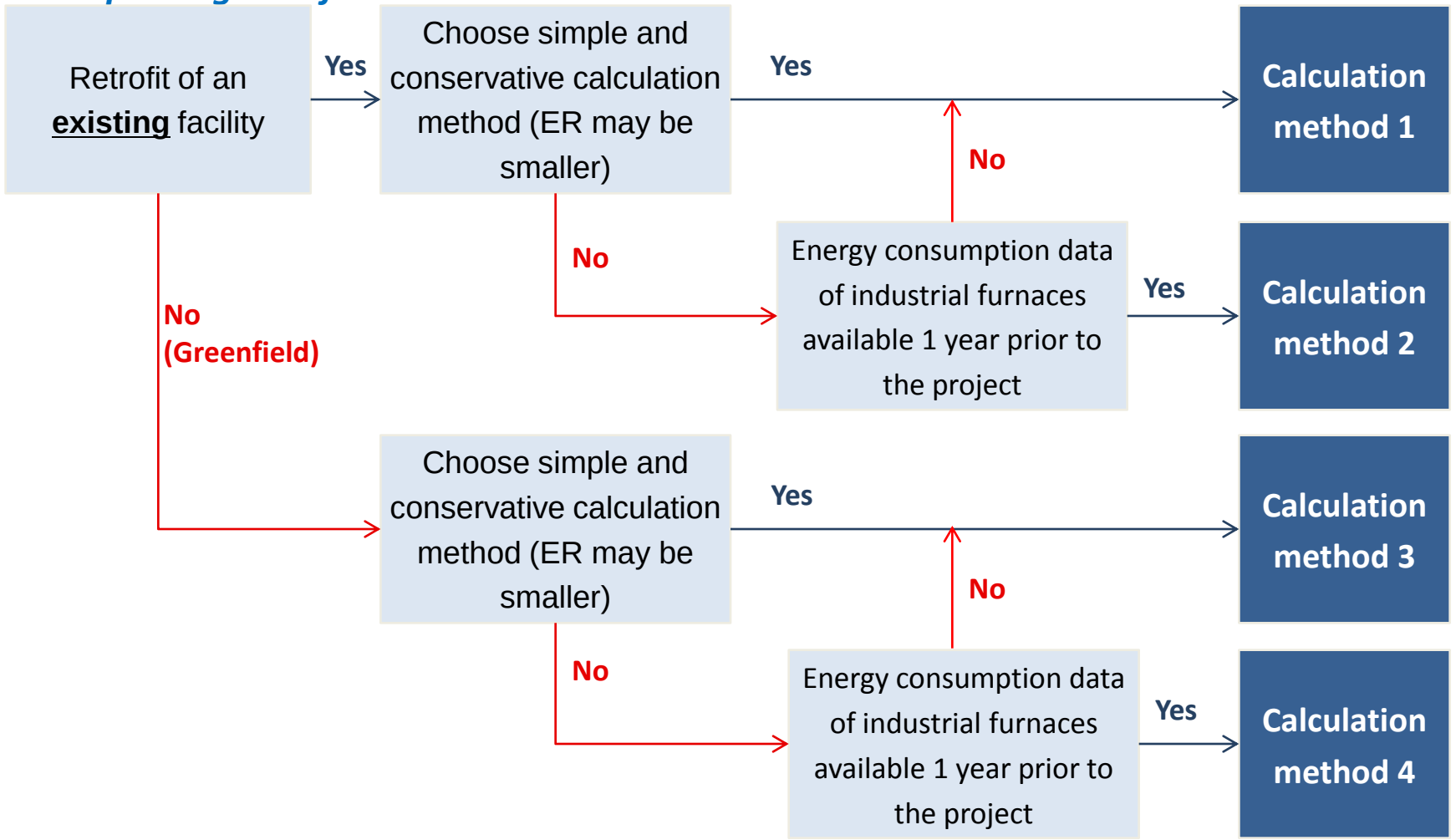
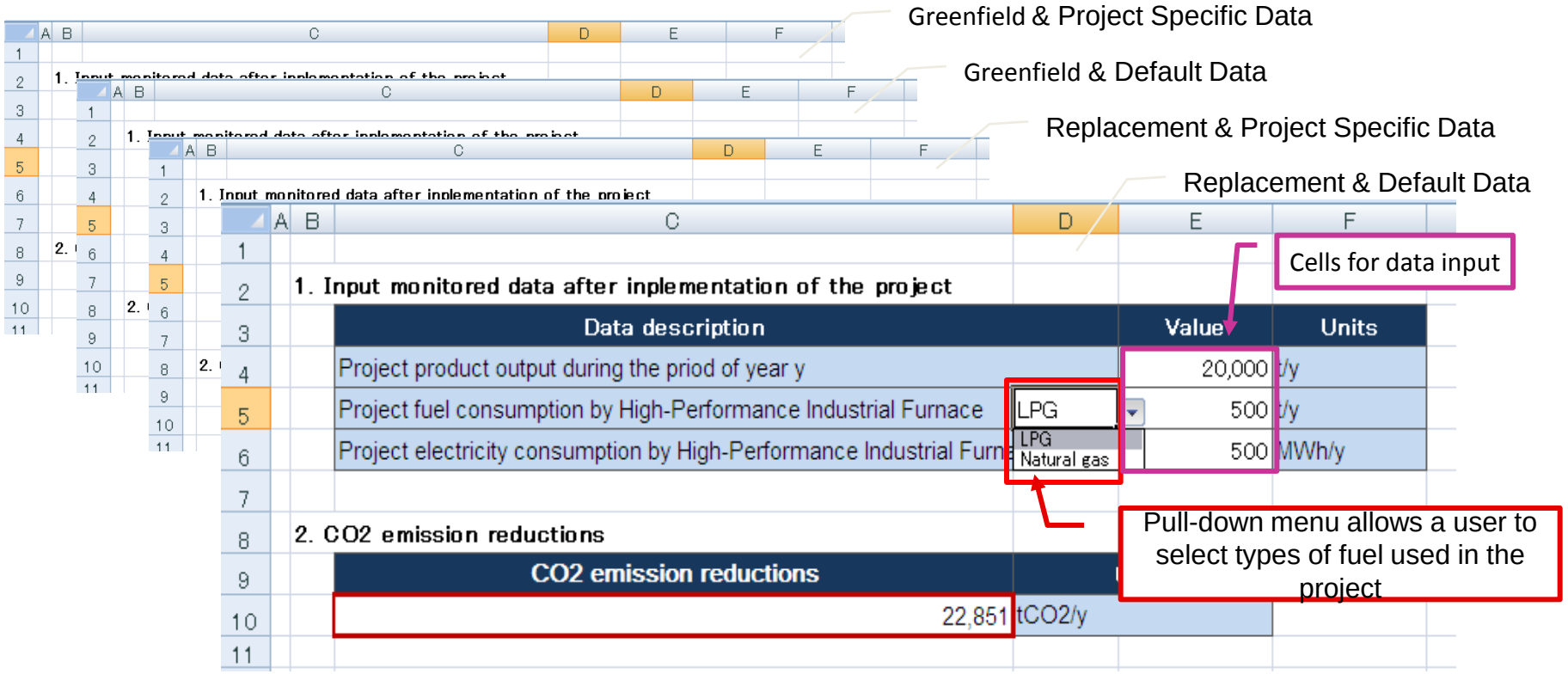


