

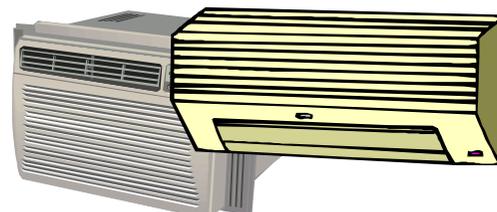
# Recent Development of The Joint Crediting Mechanism (JCM)

July 2014  
Government of Japan

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

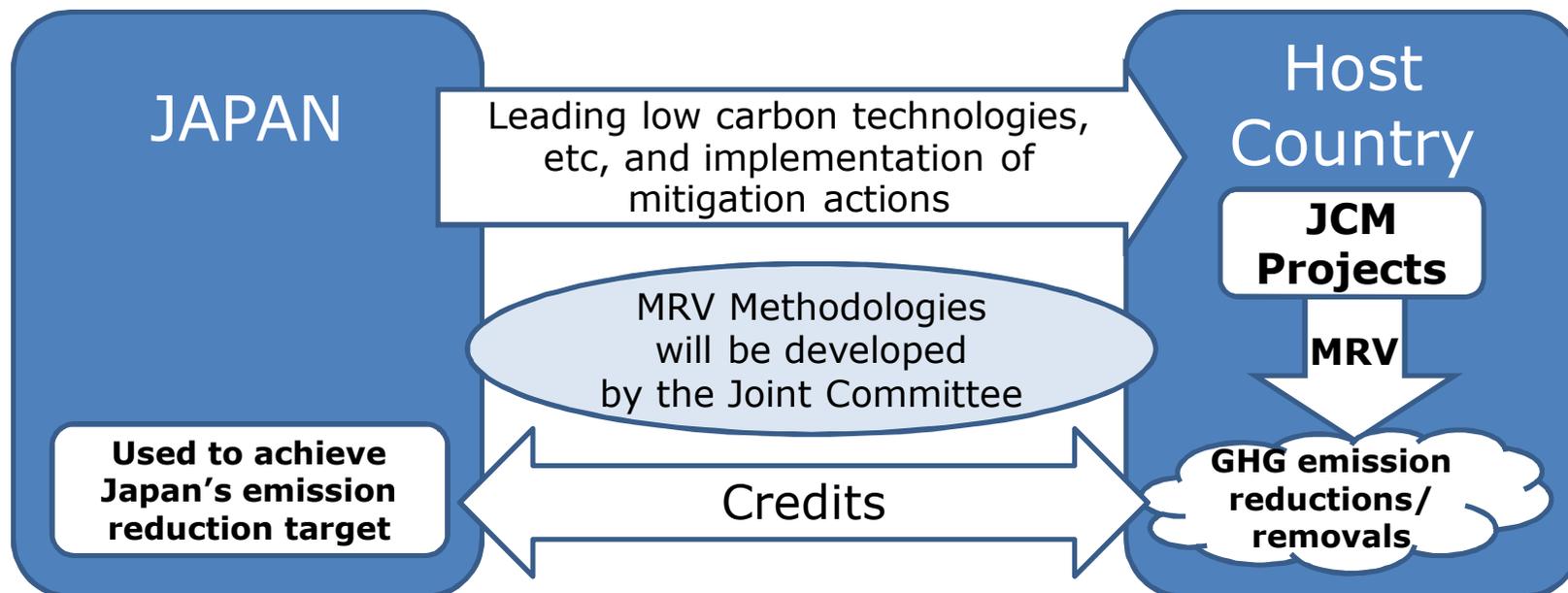
# Low-Carbon Growth

- 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.

