Recent Development of The Joint Crediting Mechanism (JCM)

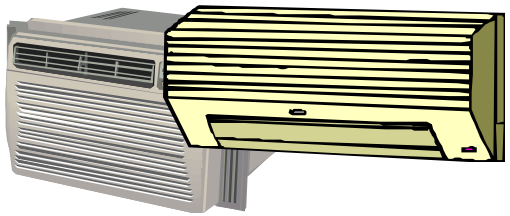
July 2013

Government of Japan

All ideas are subject to further consideration and discussion with host countries

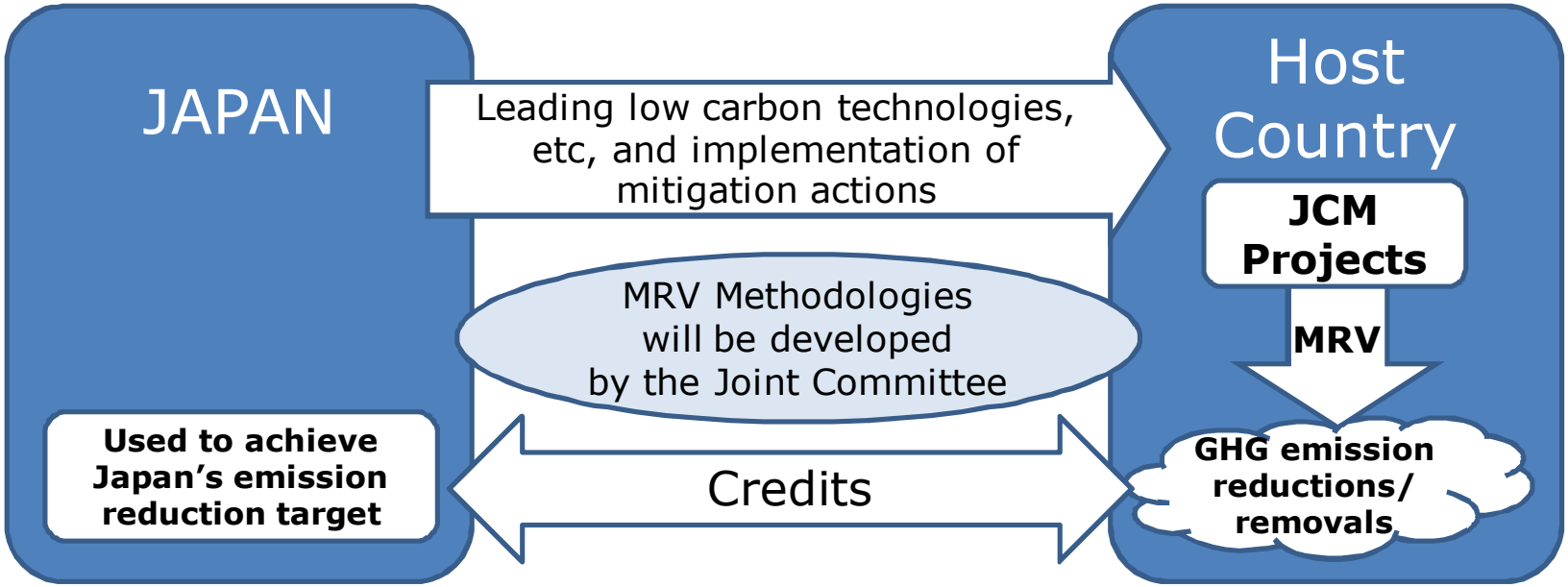
Low-Carbon Growth

- In order to effectively address the issue of climate change, it is necessary for both developed and developing countries to achieve low-carbon growth all around the world by fully mobilizing technology, markets and finance.
- Widespread use of advanced low-carbon technologies and products in various fields including renewable energy, highly efficient power generation, home electronics, low-emission vehicles, and energy-savings in factories must be accelerated.
- Realizing a low carbon society by combining these technologies and products with appropriate systems, services, and infrastructure is also crucial.

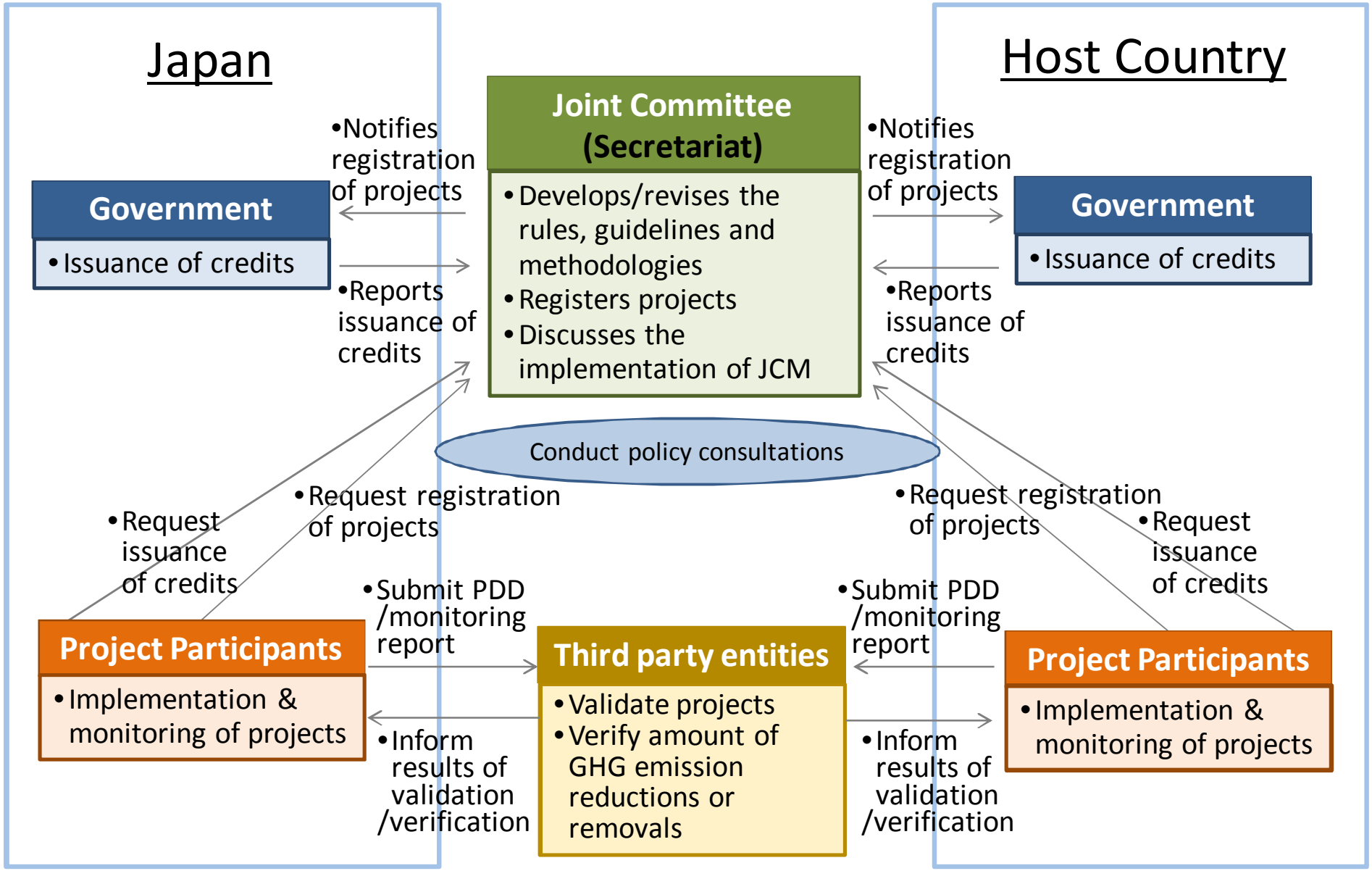


Basic Concept of the JCM

- Facilitating diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries.
- Appropriately evaluating contributions to GHG emission reductions or removals from Japan in a quantitative manner, by applying measurement, reporting and verification (MRV) methodologies, and use them to achieve Japan's emission reduction target.
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals, complementing the CDM.



Scheme of the JCM



The role of the Joint Committee and each Government

- The Joint Committee (JC) consists of representatives from both Governments.
- The JC develops rules and guidelines necessary for the implementation of the JCM.
- The JC determines either to approve or reject the proposed methodologies, as well as develops JCM methodologies.
- The JC designates the third-party entities (TPEs).
- The JC decides on whether to register JCM projects which have been validated by the TPEs.
- Each Government establishes and maintains a registry.
- On the basis of notification for issuance of credits by the JC, each Government issues the notified amount of credits to its registry.

Approaches of the JCM

- The JCM should be designed and implemented, taking into account the followings:

  (1) Ensuring the robust methodologies, transparency and the environmental integrity;

  (2) Maintaining simplicity and practicality based on the rules and guidelines;

  (3) Promoting concrete actions for global GHG emission reductions or removals;

  (4) Preventing uses of any mitigation projects registered under the JCM for the purpose of any other international climate mitigation mechanisms to avoid double counting on GHG emission reductions or removals.