Image of BOCM Methodology Formats (3/5)

- Data input
  - ➢Project proponents are requested to input data in the data sheet only.
  - ➢Spread sheets are prepared for different methods.

Example: High-Performance Industrial Furnace

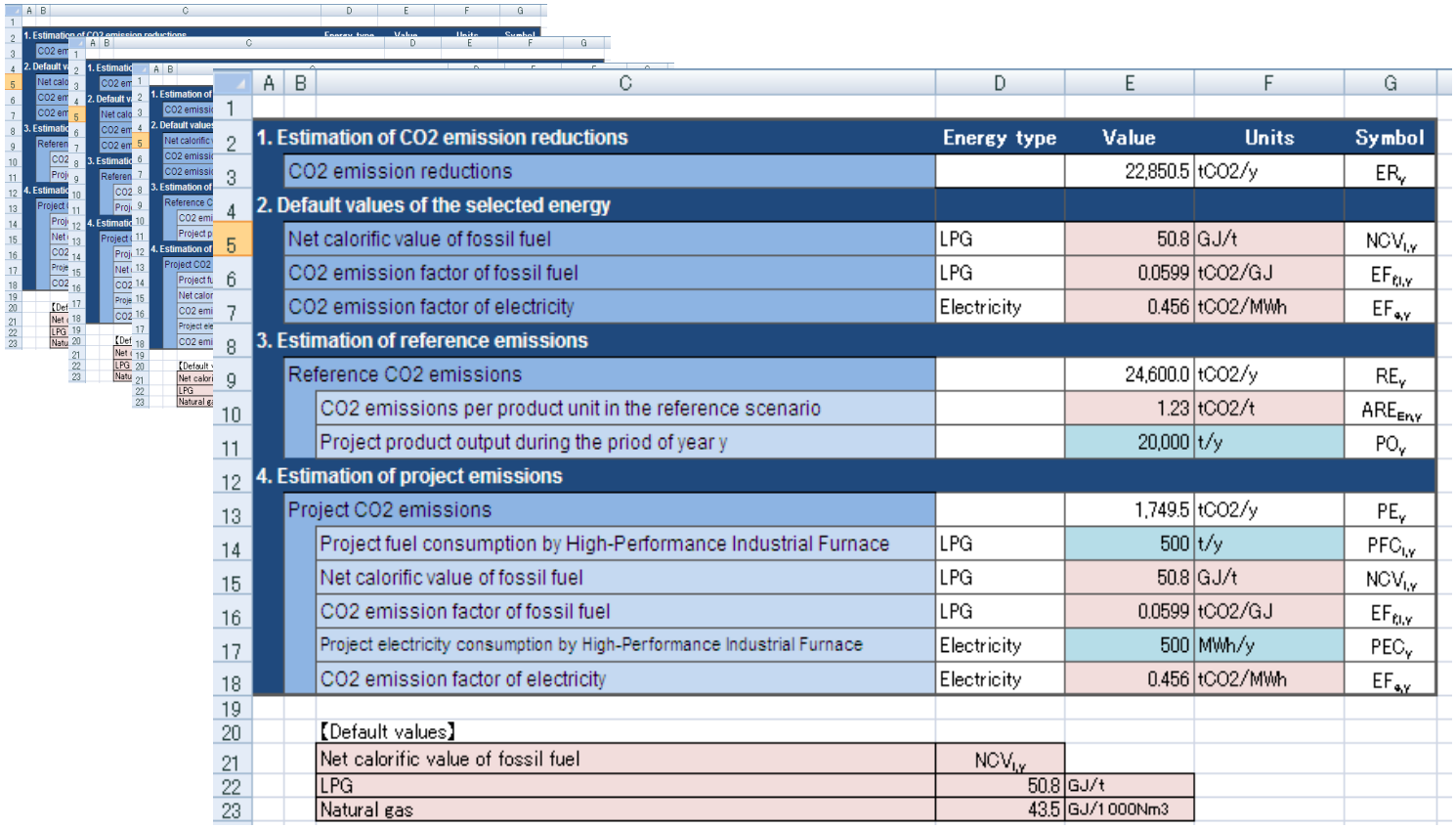


An example above provides different cases for greenfield project and existing (replacement) project and required data for each case.