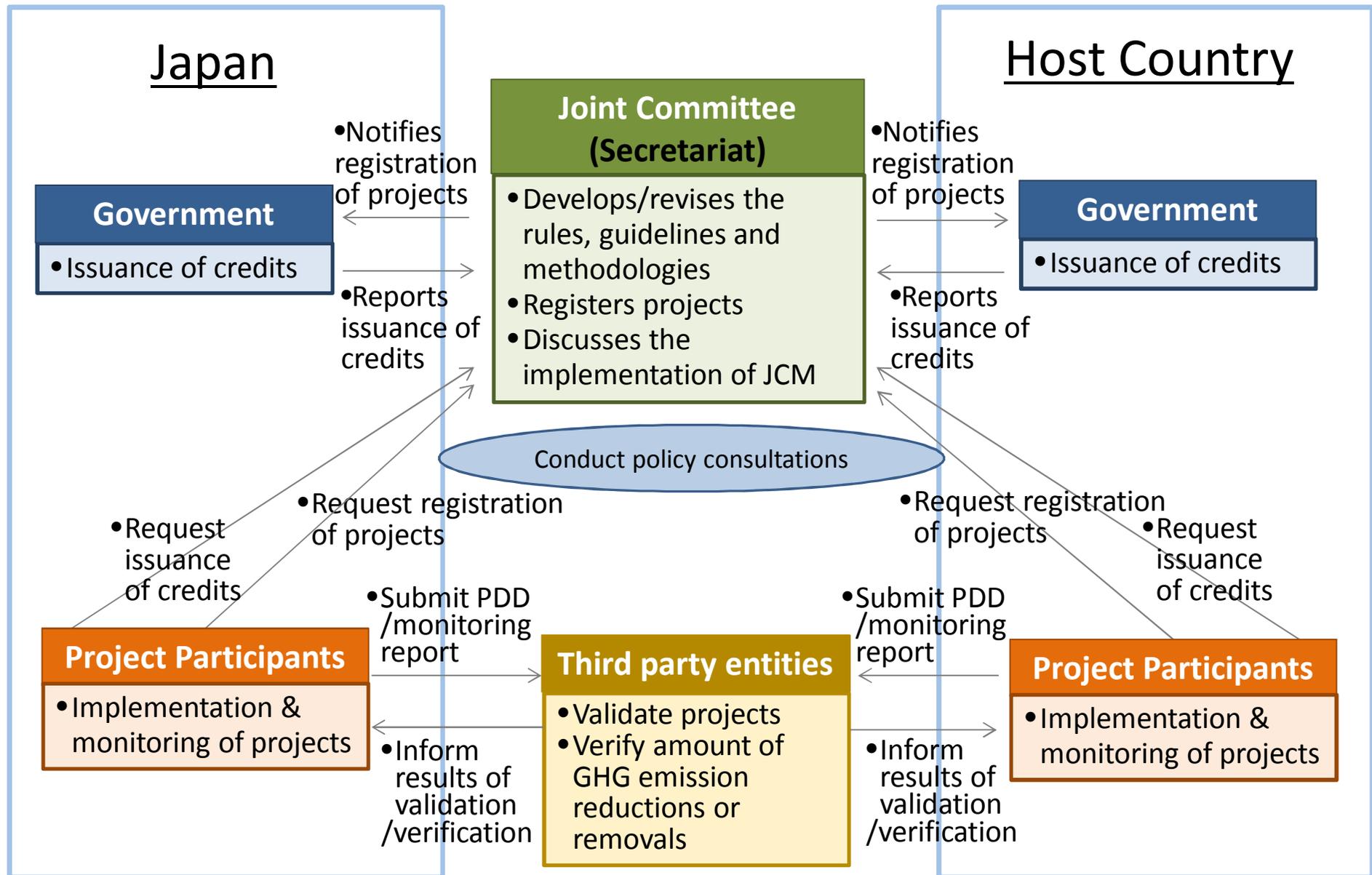


## Basic Concept of the JCM

- 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

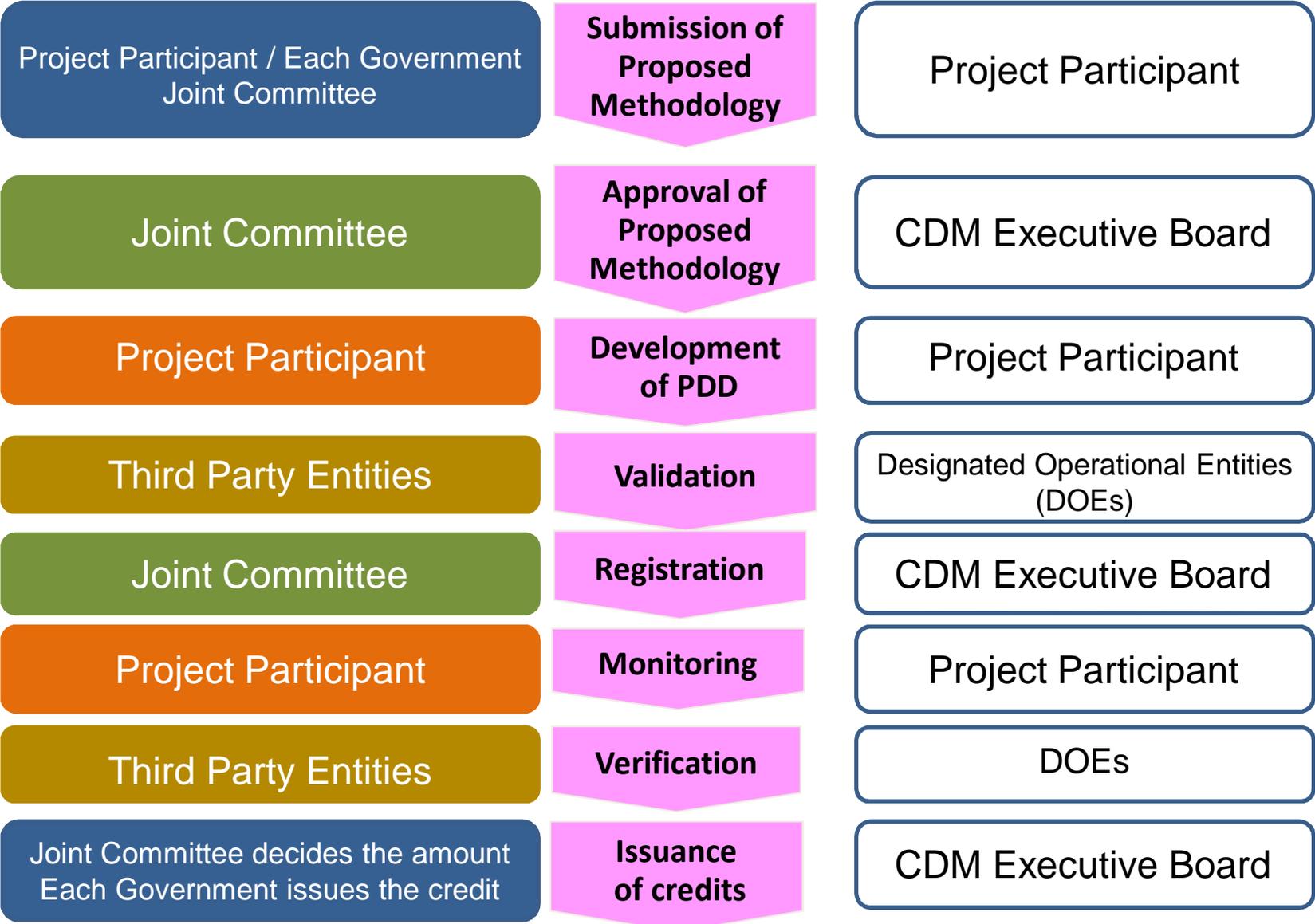
- (1) The JCM starts its operation as the non-tradable credit type mechanism.
- (2) Both Governments continue consultation for the transition to the tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.
- (3) The JCM aims for 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

JCM

<Main actors at each process>

CDM



Can be conducted by the same TPE  
Can be conducted simultaneously

## 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	- Spreadsheets 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

JFY2012

JFY2013

JFY2014

**Governmental Consultation (Increasing numbers of JCM Partner countries)**

Consultations with interested countries

**Signing  
Bilateral  
Document**

**JCM  
Operation**

Establishment & operation of the JC  
Development of rules and guidelines

Establishment & operation of the  
registry & website

Development of methodologies  
Registration of projects

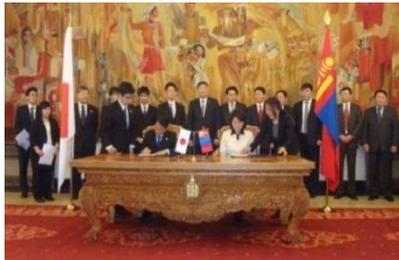
**JCM Demonstration Projects and JCM Model Projects**

**Feasibility Studies & Capacity Building**

**UNFCCC negotiations**

## 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, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau and Cambodia.