Features of the JCM

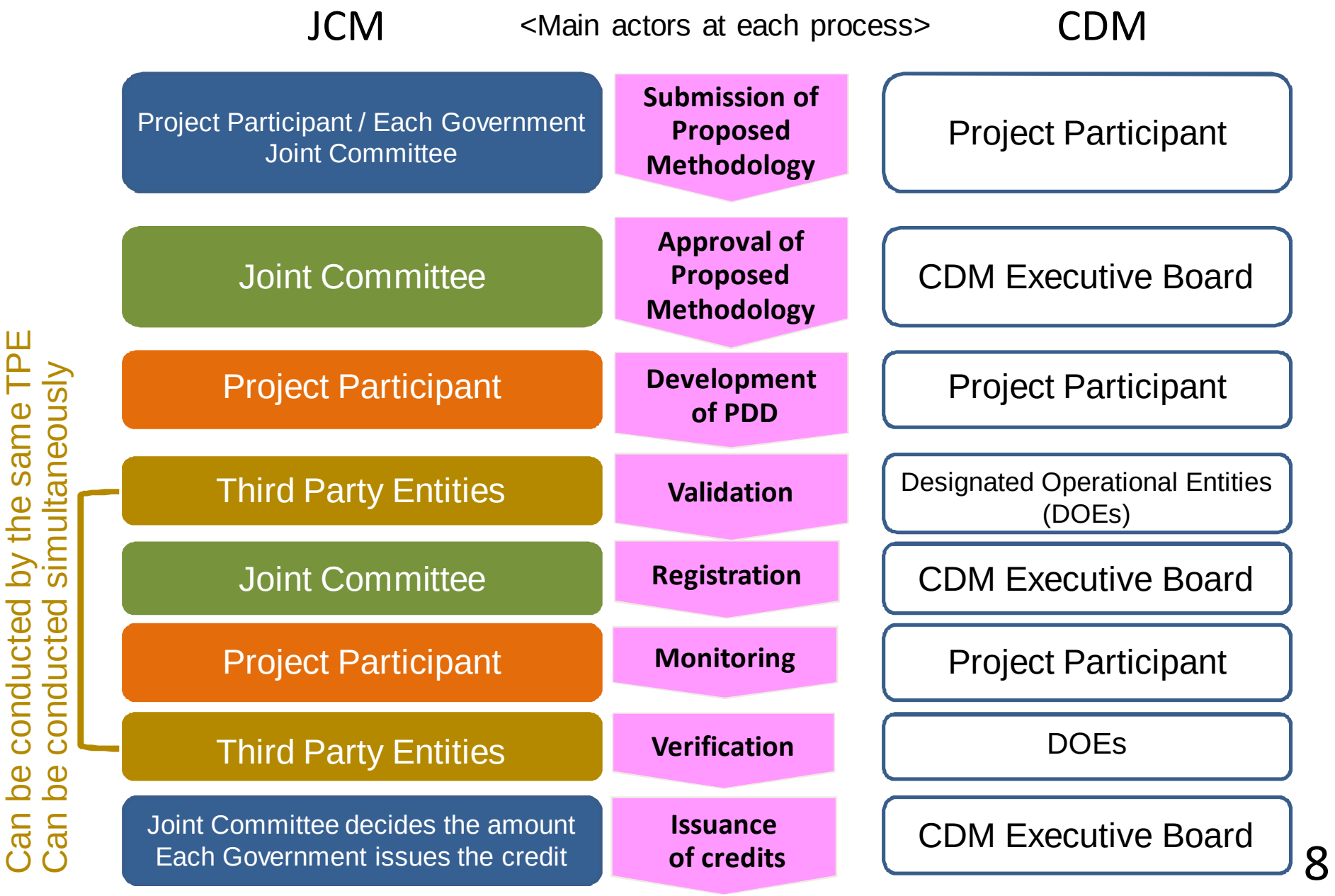
(1) The JCM starts its operation as the non-tradable credit type mechanism.

(2) Both Governments continue consultation for the transition to the tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.

(3) The JCM aims for concrete contributions to assisting adaptation efforts of developing countries after the JCM is converted to the tradable credit type mechanism.

(4) The JCM covers the period until a possible coming into effect of a new international framework under the UNFCCC.

Project Cycle of the JCM and the CDM

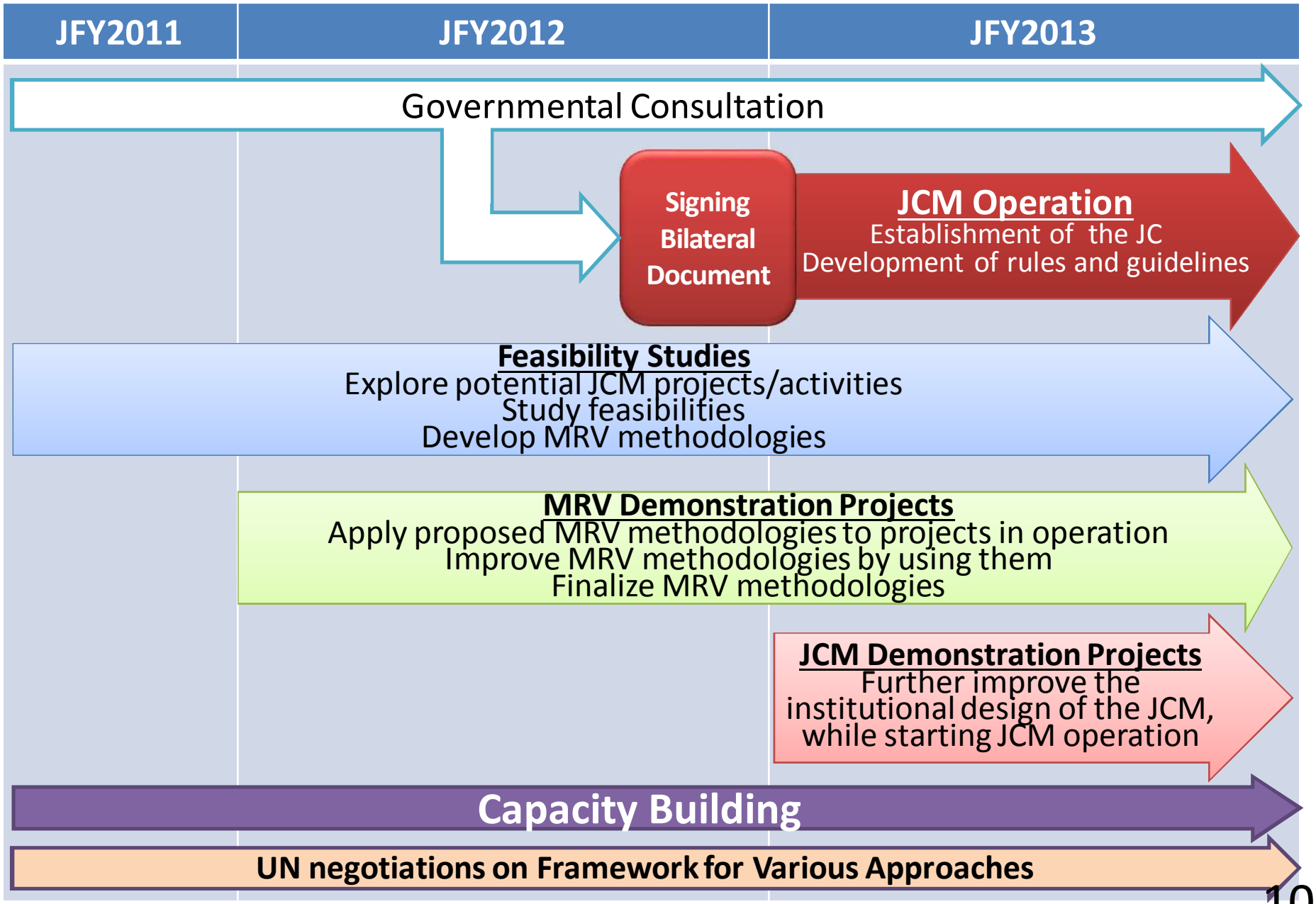


Key features of the JCM in comparison with the CDM

(Subject to further consideration and discussion with host countries)

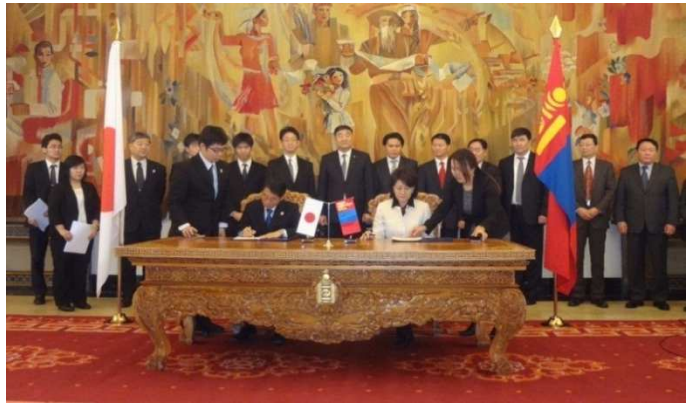
	JCM	CDM
Governance	- "de-centralized" structure (Each Government, Joint Committee)	- "centralized" structure (CMP, CDM Executive Board)
Sector/project Coverage	- Broader coverage	- Specific projects are difficult to implement in practice (e.g. USC coal-fired power generation)
Validation of projects	- In addition to DOEs, ISO14065 certification bodies can conduct - Checking whether a proposed project fits eligibility criteria which can be examined objectively	- Only DOEs can conduct - Assessment of additionality of each proposed project against hypothetical scenarios
Calculation of Emission Reductions	- Spreadsheet are provided - Default values can be used in conservative manner when monitored parameters are limited.	- Various formulas are listed - Strict requirements for measurement of parameters
Verification of projects	- The entity which validated the project can conduct verification - Validation & verification can be conducted simultaneously	- In principle, the entity which validated the project can not conduct verification - Validation & verification must be conducted separately

Roadmap for the JCM



Countries with which Japan has signed on bilateral documents

- Japan has held consultations for the JCM with developing countries since 2011 and signed the bilateral document for the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, and Viet Nam.



Mongolia On January 8, 2013（Ulaanbaatar）

Bangladesh
On March 19, 2013 (Dhaka)

Ethiopia
On May 27, 2013 (Addis Ababa)

Kenya On June 12,2013 (Nairobi)

Maldives On June 29, 2013 (Okinawa)

Viet Nam On July 2, 2013 (Hanoi)

- Japan will continue consultations/briefing with any countries which are interested in the JCM, i.a. with Asian countries such as Indonesia.
- Japan and Mongolia held the 1st Joint Committee.

Technical Details Currently Considered for the JCM

(Subject to further consideration and discussion with host countries)