Image of BOCM Methodology Formats (4/5)

- Calculation of Emission Reductions/removals
  - Spread sheets for calculation logic are provided in separate sheets and data input in the “data input sheet” automatically calculate emission reductions/removals.
  - Default values should be widely used, in conservative manner, in order to reduce monitoring burden.

Example: High-Performance Industrial Furnace



1. Estimation of CO2 emission reductions	Energy type	Value	Units	Symbol
CO2 emission reductions		22,850.5	tCO2/y	ER_y
2. Default values of the selected energy				
Net calorific value of fossil fuel	LPG	50.8	GJ/t	$NCV_{f,y}$
CO2 emission factor of fossil fuel	LPG	0.0599	tCO2/GJ	$EF_{f,y}$
CO2 emission factor of electricity	Electricity	0.456	tCO2/MWh	$EF_{e,y}$
3. Estimation of reference emissions				
Reference CO2 emissions		24,600.0	tCO2/y	RE_y
CO2 emissions per product unit in the reference scenario		1.23	tCO2/t	$ARE_{En,y}$
Project product output during the priod of year y		20,000	t/y	PO_y
4. Estimation of project emissions				
Project CO2 emissions		1,749.5	tCO2/y	PE_y
Project fuel consumption by High-Performance Industrial Furnace	LPG	500	t/y	$PFC_{f,y}$
Net calorific value of fossil fuel	LPG	50.8	GJ/t	$NCV_{f,y}$
CO2 emission factor of fossil fuel	LPG	0.0599	tCO2/GJ	$EF_{f,y}$
Project electricity consumption by High-Performance Industrial Furnace	Electricity	500	MWh/y	PEC_y
CO2 emission factor of electricity	Electricity	0.456	tCO2/MWh	$EF_{e,y}$

【Default values】

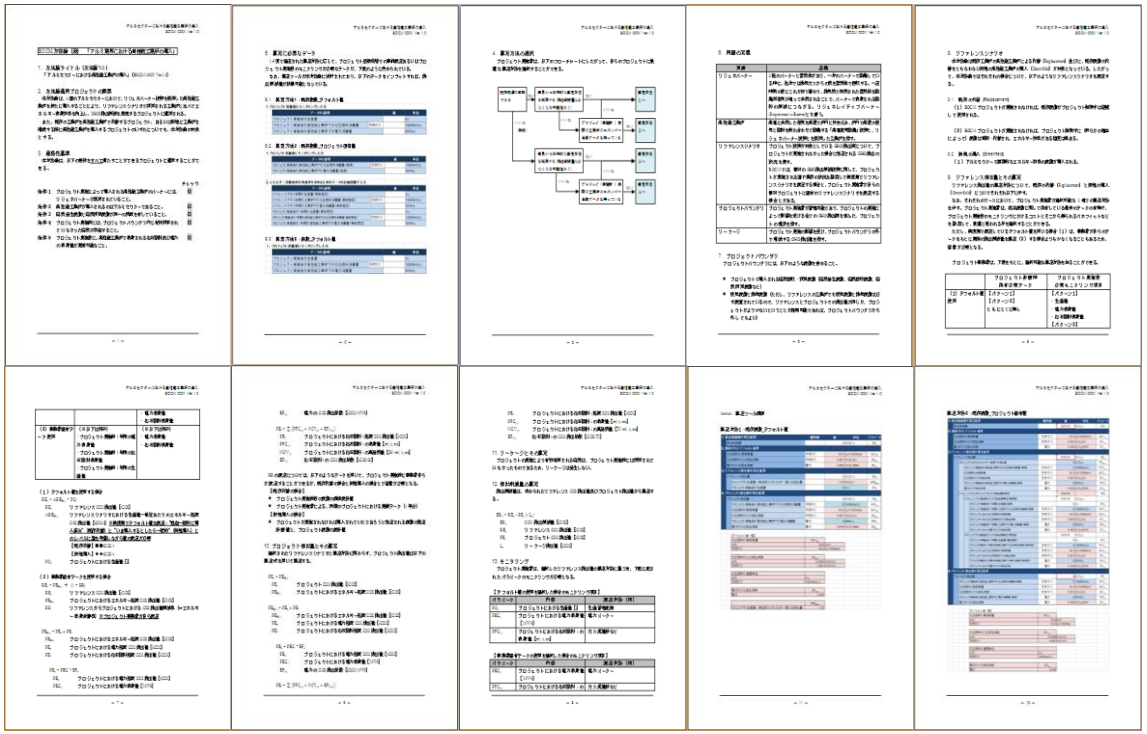
Net calorific value of fossil fuel	$NCV_{f,y}$	
LPG	50.8	GJ/t
Natural gas	43.5	GJ/1000Nm3

Image of BOCM Methodology Formats (5/5)

- Description of methodologies
  - Details of methodologies should be described by writing and calculation formula so that project proponents can understand logic behind and to enhance transparency.

Structure of the methodology

- Project description
- Applicability
- Calculation method selection
- List of required data
- Project boundary
- Reference scenario
- Calculation
- Monitoring



2. Capacity building re the BOCM and other activities for developing countries

- Capacity building
- Capacity Building Activities by METI
- Packaging of policy tools for ‘tailored’ assistance for developing countries by METI
- Activities by METI in FY2012
- Capacity Building Activities by MOEJ

Capacity building

◆ Capacity building is an important component of BOCM.

◆Capacity building for BOCM will be useful not just for BOCM alone, but also for improving CDM, and developing NAMAs.