Mongolia  
On Jan. 8, 2013  
(Ulaanbaatar)



Bangladesh  
On Mar. 19, 2013  
(Dhaka)



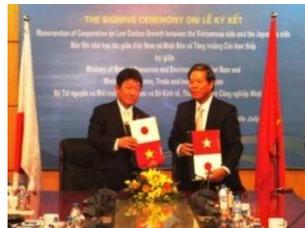
Ethiopia  
On May 27, 2013  
(Addis Ababa)



Kenya  
On Jun. 12, 2013  
(Nairobi)



Maldives  
On Jun. 29, 2013  
(Okinawa)



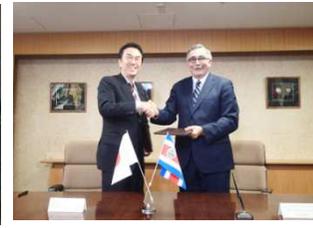
Viet Nam  
On Jul. 2, 2013  
(Hanoi)



Lao PDR  
On Aug. 7, 2013  
(Vientiane)



Indonesia  
On Aug. 26, 2013  
(Jakarta)



Costa Rica  
On Dec. 9, 2013  
(Tokyo)



Palau  
On Jan. 13, 2014  
(Ngerulmud)



Cambodia  
On Apr. 11, 2014  
(Phnom Penh)

- Japan held the Joint Committee with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Indonesia and Palau respectively.

## The current status of UNFCCC negotiation (1/2)

### Decision 1/CP18

41. *Acknowledges* that **Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets** and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries;
42. *Re-emphasizes* that, as set out in decision 2/CP.17, paragraph 79, all such approaches must meet standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double counting of effort and achieve a net decrease and/or avoidance of GHG emissions;
44. *Requests* the SBSTA to conduct a work programme to elaborate a framework for such approaches, drawing on the work of the AWG-LCA on this matter, including the relevant workshop reports and technical paper, and experience of existing mechanisms, with a view to recommending a draft decision to the COP for adoption at its 19th session;
45. *Considers* that any such framework will be developed under the authority and guidance of the Conference of the Parties;

## The current status of UNFCCC negotiation (2/2)

### Decision 19/CP18

Common tabular format for  
“UNFCCC biennial reporting guidelines for developed country Parties”

Table 4(b) Reporting on progress

Kyoto Protocol units <sup>d</sup> (kt CO <sub>2</sub> eq)										Other units <sup>d,e</sup> (kt CO <sub>2</sub> eq)			
AAUs		ERUs		CERs		tCERs		lCERs		Units from market-based mechanisms under the Convention		Units from other market-based mechanisms	
20XX-3	20XX-2	20XX-3	Year X-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2
Quantity of units										20XX-3		20XX-2	
<b>Total</b>													

- The JCM is one of various approaches Japan and partner countries are jointly developing and implementing , and Japan intends to contribute to elaborating the framework for such approaches under the UNFCCC.
- Japan will report to the COP the use of the JCM in Biennial Reports including the Common Tabular in line with Decision 19/CP18.

# Technical Details Currently Considered for the JCM

(Subject to further consideration and discussion with host countries)