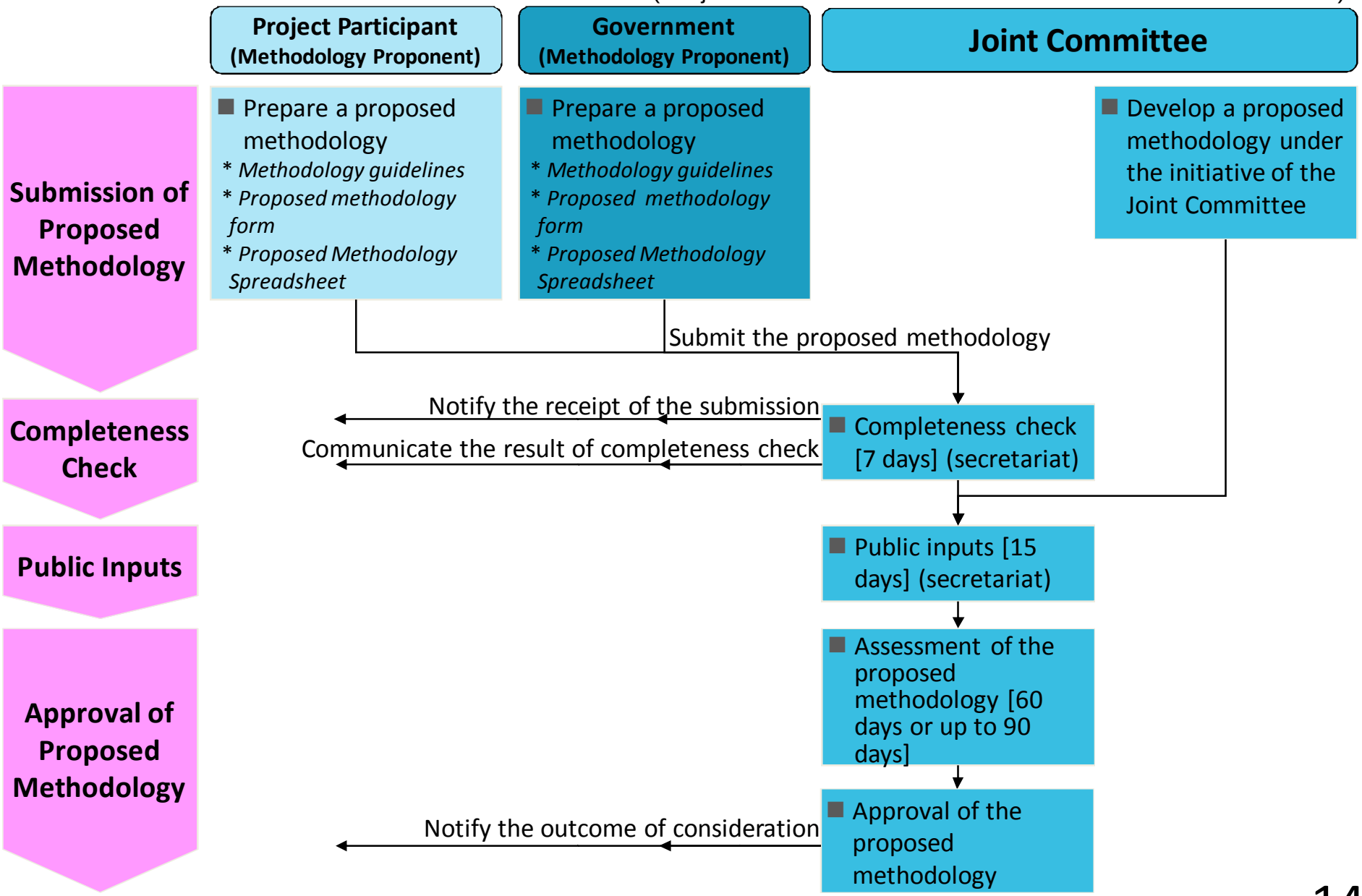
Necessary documents for the JCM

(Subject to further consideration and discussion with host countries)

		Rules and Guidelines
Overall		✓ Rules of Implementation ✓ Project Cycle Procedure ✓ Glossary of Terms ✓ Guidelines for Designation as a Third-Party Entity (TPE guidelines)
Joint Committee		✓ Rules of Procedures for the Joint Committee (JC rules)
Methodology		✓ Guidelines for Developing Proposed Methodology (methodology guidelines)
Project Procedures	**Developing a PDD**	✓ Guidelines for Developing Project Design Document and Monitoring Report (PDD and monitoring guidelines)
	Monitoring	
	Validation	✓ Guidelines for Validation and Verification (VV guidelines)
	Verification	

Methodology Development Procedure of the JCM

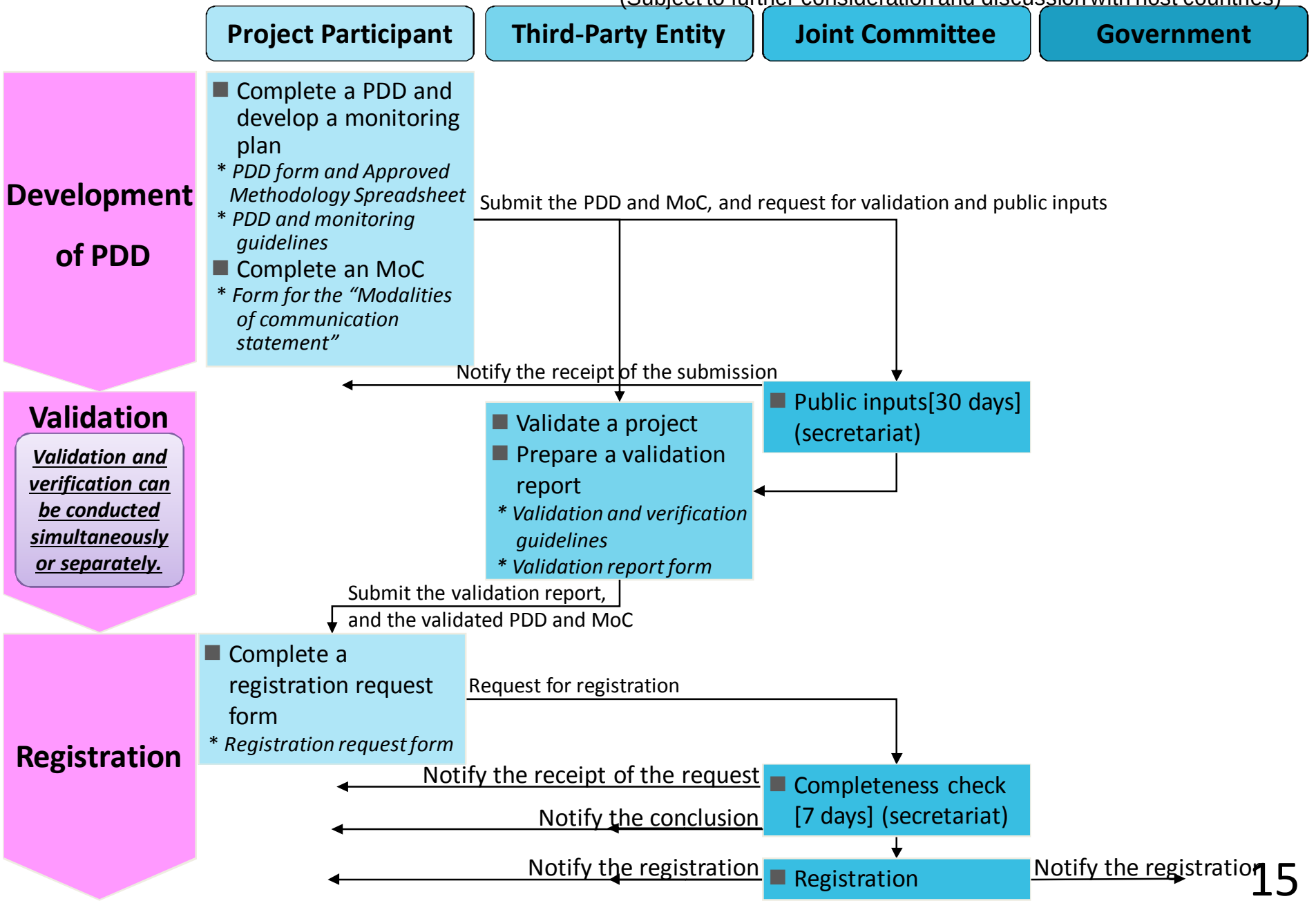
(Subject to further consideration and discussion with host countries)



Note: Asterisk (*) indicates documentation relevant for each step of the procedure

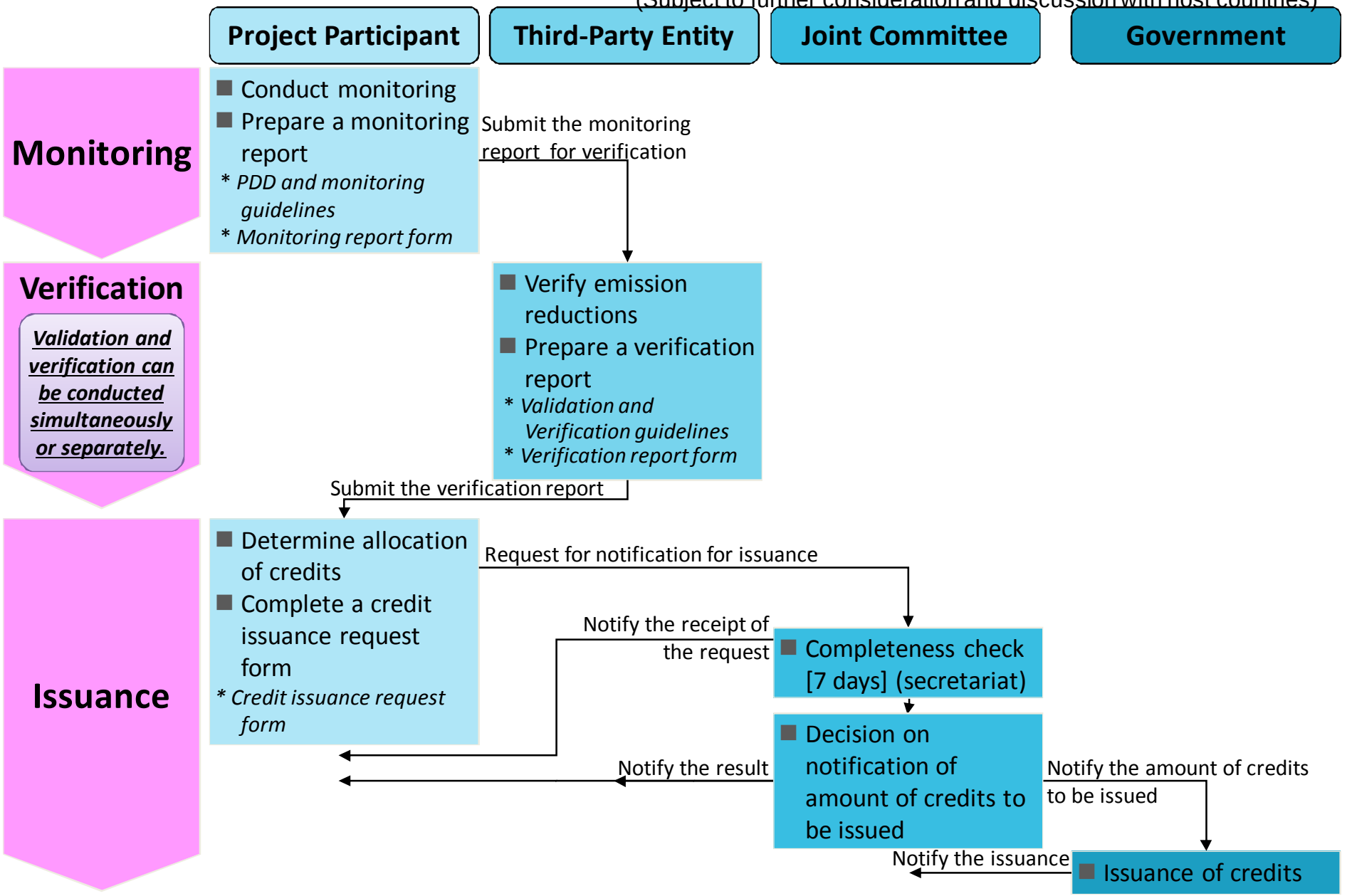
Project Cycle Procedure of the JCM (1/2)

(Subject to further consideration and discussion with host countries)



Project Cycle Procedure of the JCM (2/2)

(Subject to further consideration and discussion with host countries)



Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with host countries)

Members

- The Joint Committee (JC) consists of representatives from both Governments.
- Each Government designates members, which may not exceed [10].
- The JC has two Co-chairs to be appointed by each government (one from the host country and the other from Japan). Each Co-Chair can designate an alternate from members of the JC.