(Example)

Indonesia

➢Support for establishing the MRV agency by JICA

Zambia/Bhutan

➢Support for simplified CDM methodologies for Rural Electrification by JICA

Mekong countries

➢Policy dialogue and enhanced briefing on BOCM for government officials in charge of climate change of five Mekong countries(Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam) scheduled in July

Capacity Building Activities by METI

METI undertakes a variety of capacity building activities, such as seminars, expert dispatches, technical experts invitations, joint researches on MRV methodologies, and government-private sector dialogues:

(Purposes)

- ✧ To provide technical know-how necessary to implement GHG emissions reduction projects under the BOCM
- ✧ To establish MRV methodologies for the BOCM
- ✧ To train experts on MRV methodologies for the BOCM
- ✧ To train entities to act as third-party verifiers for the BOCM
- ✧ To deepen understanding on the institutional and technical aspects of the BOCM both at government and private sectors.

Capacity building activities by METI will start in FY2013, using its budget.

Possible tool to be used

ECCJ
The Energy Conservation Center, Japan

- ➢ Educational Seminars for Engineers
- • Technical seminars providing knowledge concerning the Energy Conservation Act and the latest energy conservation technologies
- • Practice seminars that discuss practical technologies using demonstration Equipment, etc.

ICETT
International Center for Environmental Technology Transfer

- ➢ Activities relating to environmental technology:
- • Seminars
- • Expert dispatches
- • Technical experts invitations
- • Joint researches on MRV methodologies

AOTS
Association for Overseas Technical Scholarship

- ➢ Activities relating to technical scholarship:
- • Seminars
- • Expert dispatches
- • Technical experts invitations

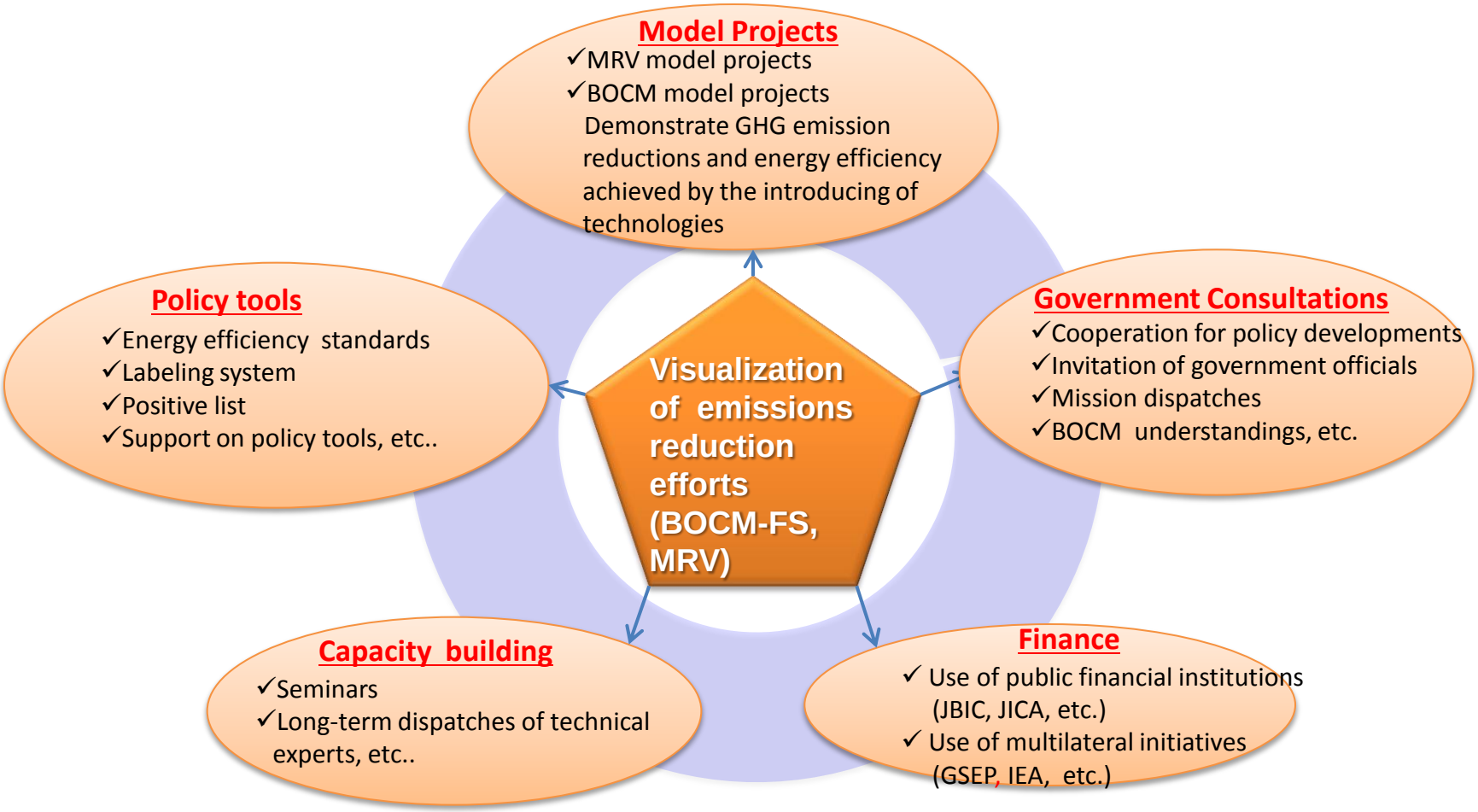
J-coal
Japan Coal Energy Center

- ➢ Activities relating to coal energy
- • Training projects
- • Clean coal technology transfer projects
- • Coal-fired equipment diagnosis

Packaging of policy tools for 'tailored' assistance for developing countries by METI

- **Combination of relevant policy tools**
- **Visualization of emissions reduction efforts**

Form the basis for enhanced business involvements



Activities by METI in FY2012

"Visualization" of emissions reduction efforts

- Feasibility studies to explore BOCM projects and develop MRV methodologies
- MRV trial on existing projects
- Total budget of USD 30 million is secured