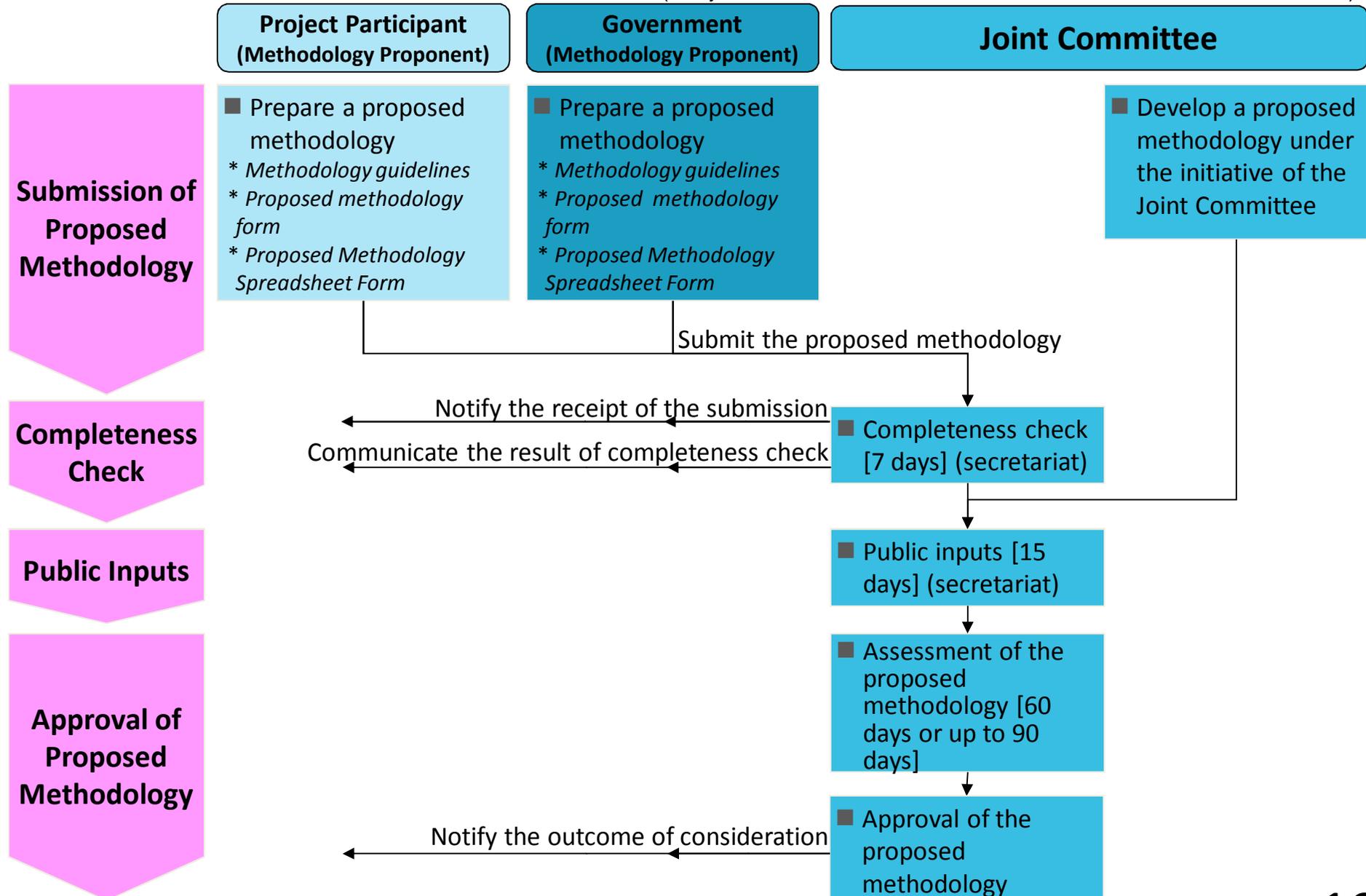
# Necessary documents for the JCM

(Subject to further consideration and discussion with host countries)

		<b>Rules and Guidelines</b>
<b>Overall</b>		<ul style="list-style-type: none"> <li>✓ Rules of Implementation</li> <li>✓ Project Cycle Procedure</li> <li>✓ Glossary of Terms</li> <li>✓ Guidelines for Designation as a Third-Party Entity (TPE guidelines)</li> </ul>
<b>Joint Committee</b>		<ul style="list-style-type: none"> <li>✓ Rules of Procedures for the Joint Committee (JC rules)</li> </ul>
<b>Methodology</b>		<ul style="list-style-type: none"> <li>✓ Guidelines for Developing Proposed Methodology (methodology guidelines)</li> </ul>
<b>Project Procedures</b>	<b>Developing a PDD</b>	<ul style="list-style-type: none"> <li>✓ Guidelines for Developing Project Design Document and Monitoring Report (PDD and monitoring guidelines)</li> </ul>
	<b>Monitoring</b>	
	<b>Validation</b>	<ul style="list-style-type: none"> <li>✓ Guidelines for Validation and Verification (VV guidelines)</li> </ul>
	<b>Verification</b>	

# 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

# Registration & Issuance Procedure of the JCM (1/2)

(Subject to further consideration and discussion with host countries)

**Project Participant**

**Third-Party Entity**

**Joint Committee**

**Government**

## Development of PDD

- Complete a PDD and develop a monitoring plan
  - \* *PDD form and Monitoring Spreadsheet*
  - \* *PDD and monitoring guidelines*
- Complete an MoC Form
  - \* *MoC Form*

Submit the draft PDD and MoC, and request for validation and public inputs

Notify the receipt of the submission

## Validation

Validation and verification can be conducted simultaneously or separately.

- Validate a project
- Prepare a validation report
  - \* *Validation and verification guidelines*
  - \* *Validation report form*

- Public inputs [30 days] (secretariat)

Submit the validation report

## Registration

- Complete a registration request form
  - \* *Registration request form*

Submit registration request form, the validated PDD and MoC, and the validation report and request for registration

Notify the receipt of the request

Notify the conclusion

Notify the registration

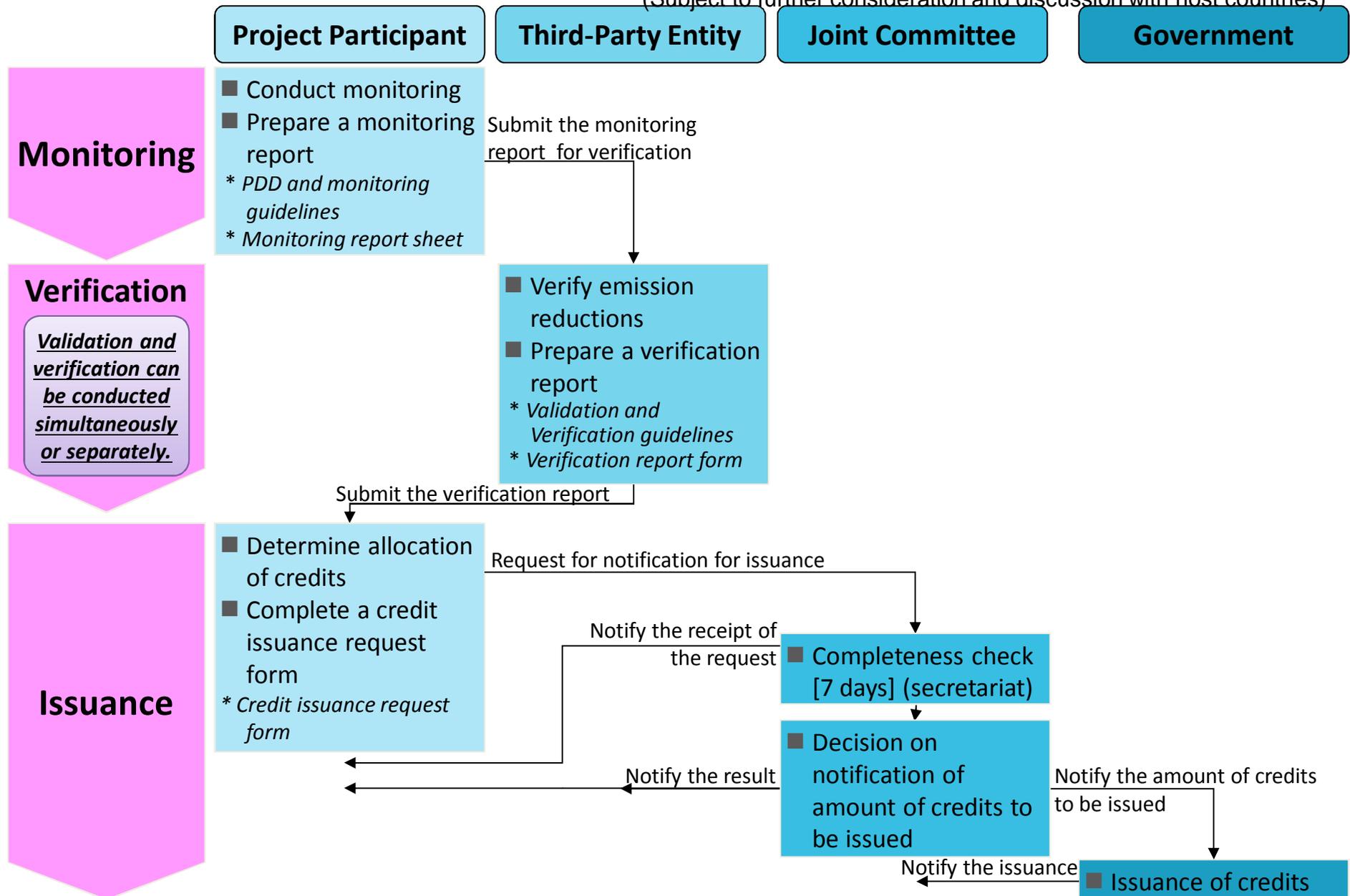
- Completeness check [7 days] (secretariat)