Decision making in the JC

- The JC meets no less than once a year and decision by the JC is adopted by consensus.
- The JC may adopt decisions by electronic means in the following procedure:
  (a) The proposed decisions are distributed by the Co-Chairs to all members of the JC.
  (b) The proposed decision is deemed as adopted when,
    i) no member of the JC has provided negative assertion within [20] calendar days after distribution and both Co-Chairs have made affirmative assertion, or
    ii) all members of the JC have made affirmative assertion.
- If a negative assertion is made by one of the JC members, the Co-Chairs take into account the opinion of the member and take appropriate actions.
- The JC may hold conference calls to assist making decisions by electronic means.

External assistance

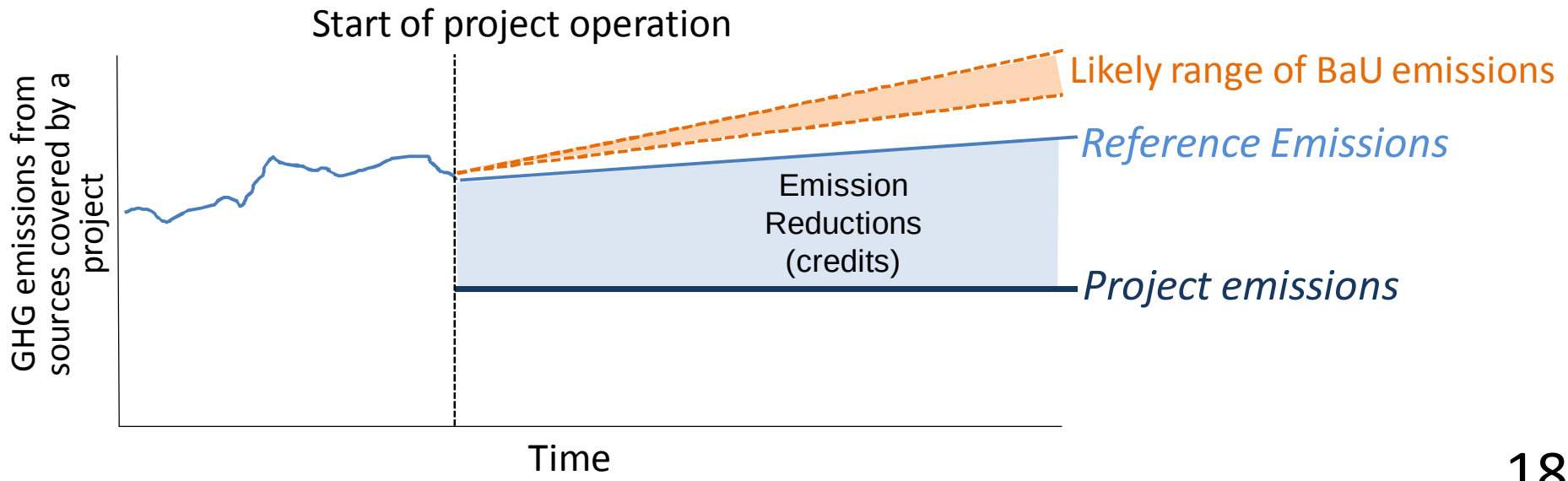
- The JC may establish panels and appoint external experts to assist part of its work.

Languages: English **Secretariat:** The secretariat services the JC.
Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.
Record of the meeting: The full text of all decisions of the JC is made publicly available.

Basic Concept for Crediting under the JCM

(Subject to further consideration and discussion with host countries)

- In the JCM, emission reductions to be credited are defined as the difference between "reference emissions" and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the proposed JCM project in the host country.
- This approach will ensure a net decrease and/or avoidance of GHG emissions.



Crediting Threshold

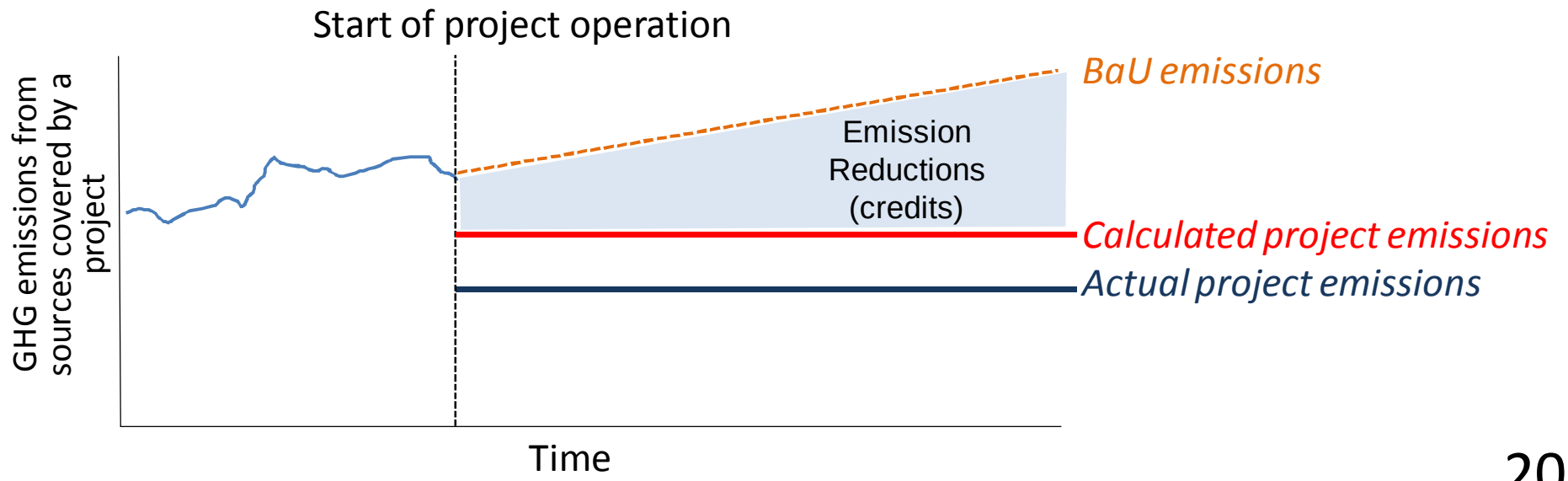
(Subject to further consideration and discussion with host countries)

- Reference emissions are calculated by multiplying a "crediting threshold" which is typically expressed as GHG emissions per unit of output by total outputs.
- A crediting threshold should be established *ex ante* in the methodology applicable for the same project type in the host country. It should also be established conservatively in order to calculate reference emissions below BaU emissions.
- This standardized approach will greatly reduce the burden of analyzing many hypothetical scenarios for demonstrating additionality of the proposed project such as under the CDM, whereas increase transparency for calculating GHG emission reductions.

Addendum: ways to realize net reduction

(Subject to further consideration and discussion with host countries)

- A net decrease and/or avoidance of GHG emissions can be realized in alternative way, instead of calculating the reference emissions below BaU emissions.
- Using conservative default values in parameters to calculate project emissions instead of monitoring actual values, will lead calculated project emissions larger than actual project emissions.
- This approach will also ensure a net decrease and/or avoidance of GHG emissions, as well as reduce burdens of monitoring.



JCM Methodology

- Key Features of the JCM methodology
  - ➢The JCM methodologies are designed in such a way that project participants can use them easily and verifiers can verify the data easily.
  - ➢In order to reduce monitoring burden, default values are widely used in a conservative manner.
  - ➢Eligibility criteria clearly defined in the methodology can reduce the risks of rejection of the projects proposed by project participants.

Eligibility criteria	• A “check list” will allow easy determination of eligibility of a proposed project under the JCM and applicability of JCM methodologies to the project.
Data (parameter)	• List of parameters will inform project participants of what data is necessary to calculate GHG emission reductions/removals with JCM methodologies. • Default values for specific country and sector are provided beforehand.
Calculation	• Premade spreadsheets will help calculate GHG emission reductions/removals automatically by inputting relevant values for parameters, in accordance with methodologies.

Basic concept of Eligibility criteria in JCM methodology

(Subject to further consideration and discussion with host countries)

The eligibility criteria in each JCM methodology should be established, in order to reduce emissions by:

- accelerating the deployment of low carbon technologies, products and services, which will contribute to achieving net emission reductions;
- facilitating the nationally appropriate mitigation actions (NAMAs) in host countries.

1. Both Governments determine what technologies, products, etc should be included in the eligibility criteria through the approval process of the JCM methodologies by the Joint Committee.

2. Project participants can use the list of approved JCM methodologies, similar to positive list, when applying for the JCM project registration.

Eligibility Criteria of the JCM

(Subject to further consideration and discussion with host countries)

- Eligibility criteria in JCM methodologies shall contain the following:
  1. The requirements for the project in order to be registered as a JCM project. *<Basis for the assessment of validation and registration of a proposed project>*
  2. The requirements for the project to be able to apply the JCM methodology. *<same as "applicability condition of the methodology" under the CDM>*
- Examples of eligibility criteria 1.
  - Introduction of *xx* (products/technologies) whose design efficiency is above *xx* (e.g. output/kWh) *<Benchmark Approach>*
  - Introduction of *xx* (specific high efficient products/technologies, such as air conditioner with inverter, electric vehicles, or PV combined with battery) *<Positive List Approach>*
- Examples of eligibility criteria 2.
  - Existence of historical data for *x* year(s)
  - Electricity generation by *xx* (e.g. PV, wind turbine) connected to the grid
  - Retrofit of the existing boiler

Image of Eligibility criteria

- Simple check list is provided for project participants to determine the eligibility of a proposed project under the JCM and applicability of the methodology.
- All the criteria have to be met in order to apply a methodology.

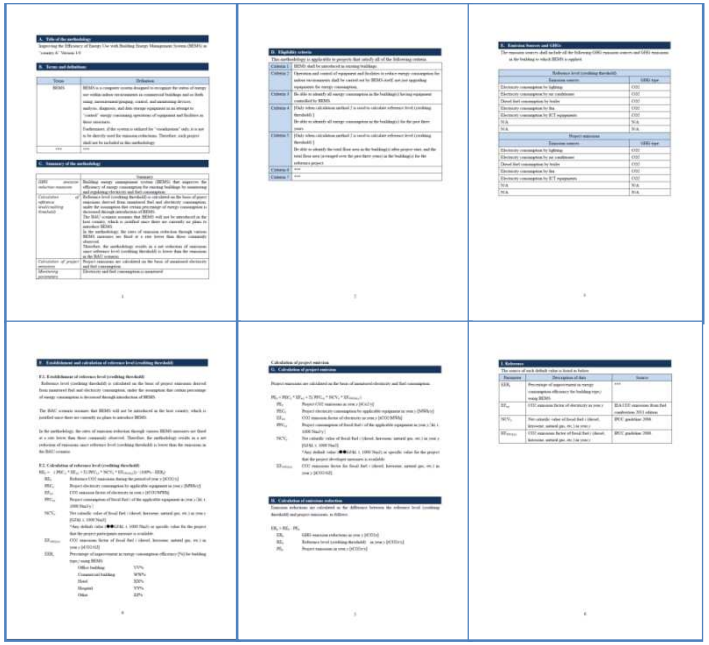
Example: Building energy management system	
Criterion 1	• Energy Management System is to be introduced in already existing buildings.
Criterion 2	• The operation and control of equipment and facilities to reduce energy consumption for indoor environments are to be carried out by Energy Management System itself, not just upgrading equipments for energy consumption.
Criterion 3	• Be able to identify all energy consumption in the building(s) having equipment controlled by Energy Management System.