Policy tools

- Assistance for host countries to deploy various policy tools, including energy efficiency standards and labeling
- METI tools for technological cooperation, including through capacity building and policy dialog, to be used

Finance

- Various financial tools to be explored to facilitate technology transfers

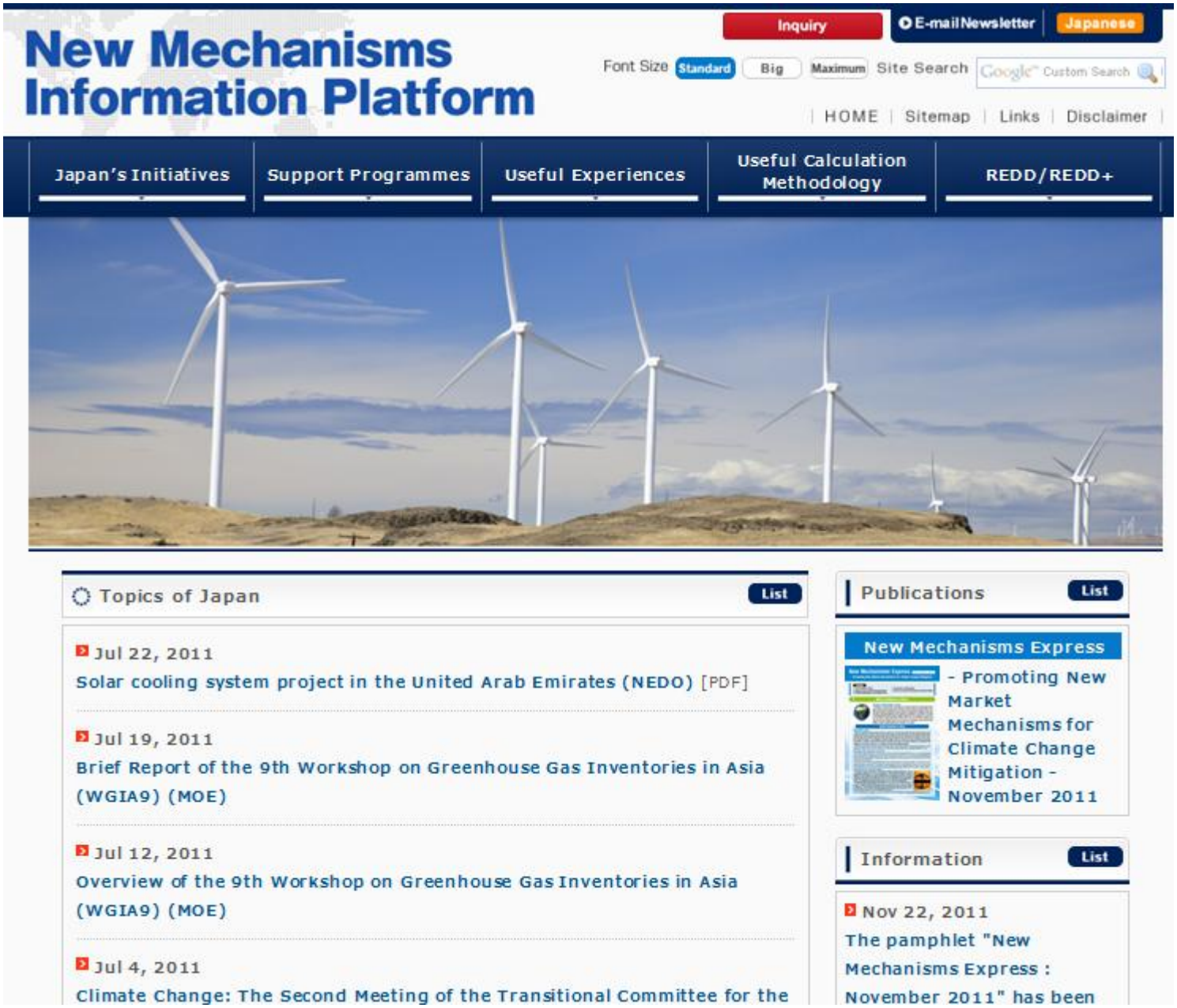
Capacity Building Activities by MOEJ (1/3)

- Starting from 2003, MOEJ has been implementing CDM capacity building programme in Asian countries to develop institutional arrangements for the CDM.
  - Institute for Global Environmental Strategies (IGES) has been collaborating with Asian countries for capacity building.

- Building on the existing CDM capacity building activities, MOEJ launched capacity building for MRV for the BOCM.
  - Such capacity building will be conducted in Asia, Latin America and Africa respectively, to reflect specific circumstances and capacities of those countries for implementing MRV.

- New Mechanisms Information Platform website was established by Overseas Environmental Cooperation Center (OECC) to provide the latest movements and information on the BOCM.
  - URL is http://www.mmechanisms.org/e/index.html

Capacity Building Activities by MOEJ (2/3)