- Registration

Notify the registration

# Registration & Issuance 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.

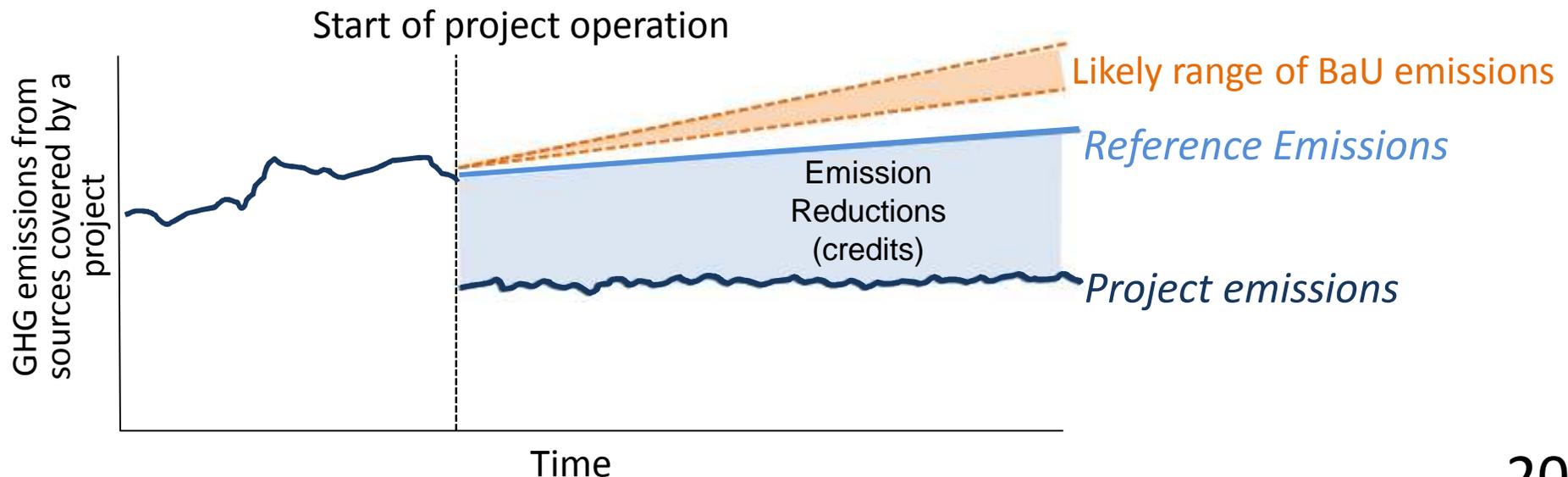
**Confidentiality:** Members of the JC, Secretariat, etc. respect confidentiality.

**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

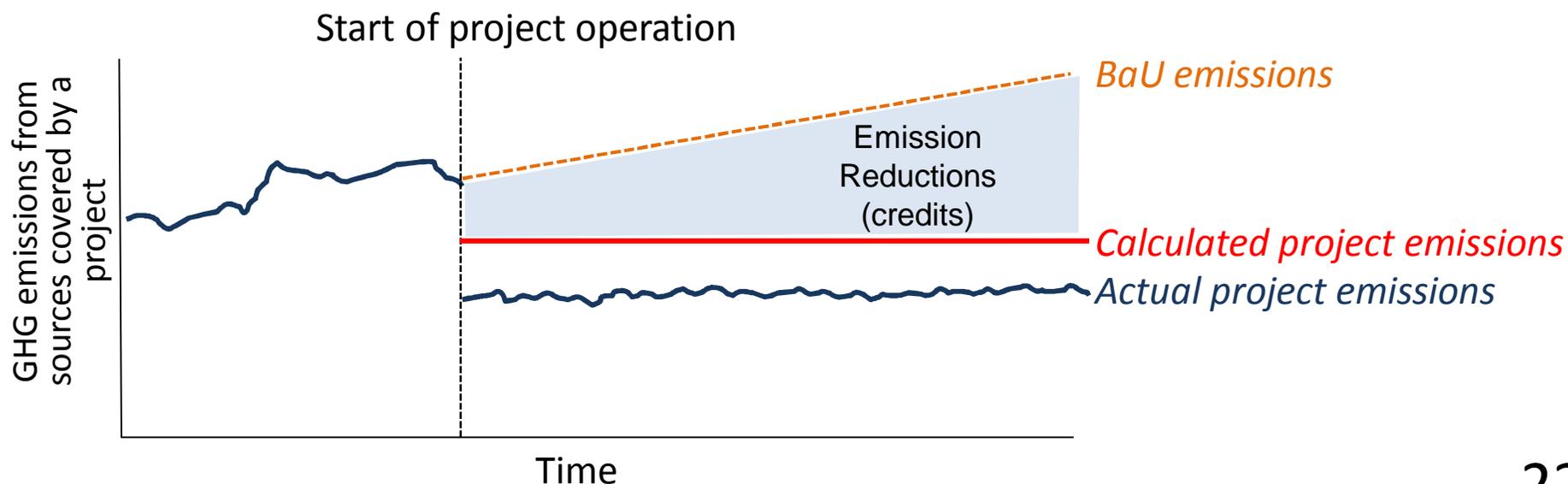
(Subject to further consideration and discussion with host countries)