Overview of JCM Methodology, Monitoring Plan and Monitoring Report

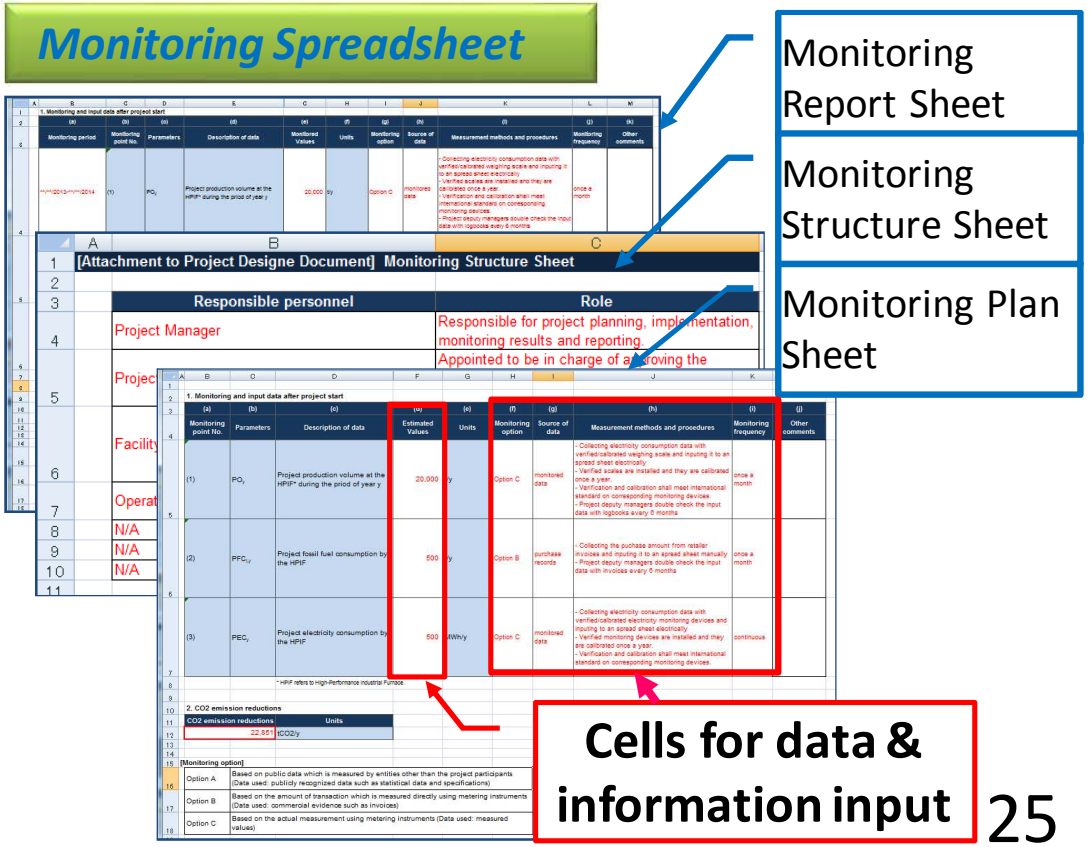
(Subject to further consideration and discussion with host countries)

- JCM methodology consists of the followings.
  - Approved Methodology Document
  - Monitoring Spreadsheet
    - Monitoring Plan Sheet (including Input Sheet & Calculation Process Sheet)
    - Monitoring Structure Sheet
    - Monitoring Report Sheet (including Input Sheet & Calculation Process Sheet)

Approved Methodology Document



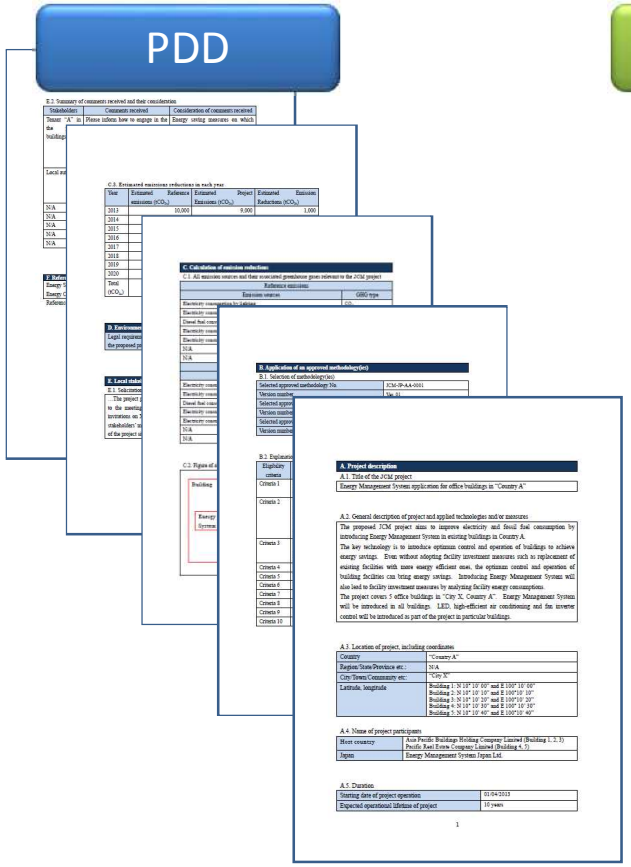
Monitoring Spreadsheet

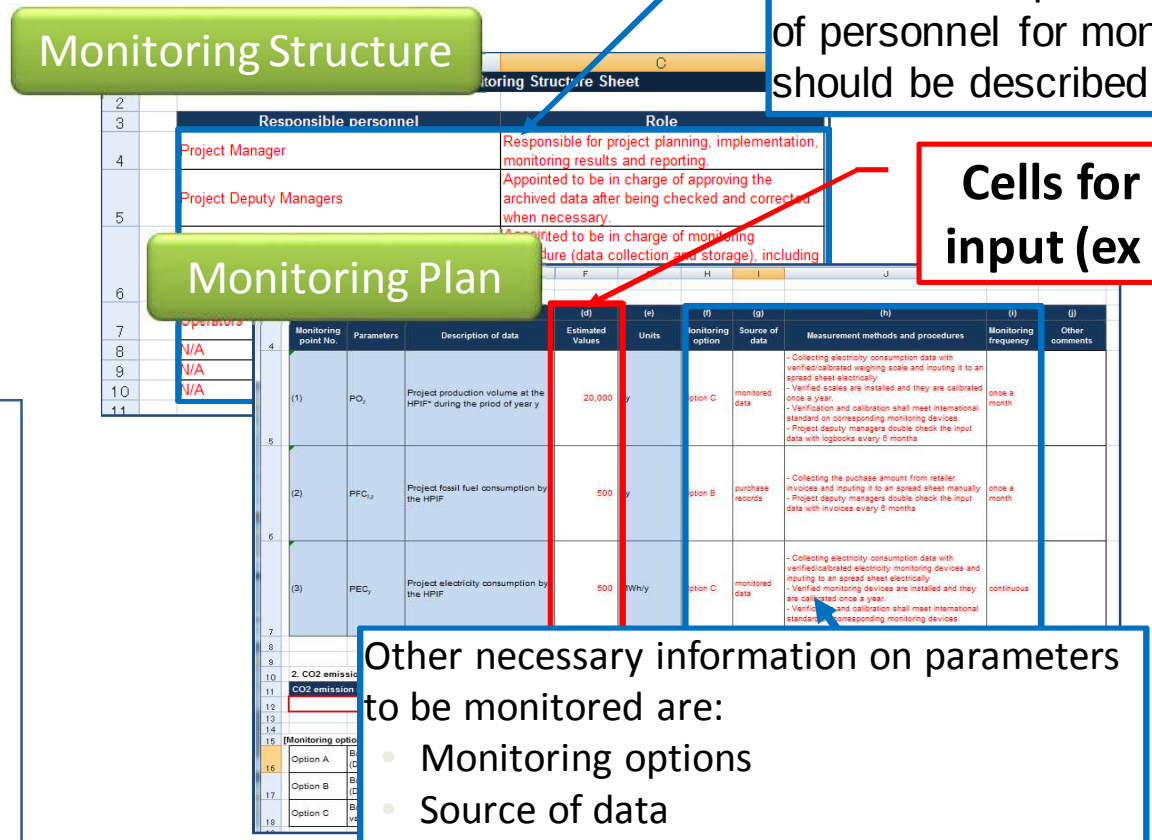


PDD and Monitoring Plan

(Subject to further consideration and discussion with host countries)

- Developing a Project Design Document (PDD) and a Monitoring Plan
  - ➢A PDD form should be filled in with information of the proposed project.
  - ➢A Monitoring Plan consists of Monitoring Plan Sheet and Monitoring Structure Sheet, and it should be filled in as well.





Monitoring Report

(Subject to further consideration and discussion with host countries)

- Making a Monitoring Report
  - ➢A Monitoring Report should be made by filling cells for data input (ex post) in the Monitoring Report Sheet with monitored values.
  - ➢Project participants prepare supporting documents which include evidence for stated values in the cells for data input.

Monitoring Report

Monitoring period

Cells for data input (ex post)

(a) Monitoring period	(b) Monitoring point No.	(c) Parameters	(d) Description of data	(e) Monitored Values	(f) Units	(g) Monitoring option	(h) Source of data	(i) Measurement methods and procedures	(j) Monitoring frequency	(k) Other comments
//2013-**/**/2014	(1)	PO_y	Project production volume at the HPIF* during the priod of year y	20,000	t/y	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated weighing scale and inputing it to an spread sheet electrically - Verified scales are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices. - Project deputy managers double check the input data with logbooks every 6 months	once a month	
//2013-**/**/2014	(2)	PFO_y	Project fossil fuel consumption by the HPIF	500	t/y	Option B	purchase records	- Collecting the purchase amount from retailer invoices and inputing it to an spread sheet manually - Project deputy managers double check the input data with invoices every 6 months	once a month	
N/A	(3)	PEC_y	Project electricity consumption by the HPIF	500	MWh/y	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputing to an spread sheet electrically - Verified monitoring devices are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices.	continuous	

* HPIF refers to High-Performance Industrial Furnace.

2. CO2 emission reductions

CO2 emission reductions	Units
22,851	tCO2/y

[Monitoring option]

Option A	Based on public data which is measured by entities other than the proj... used: publicly recognized data such as statistical data and specificati...
Option B	Based on the amount of transaction which is measured directly using ... used: commercial evidence such as invoices)
Option C	Based on the actual measurement using metering instruments (Data us...