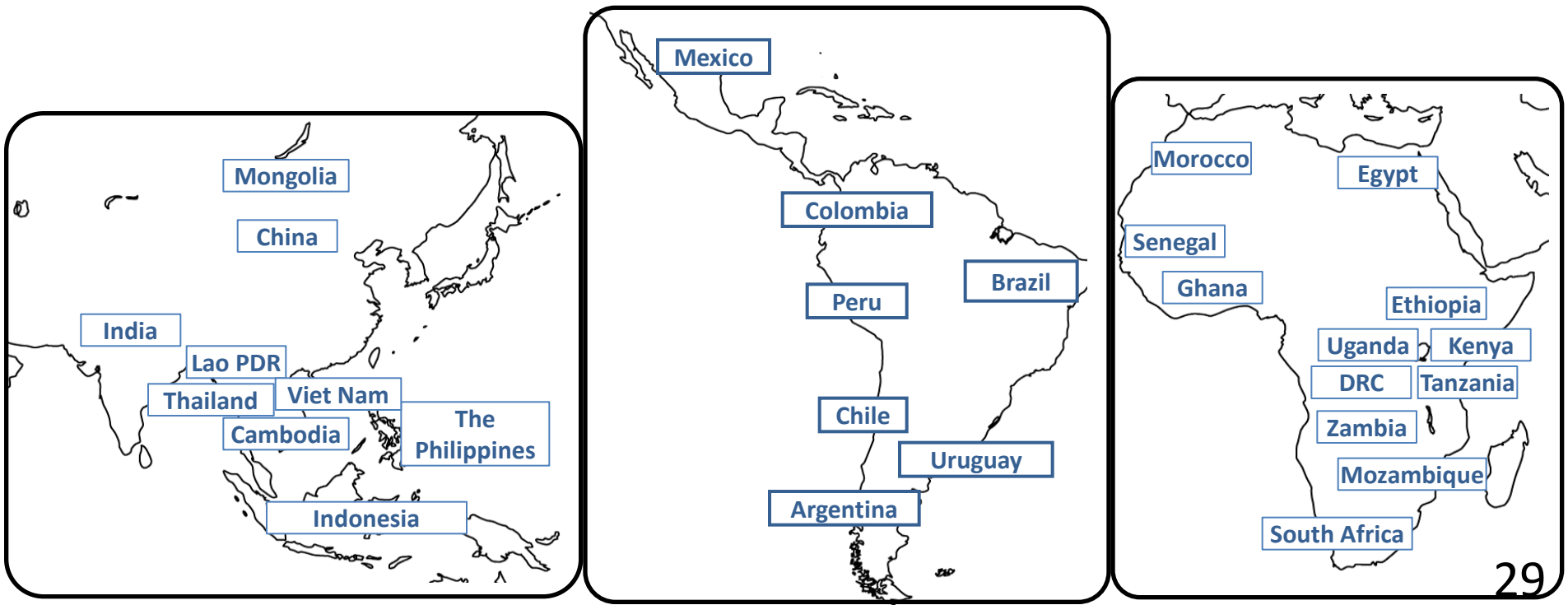
Capacity Building Activities by MOEJ (3/3)

Objectives:

- To develop robust but practically applicable MRV methodologies being employed in new market mechanisms such as the BOCM in a post-2012 framework.

- To support potential local verification entities and implement capacity building activities of MRV.

- To find out potential GHG emissions reduction projects / programmes for the BOCM.

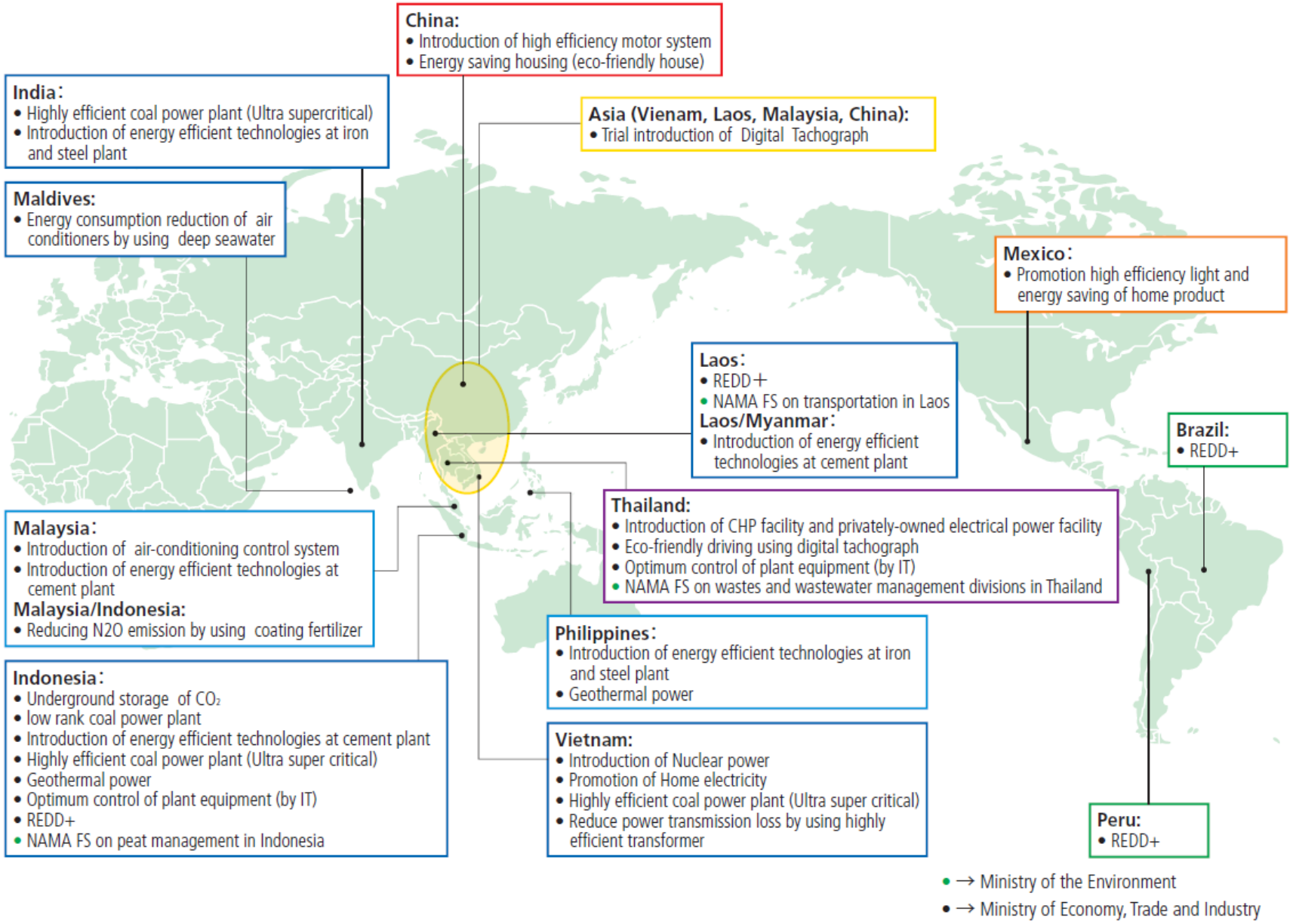


(Appendix)