- 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 measuring 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	<ul style="list-style-type: none"><li>• A “check list” will allow easy determination of eligibility of a proposed project under the JCM and applicability of JCM methodologies to the project.</li></ul>
Data (parameter)	<ul style="list-style-type: none"><li>• List of parameters will inform project participants of what data is necessary to calculate GHG emission reductions/removals with JCM methodologies.</li><li>• Default values for specific country and sector are provided beforehand.</li></ul>
Calculation	<ul style="list-style-type: none"><li>• Premade spreadsheets will help calculate GHG emission reductions/removals automatically by inputting relevant values for parameters, in accordance with methodologies.</li></ul>

## 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

# 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

The screenshot displays several sections of the methodology document, including:

- 1. Title of methodology**
- 2. Description of methodology**
- 3. Details of methodology**
- 4. Monitoring and input data after project start**
- 5. CO2 emission reductions**
- 6. Monitoring structure**
- 7. Monitoring plan**
- 8. Monitoring report**

## Monitoring Spreadsheet

The screenshot shows the Monitoring Spreadsheet with the following data:

Monitoring point No.	Parameters	Description of data	Estimated Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
(1)	PO <sub>2</sub>	Project production volume at the HPP during the period of year Y	20,000	ty	Option C	monitored data	- Collecting electricity consumption data with verified calibrated weighing scale and routing it to an spread sheet electronically. - Verified scales are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices. - Project duty managers double check the input data with logbooks every 6 months.	once a month	
(2)	PF <sub>CO<sub>2</sub></sub>	Project fossil fuel consumption by the HPP	500	ty	Option B	purchase records	- Collecting the purchase amount from retailer invoices and routing it to an spread sheet manually. - Project duty managers double check the input data with invoices every 6 months.	once a month	
(3)	PEC	Project electricity consumption by the HPP	500	MWh/ty	Option C	monitored data	- Collecting electricity consumption data with verified calibrated electricity monitoring device and routing it to an spread sheet electronically. - Verified monitoring devices are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices.	continuous	

Below the table, the CO2 emission reductions are summarized:

CO2 emission reductions	Units
22,811	tCO <sub>2</sub> e/ty

Monitoring Report Sheet

Monitoring Structure Sheet

Monitoring Plan Sheet

Cells for data & information input

# 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.

**PDD**

**Monitoring Structure**

Responsible personnel	Role
Project Manager	Responsible for project planning, implementation, monitoring results and reporting.
Project Deputy Managers	Appointed to be in charge of approving the archived data after being checked and corrected when necessary.
Monitoring operators	Appointed to be in charge of monitoring activities (data collection and storage), including

Roles and responsibilities of personnel for monitoring should be described

**Monitoring Plan**

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Monitoring point No.	Parameters	Description of data	Estimated Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
(1)	PC <sub>y</sub>	Project production volume at the HPIF during the period of year y	20,000	y	option C	monitored data	- Collecting electricity consumption data with verified/calibrated weighing scale and inputting it to an spreads sheet electronically. - 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	
(2)	PFC <sub>y</sub>	Project fossil fuel consumption by the HPIF	500	y	option B	purchase records	- Collecting the purchase amount from retailer invoices and inputting it to an spreads sheet manually. - Project deputy managers double check the input data with invoices every 6 months	once a month	
(3)	PEC <sub>y</sub>	Project electricity consumption by the HPIF	500	Wh/y	option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting it to an spreads sheet electronically. - Verified monitoring devices are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices.	continuous	

Cells for data input (ex ante)

Other necessary information on parameters to be monitored are:

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

# 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 period

Cells for data input (ex post)

2	(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
3	2013-2014	1)	PO <sub>y</sub>	Project production volume at the HRIF during the period of year y	20,000	ty	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated weighing scale and inputting it to an spread sheet electronically - 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	
4	2013-2014	2)	FFC <sub>y</sub>	Project fossil fuel consumption by the HRIF	500	ty	Option B	purchase records	- Collecting the purchase amount from retailer invoices and inputting it to an spread sheet manually - Project deputy managers double check the input data with invoices every 6 months	once a month	
5	N/A	3)	PEC <sub>y</sub>	Project electricity consumption by the HRIF	500	MWh/y	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting to an spread sheet electronically - Verified monitoring devices are installed and they are calibrated once a year - Verification and calibration shall meet international standard on corresponding monitoring devices	continuous	
6	* HRIF refers to High-Performance Industrial Furnace.										
7											
8											
9	2. CO2 emission reductions										
10					CO2 emission reductions	Units					
11					22,881	CO2/y					
12											
13											
14	[Monitoring option]										
15	Option A:	Based on public data which is measured by entities other than the project used: publicly recognized data such as statistical data and specifications									
16	Option B:	Based on the amount of transaction which is measured directly using invoices used: commercial evidence such as invoices									
17	Option C:	Based on the actual measurement using metering instruments (Data used)									
18											

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

## **A. Project description**

(Subject to further consideration and discussion with host countries)

- 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

- ◆ JCM Demonstration Projects and JCM Model Projects
- ◆ Feasibility Studies
- ◆ Capacity Building

# JCM Promotion Scheme by METI

## JCM Demonstration Projects

- JCM Demonstration Projects are implemented by NEDO (New Energy and Industrial Technology Development Organization), which supports the project costs necessary to verify the amount of GHG emission reduction in line with JCM rules and guidelines.
- The budget for FY 2014: 6billion JPY (approximately \$61million)
- Coverage of project cost: Cost of the JCM Demonstration Projects necessary for MRV  
e.g. Cost of design, machines, materials, labor, travel, etc.
- Eligibility for the JCM Demonstration Projects:
  - Concrete Projects to demonstrate the effectiveness of leading Japanese technologies and/or products installed and operated in the projects, and the amount of their GHG emission reduction with MRV methodology by actual operation
  - Project Participants consist of entities from both countries, only the Japanese entities can apply for the JCM Demonstration projects. The projects shall be completed within 3 years.