Other necessary information on monitored parameters are to be filled in:

- Monitoring options
- Source of data
- Measurement methods and procedures
- Monitoring frequency

Possible Contents of the JCM PDD

(Subject to further consideration and discussion with host countries)

A. Project description
- A.1. Title of the JCM project
- A.2. General description of project and applied technologies and/or measures
- A.3. Location of project, including coordinates
- A.4. Name of project participants
- A.5. Duration
- A.6. Contribution from developed countries

B. Application of an approved JCM methodology(ies)
- B.1. Selection of JCM methodology(ies)
- B.2. Explanation of how the project meets eligibility criteria of the approved methodology

C. Calculation of emission reductions
- C.1. All emission sources and their associated greenhouse gases relevant to the JCM project
- C.2. Figure of all emission sources and monitoring points relevant to the JCM project
- C.3. Estimated emissions reductions in each year

D. Environmental impact assessment

E. Local Stakeholder consultation
- E.1. Solicitation of comments from local stakeholders
- E.2. Summary of comments received and their consideration

F. References

Annex

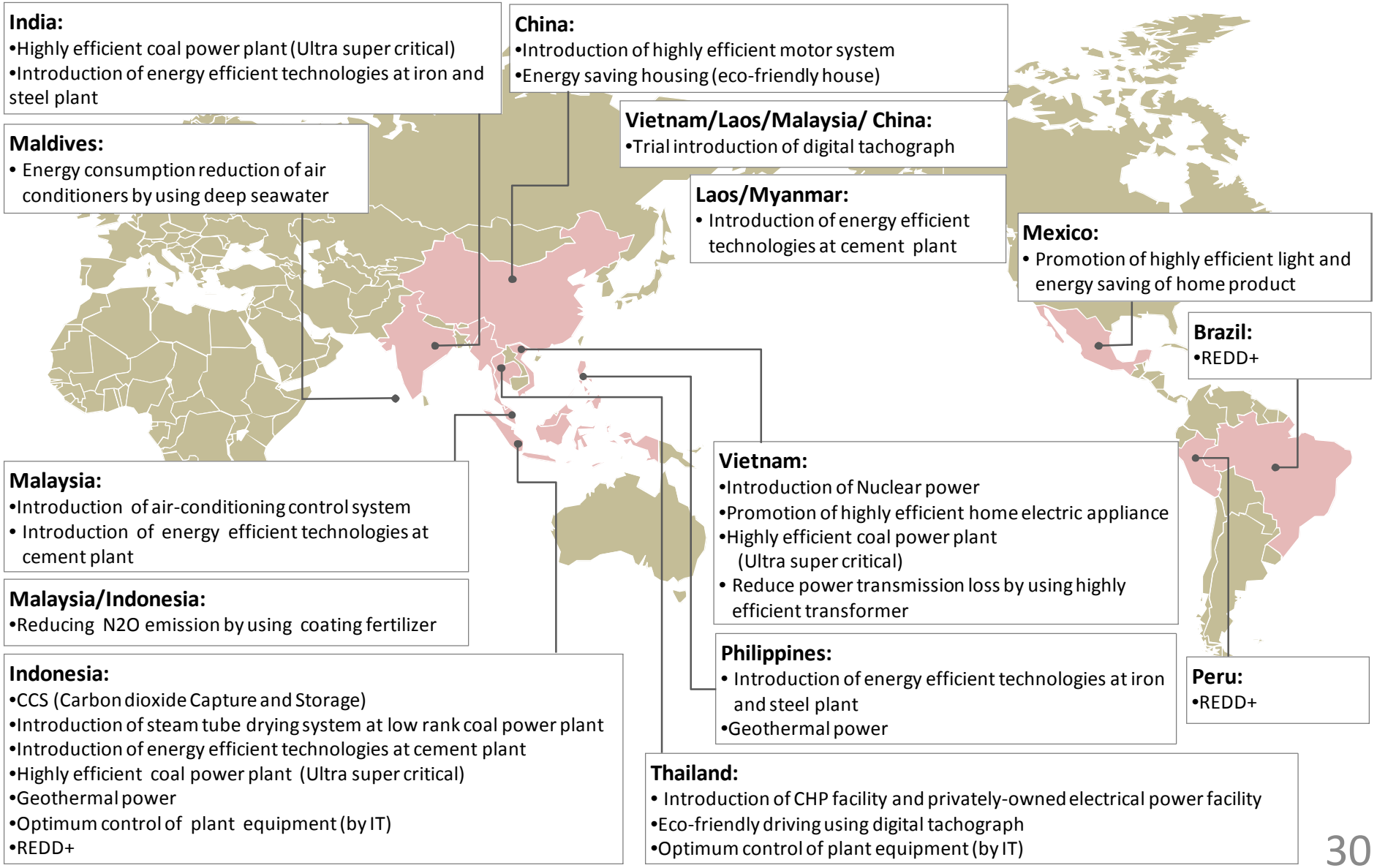
Approved Methodology Spreadsheet consists of Monitoring Plan Sheet, Monitoring Structure Sheet and Monitoring Report Sheet, and it shall be attached to the PDD.

References

- Feasibility Studies
- Capacity Building

JCM Feasibility Studies (FSs) by METI in FY2010

30 projects were selected (13 countries)



India:
- Highly efficient coal power plant (Ultra super critical)
- Introduction of energy efficient technologies at iron and steel plant

China:
- Introduction of highly efficient motor system
- Energy saving housing (eco-friendly house)

Vietnam/Laos/Malaysia/ China:
- Trial introduction of digital tachograph

Laos/Myanmar:
- Introduction of energy efficient technologies at cement plant

Maldives:
- Energy consumption reduction of air conditioners by using deep seawater

Mexico:
- Promotion of highly efficient light and energy saving of home product

Brazil:
- REDD+

Malaysia:
- Introduction of air-conditioning control system
- Introduction of energy efficient technologies at cement plant

Malaysia/Indonesia:
- Reducing N2O emission by using coating fertilizer

Vietnam:
- Introduction of Nuclear power
- Promotion of highly efficient home electric appliance
- Highly efficient coal power plant (Ultra super critical)
- Reduce power transmission loss by using highly efficient transformer

Philippines:
- Introduction of energy efficient technologies at iron and steel plant
- Geothermal power

Peru:
- REDD+

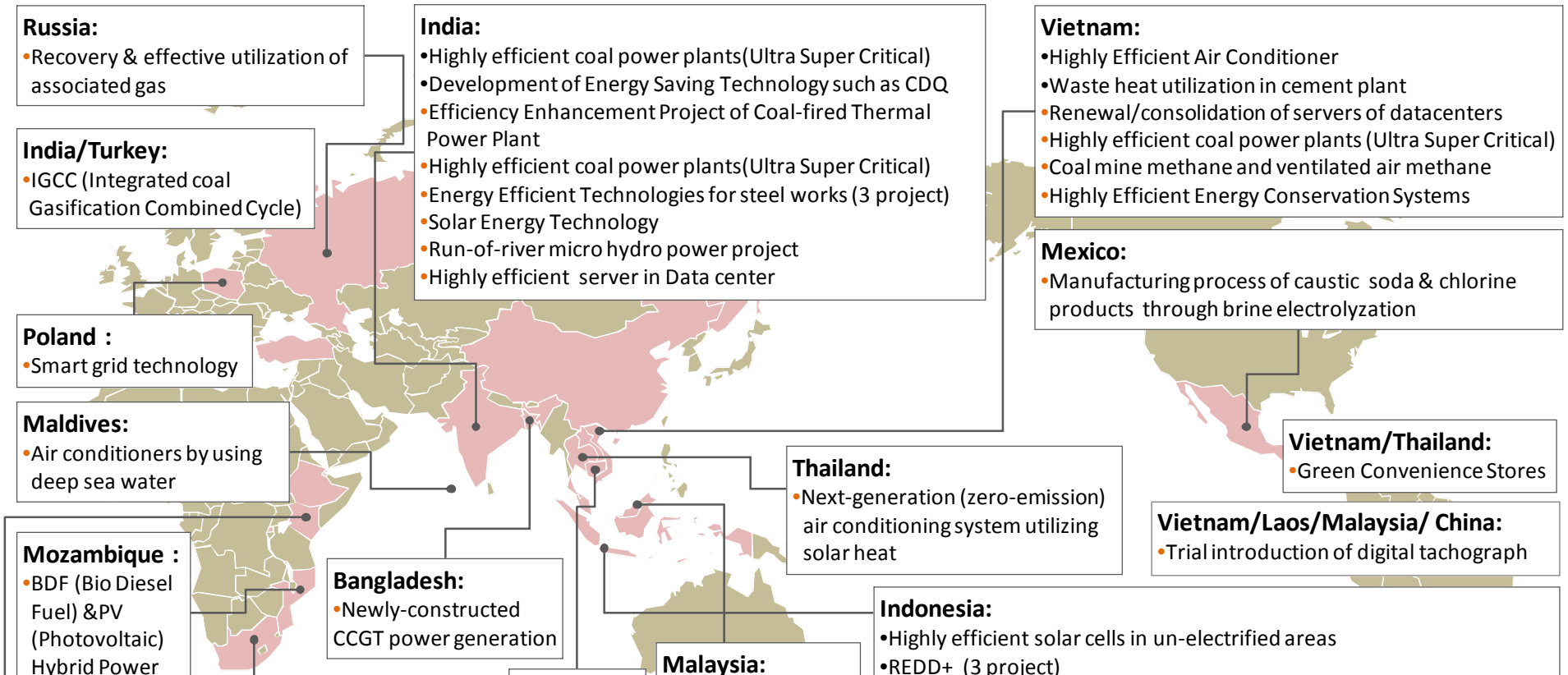
Indonesia:
- CCS (Carbon dioxide Capture and Storage)
- Introduction of steam tube drying system at low rank coal power plant
- Introduction of energy efficient technologies at cement plant
- Highly efficient coal power plant (Ultra super critical)
- Geothermal power
- Optimum control of plant equipment (by IT)
- REDD+

Thailand:
- Introduction of CHP facility and privately-owned electrical power facility
- Eco-friendly driving using digital tachograph
- Optimum control of plant equipment (by IT)

JCM Feasibility Studies (FSs) by METI & NEDO in FY2011

50 projects were selected (18 countries)

- (Black) → METI's FSs for Policy Recommendation (10 projects)
- (Yellow) → NEDO's FSs for Project Exploration /Development(40 projects)



Russia:
- Recovery & effective utilization of associated gas

India/Turkey:
- IGCC (Integrated coal Gasification Combined Cycle)

India:
- Highly efficient coal power plants(Ultra Super Critical)
- Development of Energy Saving Technology such as CDQ
- Efficiency Enhancement Project of Coal-fired Thermal Power Plant
- Highly efficient coal power plants(Ultra Super Critical)
- Energy Efficient Technologies for steel works (3 project)
- Solar Energy Technology
- Run-of-river micro hydro power project
- Highly efficient server in Data center

Vietnam:
- Highly Efficient Air Conditioner
- Waste heat utilization in cement plant
- Renewal/consolidation of servers of datacenters
- Highly efficient coal power plants (Ultra Super Critical)
- Coal mine methane and ventilated air methane
- Highly Efficient Energy Conservation Systems