- BOCM Feasibility Study by METI in FY2010
- BOCM Feasibility Study by METI in FY2011
- Feasibility Studies for potential BOCM projects/actions by MOEJ
- BOCM Feasibility Studies by MOEJ in FY2011

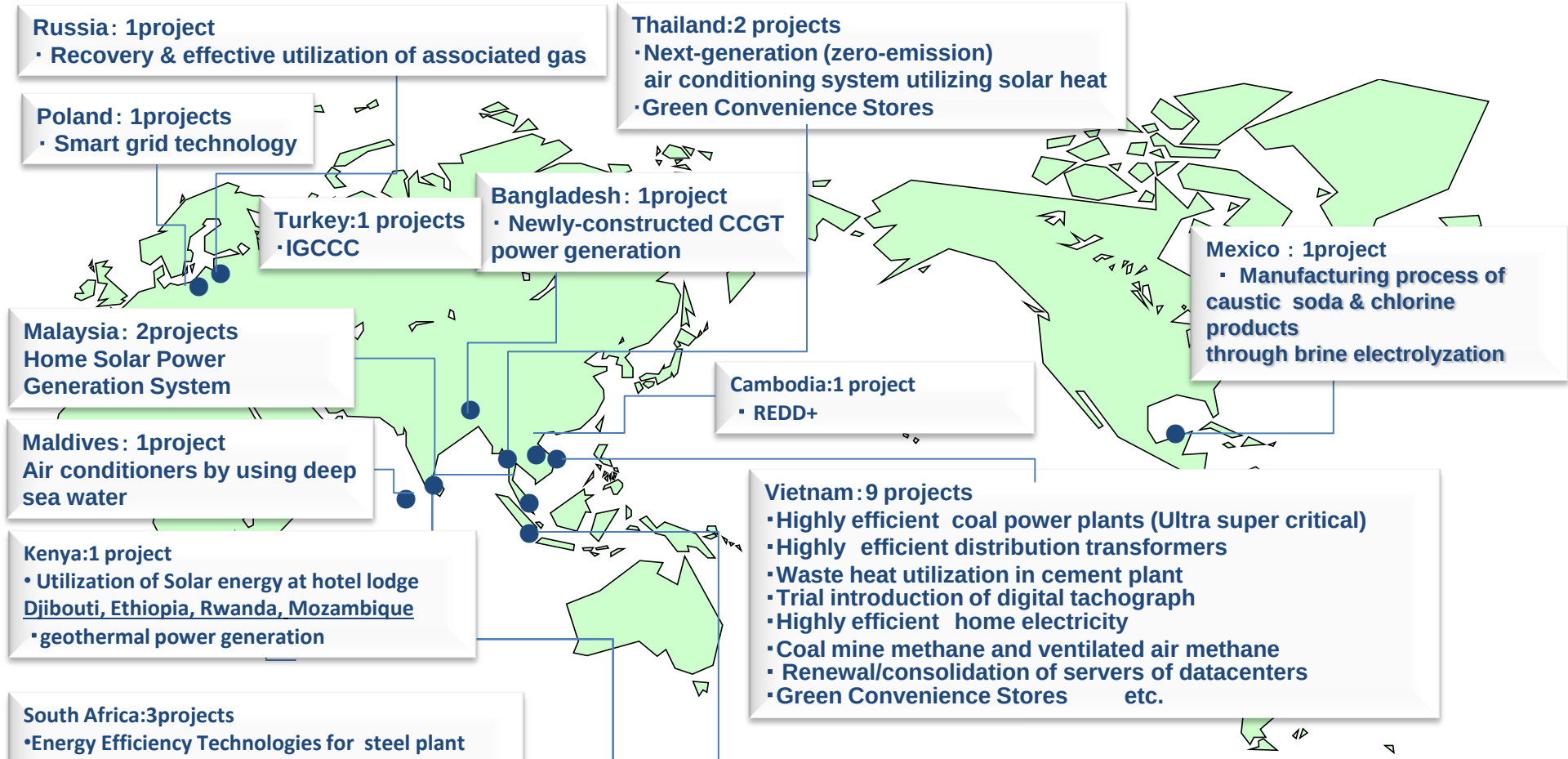
Appendix:BOCM Feasibility Study by METI in FY2010

METI FS : 30 projects were selected for FY2010(13 countries)



Appendix:BOCM Feasibility Study by METI in FY2011

METI FS : 50 projects were selected for FY2011(18 countries)



Russia: 1project
- Recovery & effective utilization of associated gas

Poland: 1projects
- Smart grid technology

Thailand:2 projects
- Next-generation (zero-emission) air conditioning system utilizing solar heat
- Green Convenience Stores

Turkey:1 projects
- IGCCC

Bangladesh: 1project
- Newly-constructed CCGT power generation

Mexico : 1project
- Manufacturing process of caustic soda & chlorine products through brine electrolyzation

Malaysia: 2projects
Home Solar Power Generation System

Cambodia:1 project
- REDD+

Maldives: 1project
Air conditioners by using deep sea water

Vietnam : 9 projects
- Highly efficient coal power plants (Ultra super critical)
- Highly efficient distribution transformers
- Waste heat utilization in cement plant
- Trial introduction of digital tachograph
- Highly efficient home electricity
- Coal mine methane and ventilated air methane
- Renewal/consolidation of servers of datacenters
- Green Convenience Stores etc.