## JCM Feasibility Study (FS)

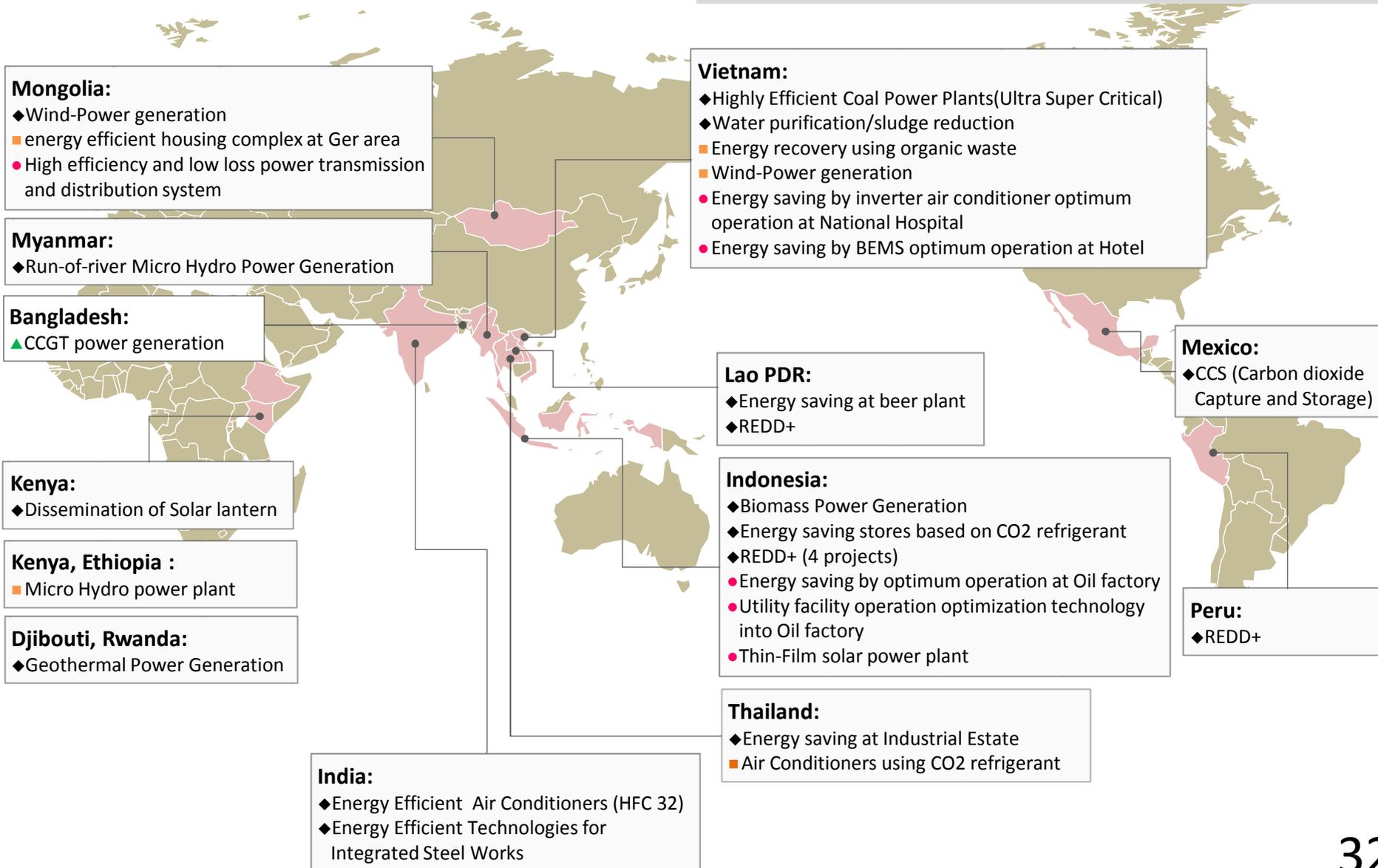
- The study to promote potential JCM projects and to survey their feasibility as well as to check the practicality of the MRV methodology.

## Capacity Building Programmes

- Variety of capacity building activities to increase technical experts (e.g.,) Experts on measuring amount of emission reductions by introducing low carbon technologies and products in the host country.

JCM Feasibility Studies, MRV Applicability Verification Study and Demonstration Projects by METI & NEDO in FY2013

- ◆→ METI's FSs for Policy Recommendation
- NEDO's FSs for Project Exploration /Development
- ▲→ NEDO's MRV Applicability Verification Study
- NEDO's Demonstration Projects



JCM Feasibility Studies, MRV Applicability Verification Studies and Demonstration Projects by METI & NEDO in FY2014

◆→ METI's FSs for Policy Recommendation  
 ▲→ NEDO's MRV Applicability Verification Studies  
 ●→ NEDO's Demonstration Projects  
 ✕→ NEDO's FSs / MRV Applicability Verification Studies / Demonstration Projects for FY2014 are in public offering process

**Mongolia:**  
 ● High efficiency and low loss power transmission and distribution system (since FY2013)

**Bangladesh:**  
 ▲ CCGT power generation (since FY2013)

**Saudi Arabia:**  
 ◆ Solar power generation and gas-fired combined power generation

**Mexico:**  
 ◆ Energy efficiency technology in commerce and industrial sector

**Lao PDR:**  
 ◆ Energy efficiency container data center

**Chile:**  
 ◆ Energy efficiency power generation

**Kenya:**  
 ◆ Geothermal power generation

**Ethiopia, Kenya:**  
 ◆ Mega-solar power generation and Hydro power generation

**Maldives:**  
 ◆ Medium-size wind power generation

**Vietnam:**  
 ◆ Energy efficiency technologies for steel industry  
 ◆ Low carbon technology application for eco-city  
 ◆ Energy efficiency operation for ships  
 ● Energy saving by inverter air conditioner optimum operation at National Hospital (since FY2013)  
 ● Energy saving by BEMS optimum operation at Hotel (since FY2013)