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

Poland :
- Smart grid technology

Maldives:
- Air conditioners by using deep sea water

Thailand:
- Next-generation (zero-emission) air conditioning system utilizing solar heat

Vietnam/Thailand:
- Green Convenience Stores

Vietnam/Laos/Malaysia/ China:
- Trial introduction of digital tachograph

Mozambique :
- BDF (Bio Diesel Fuel) &PV (Photovoltaic) Hybrid Power Generation System

Bangladesh:
- Newly-constructed CCGT power generation

Cambodia:
- REDD+

Malaysia:
- Home Solar Power Generation System

Indonesia:
- Highly efficient solar cells in un-electrified areas
- REDD+ (3 project)
- Introduction of energy efficient technologies at cement plant
- Newly-constructed geothermal power generation
- Introduction of steam tube drying system at low rank coal power plant
- SNG project (Substitute Natural Gas)
- Biomass Boiler Power Generation Project
- CCS (Carbon dioxide Capture and Storage)
- Small Hydroelectric Generation
- Eco-shipping for Coastal Cement Tanker
- Flash and Binary Geothermal Power Generation Plants
- Energy Consumption Optimization at Facilities using IT
- Optimum control of plant equipment (by IT)
- Hydro power project renovation

Kenya:
- Utilization of Solar energy at hotel lodge

Malaysia/Indonesia:
- Reducing N2O emission by using coating fertilizer

Djibouti, Ethiopia, Rwanda:
- Geothermal power generation

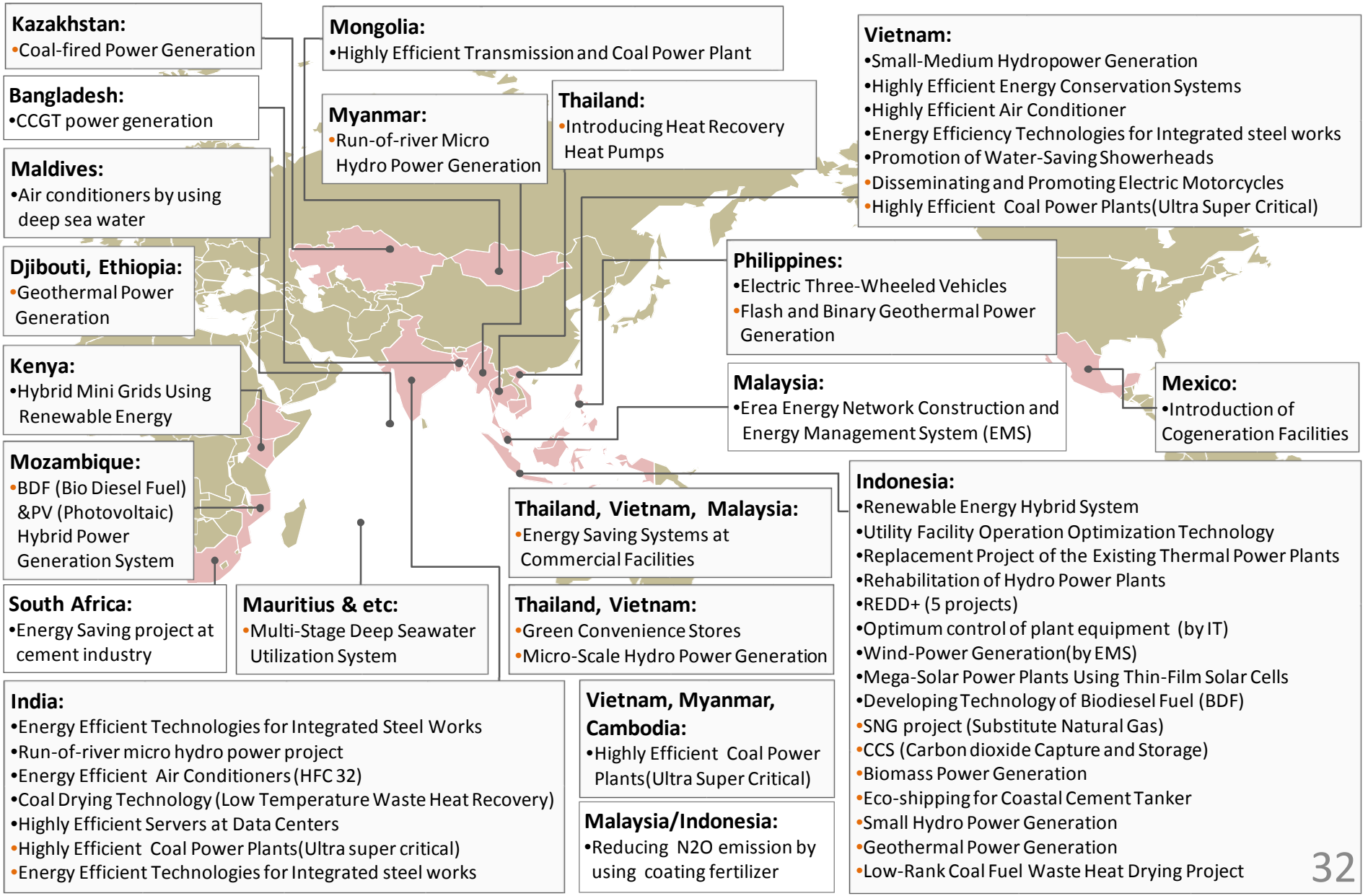
Vietnam/ Indonesia / South Africa :
- Introduction of highly-efficient Distribution Transformer introduction

South Africa:
- Energy Efficient Technologies for steel plant
- Highly efficient gas turbine

JCM Feasibility Studies (FSs) by METI & NEDO in FY2012

54 projects were selected (19 countries)

- (Black) → METI's FSs for Policy Recommendation (33 projects)
- (Yellow) → NEDO's FSs for Project Exploration /Development (21 projects)



Kazakhstan:
- Coal-fired Power Generation

Bangladesh:
- CCGT power generation

Maldives:
- Air conditioners by using deep sea water

Djibouti, Ethiopia:
- Geothermal Power Generation

Kenya:
- Hybrid Mini Grids Using Renewable Energy

Mozambique:
- BDF (Bio Diesel Fuel) &PV (Photovoltaic) Hybrid Power Generation System

South Africa:
- Energy Saving project at cement industry

Mauritius & etc:
- Multi-Stage Deep Seawater Utilization System

India:
- Energy Efficient Technologies for Integrated Steel Works
- Run-of-river micro hydro power project
- Energy Efficient Air Conditioners (HFC 32)
- Coal Drying Technology (Low Temperature Waste Heat Recovery)
- Highly Efficient Servers at Data Centers
- Highly Efficient Coal Power Plants(Ultra super critical)
- Energy Efficient Technologies for Integrated steel works

Mongolia:
- Highly Efficient Transmission and Coal Power Plant

Myanmar:
- Run-of-river Micro Hydro Power Generation

Thailand:
- Introducing Heat Recovery Heat Pumps

Thailand, Vietnam, Malaysia:
- Energy Saving Systems at Commercial Facilities

Thailand, Vietnam:
- Green Convenience Stores
- Micro-Scale Hydro Power Generation

Vietnam, Myanmar, Cambodia:
- Highly Efficient Coal Power Plants(Ultra Super Critical)

Malaysia/Indonesia:
- Reducing N2O emission by using coating fertilizer

Vietnam:
- Small-Medium Hydropower Generation
- Highly Efficient Energy Conservation Systems
- Highly Efficient Air Conditioner
- Energy Efficiency Technologies for Integrated steel works
- Promotion of Water-Saving Showerheads
- Disseminating and Promoting Electric Motorcycles
- Highly Efficient Coal Power Plants(Ultra Super Critical)

Philippines:
- Electric Three-Wheeled Vehicles
- Flash and Binary Geothermal Power Generation

Malaysia:
- Erea Energy Network Construction and Energy Management System (EMS)

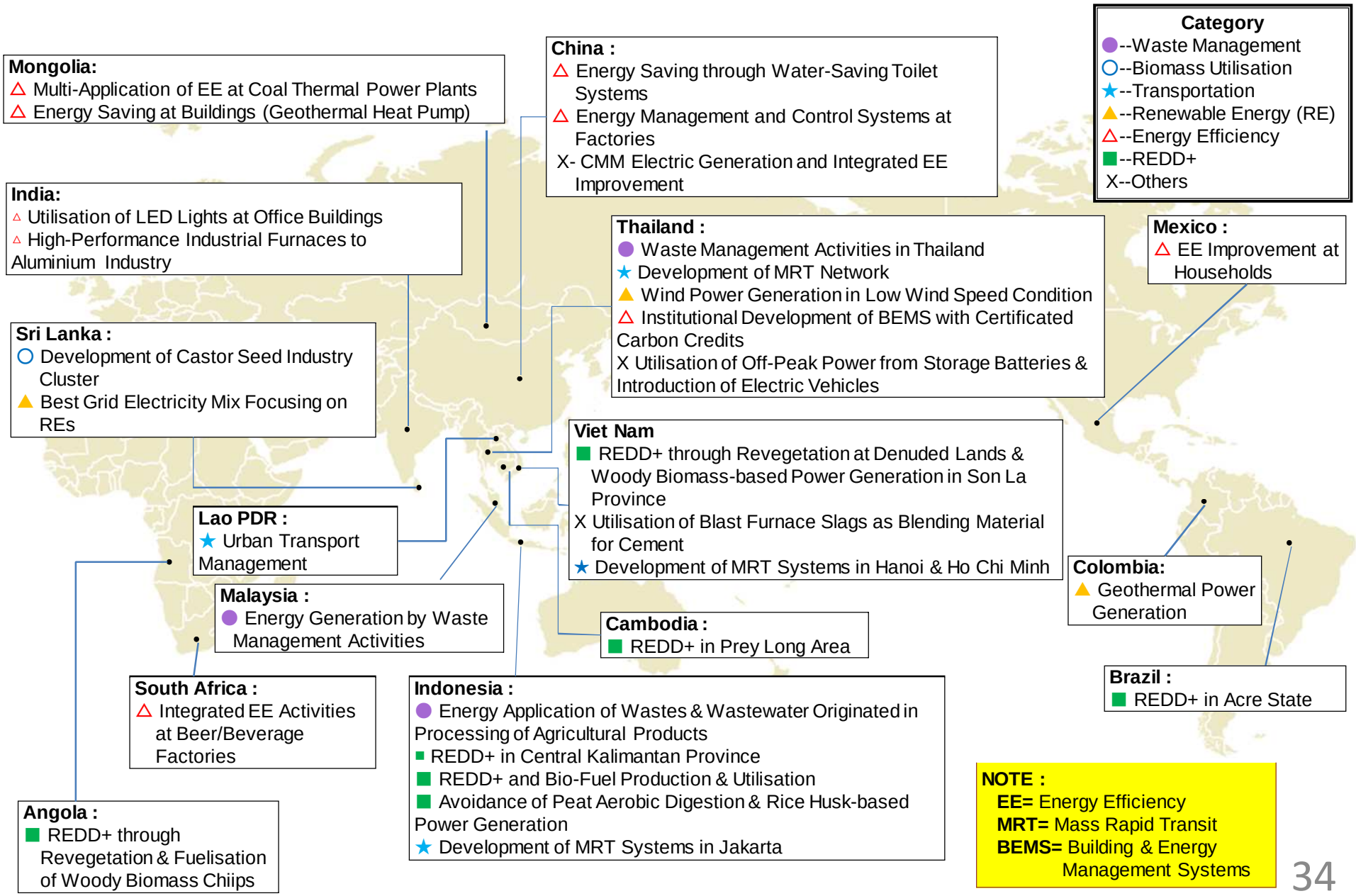
Mexico:
- Introduction of Cogeneration Facilities