Kenya:1 project
- Utilization of Solar energy at hotel lodge

Djibouti, Ethiopia, Rwanda, Mozambique
- geothermal power generation

South Africa:3projects
- Energy Efficiency Technologies for steel plant
- Highly efficient gas turbine etc.

India: 11 projects
- Energy Efficiency Technologies for Integrated steel works
- ACCC technology(Automatic coal control system)
- Highly efficient coal power plants(Ultra super critical)
- IGCCC
- Photovoltaic power generation
- Run-of-river micro hydro power project etc.

Indonesia: 18 projects
- Newly-constructed geothermal power generation
- Biomass boiler power
- CCS
- REDD+
- Low rank coal power/steam tube drying system
- SNG project (Substitute Natural Gas)
- High moisture fuel waste heat drying project in cement plants etc.

Appendix:Feasibility Studies for potential BOCM projects/actions by MOEJ

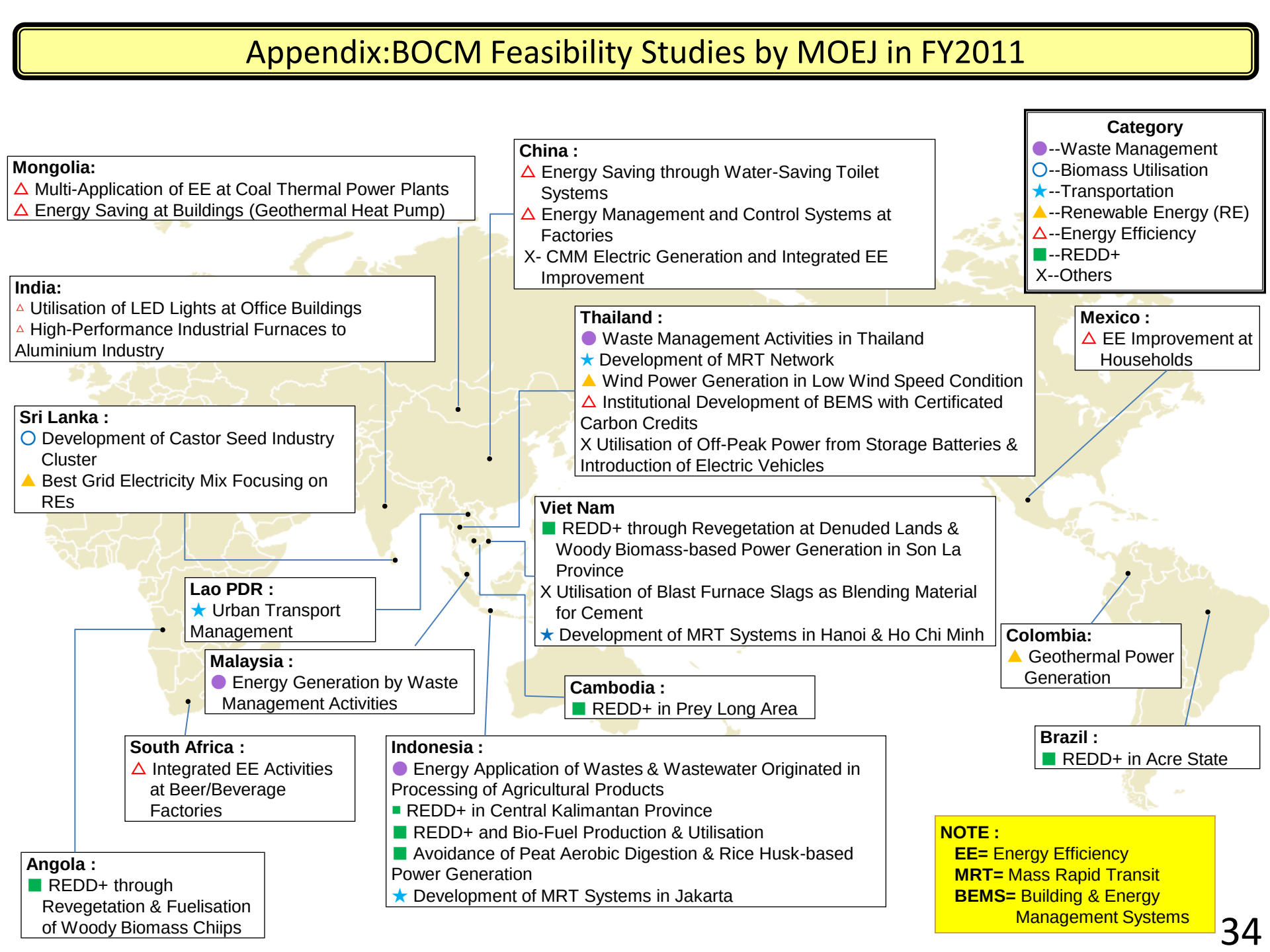
- Global Environment Centre Foundation (GEC) is serving as a secretariat for the FS.

- 29 projects were selected for FY2011.
  - 6 potential CDM projects were also selected, to contribute developing new methodologies, standardaized baselines and equitable geographical distribution of the CDM.
  - Relevant information are available at GEC website.

- Taskforces composed of experts for specific sectors (waste management, transportation, energy efficiency and REDD+) were set up and the FS is being performed under the guidance of the taskforces.

- Host country committees, were organized for some countries, in order to share mutual perspectives on the BOCM, by discussing FS projects in the country.

Appendix:BOCM Feasibility Studies by MOEJ 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

Brazil :
- ■ REDD+ in Acre State

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

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

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