Indonesia:
- Renewable Energy Hybrid System
- Utility Facility Operation Optimization Technology
- Replacement Project of the Existing Thermal Power Plants
- Rehabilitation of Hydro Power Plants
- REDD+ (5 projects)
- Optimum control of plant equipment (by IT)
- Wind-Power Generation(by EMS)
- Mega-Solar Power Plants Using Thin-Film Solar Cells
- Developing Technology of Biodiesel Fuel (BDF)
- SNG project (Substitute Natural Gas)
- CCS (Carbon dioxide Capture and Storage)
- Biomass Power Generation
- Eco-shipping for Coastal Cement Tanker
- Small Hydro Power Generation
- Geothermal Power Generation
- Low-Rank Coal Fuel Waste Heat Drying Project

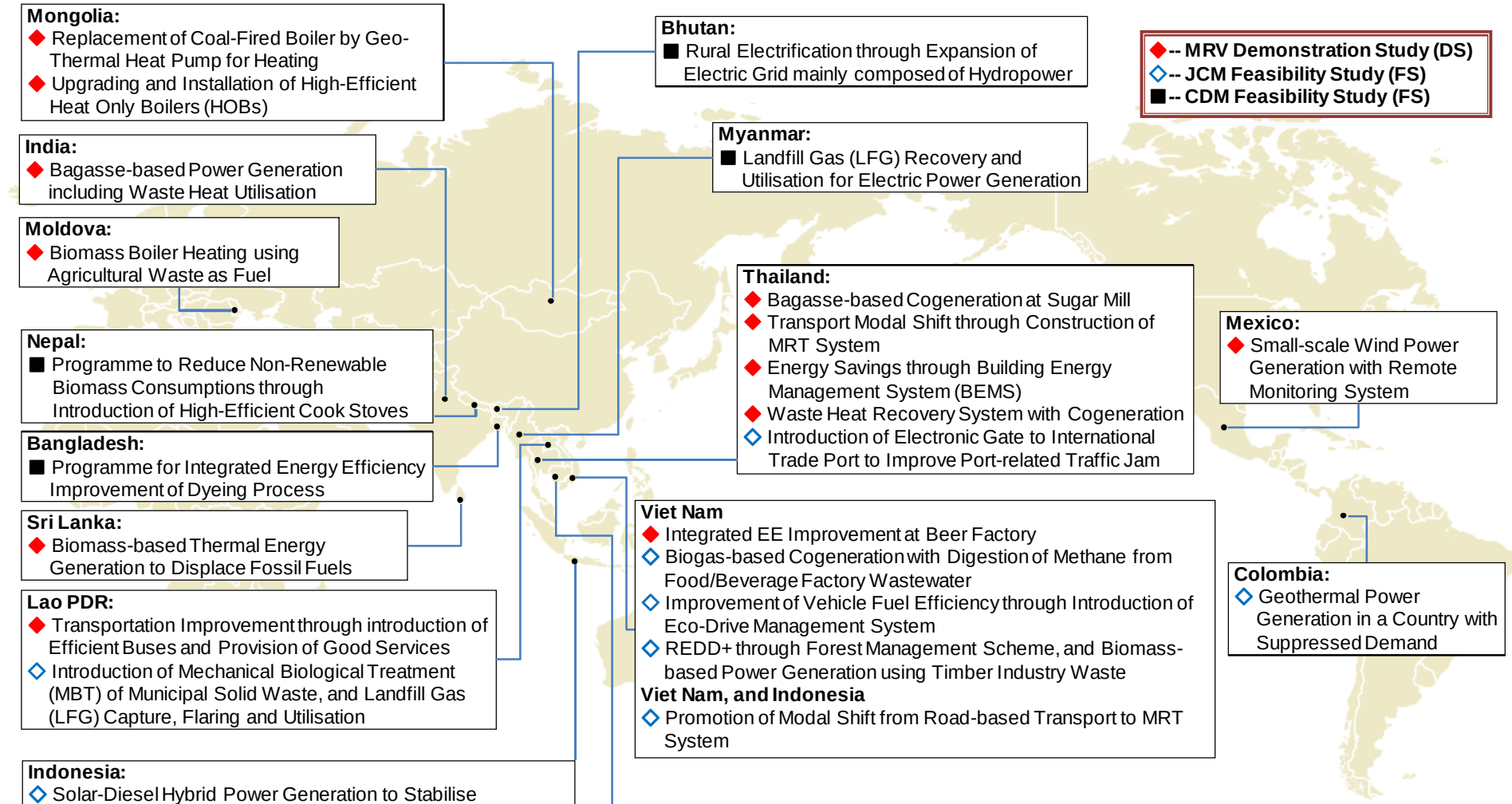
MRV Model Projects & Feasibility Studies for JCM by MOEJ

- Global Environment Centre Foundation (GEC) is serving as a secretariat for the MRV Demonstration Studies using Model Projects & Feasibility Studies.
- 25 projects were selected for FY2012.
  - Among those, there are 13 MRV Demonstration Studies using Model Projects which are to develop MRV methodologies, by applying them to the projects under operation. Based upon knowledge and experience gained through these MRV model projects, applicable MRV methodologies will be finalized.
  - 4 potential CDM projects were also selected, to contribute developing new methodologies, standardaized baselines and equitable geographical distribution of the CDM.
  - All the relevant information are available at GEC website(http://gec.jp/).
- Taskforces composed of experts for MRV has been set up and the selected MRV model projects / JCM FSs are being conducted under the guidance of the taskforces.
- Host country committees, have been organized for some countries, in order to share mutual perspectives on the JCM, through the discussions in those countries.

JCM Feasibility Studies by MOEJ in FY2011



MRV Model Projects and Feasibility Studies by MOEJ in FY2012



Mongolia:
- ◆ Replacement of Coal-Fired Boiler by Geo-Thermal Heat Pump for Heating
- ◆ Upgrading and Installation of High-Efficient Heat Only Boilers (HOBs)

India:
- ◆ Bagasse-based Power Generation including Waste Heat Utilisation

Moldova:
- ◆ Biomass Boiler Heating using Agricultural Waste as Fuel

Nepal:
- ■ Programme to Reduce Non-Renewable Biomass Consumptions through Introduction of High-Efficient Cook Stoves

Bangladesh:
- ■ Programme for Integrated Energy Efficiency Improvement of Dyeing Process

Sri Lanka:
- ◆ Biomass-based Thermal Energy Generation to Displace Fossil Fuels

Lao PDR:
- ◆ Transportation Improvement through introduction of Efficient Buses and Provision of Good Services
- ◇ Introduction of Mechanical Biological Treatment (MBT) of Municipal Solid Waste, and Landfill Gas (LFG) Capture, Flaring and Utilisation

Indonesia:
- ◇ Solar-Diesel Hybrid Power Generation to Stabilise Photovoltaic Power Generation
- ◇ Prevention of Peat Degradation through Groundwater Management, and Rice Husk-based Power Generation
- ◇ REDD+ for Conservation of Peat Swamp Forest, and Biomass-based Power Generation using Timber Mill Waste to Process Indigenous Trees derived from Conserved Forest

Bhutan:
- ■ Rural Electrification through Expansion of Electric Grid mainly composed of Hydropower

Myanmar:
- ■ Landfill Gas (LFG) Recovery and Utilisation for Electric Power Generation

Thailand:
- ◆ Bagasse-based Cogeneration at Sugar Mill
- ◆ Transport Modal Shift through Construction of MRT System
- ◆ Energy Savings through Building Energy Management System (BEMS)
- ◆ Waste Heat Recovery System with Cogeneration
- ◇ Introduction of Electronic Gate to International Trade Port to Improve Port-related Traffic Jam

Viet Nam
- ◆ Integrated EE Improvement at Beer Factory
- ◇ Biogas-based Cogeneration with Digestion of Methane from Food/Beverage Factory Wastewater
- ◇ Improvement of Vehicle Fuel Efficiency through Introduction of Eco-Drive Management System
- ◇ REDD+ through Forest Management Scheme, and Biomass-based Power Generation using Timber Industry Waste

Viet Nam, and Indonesia
- ◇ Promotion of Modal Shift from Road-based Transport to MRT System

Cambodia:
- ◆ Methane Recovery and Utilisation from Livestock Manure by using Bio-digesters
- ◇ Small-scale Biomass Power Generation with Stirling Engine
- ◇ REDD+ in Tropical Lowland Forest

Mexico:
- ◆ Small-scale Wind Power Generation with Remote Monitoring System

Colombia:
- ◇ Geothermal Power Generation in a Country with Suppressed Demand

◆-- MRV Demonstration Study (DS)
◇-- JCM Feasibility Study (FS)
■-- CDM Feasibility Study (FS)

NOTE: EE= Energy Efficiency
MRT= Mass Rapid Transit

Capacity building

◆ Capacity building is an important component of JCM.

◆Capacity building for JCM will be useful not just for JCM 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 JCM for government officials in charge of climate change of five Mekong countries(Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam)

Capacity Building Activities by METI

METI engages in 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 JCM
- ✧ To establish MRV methodologies for the JCM
- ✧ To train experts on MRV methodologies for the JCM
- ✧ To train entities to act as third-party verifiers for the JCM
- ✧ To deepen understanding on the institutional and technical aspects of the JCM both at government and private sectors.

■ Capacity building activities by METI in FY2012

METI

- Highly Efficient Transmission and Coal Power Plant（Mongolia）
- Eco-friendly driving using digital tachograph（Vietnam）
- Reduce power transmission loss by using highly efficient transformer（Vietnam）
- Highly efficient coal power plant（Ultra super critical）(Vietnam）
- Energy saving project at cement industry（South Africa）
- Highly efficient servers at Data Centers（India ）
- Energy efficient technologies at Steel plant（India）

HIDA (The Overseas Human Resources and Industry Development Association)

- High Efficiency Ion-Exchange Membrane Electrolysis Technology（Brazil）

Capacity Building Activities by MOEJ (1/2)

- 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 JCM.
  - 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 JCM.
  - URL is http://www.mmechanisms.org/e/index.html

Capacity Building Activities by MOEJ (2/2)