**Thailand:**  
 ◆ Energy efficiency technologies for steel industry  
 ◆ Bio-coke

**Cambodia:**  
 ◆ Energy efficiency LED street light

**Indonesia :**  
 ◆ Energy efficiency for mobile communication system  
 ◆ Low carbon waste treatment  
 ◆ LNG supply chain development and energy conversion  
 ◆ REDD+ (6 projects)  
 ● Energy saving by optimum operation at Oil factory (since FY2013)  
 ● Utility facility operation optimization technology into Oil factory (since FY2013)  
 ● Thin-Film solar power plant (since FY2013)

# Capacity Building Programmes & Feasibility Studies by MOE

## Capacity Building Programmes

### Region

Asia, Africa, Latin America, and Small Island countries

### Scope

Facilitating understanding on the JCM rules and guidelines, enhancing capacities for implementing MRV

### Activities

Consultations, workshops, seminars, training courses and study tours, etc.

### Target

Government officials, private sectors, candidate for validation & verification entities, local institutes and NGOs



## Feasibility Studies

### Objective

Elaborating investment plan on JCM projects, developing MRV methodologies and investigating feasibility on potential JCM projects,

### Type of studies

JCM Project Planning Study (PS)

To develop a JCM Project in the next fiscal year

JCM Feasibility Study (FS)

To survey feasibility of potential JCM projects

Large Scale JCM Feasibility Study

To survey feasibility of potential large scale JCM projects including city level cooperation

### Reports

Available at GEC (Global Environment Centre Foundation) website <URL: <http://gec.jp>>



## Outreach

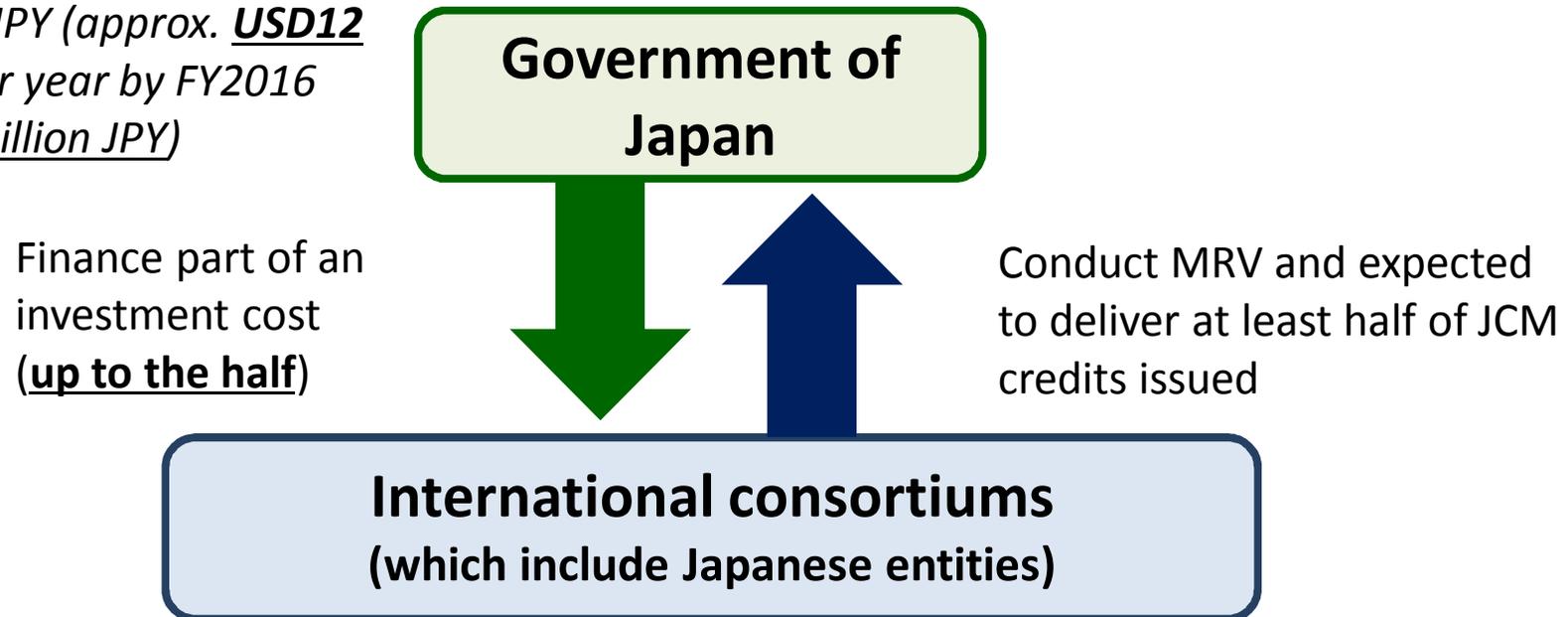
New Mechanisms Information Platform website provides the latest information on the JCM <URL: <http://www.mmechanisms.org/e/index.html>>



## Financing Programme for JCM Model Projects by MOE

*The budget for FY 2014*

*1.2 billion JPY (approx. **USD12 million**) per year by FY2016  
(total 3.6 billion JPY)*



- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO<sub>2</sub> from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects : starting installation after the adoption of the financing and finishing installation within three years.

# New Support Program Enabling “Leapfrog” Development (Fund/ADB) by MOE

## Fund for expansion of low-carbon technologies

### Budget for FY 2014

4.2 billion JPY (approx. USD42 million)

### Scheme

To finance the projects which have the better efficiency of reducing GHG emission in collaboration with other projects supported by JICA and other national organizations

### Purpose

To expand superior and advanced low-carbon technologies for building the low carbon society as the whole city wise and area wise in the wider fields, and to acquire credits by the JCM .

## ADB Trust Fund

### Budget for FY 2014

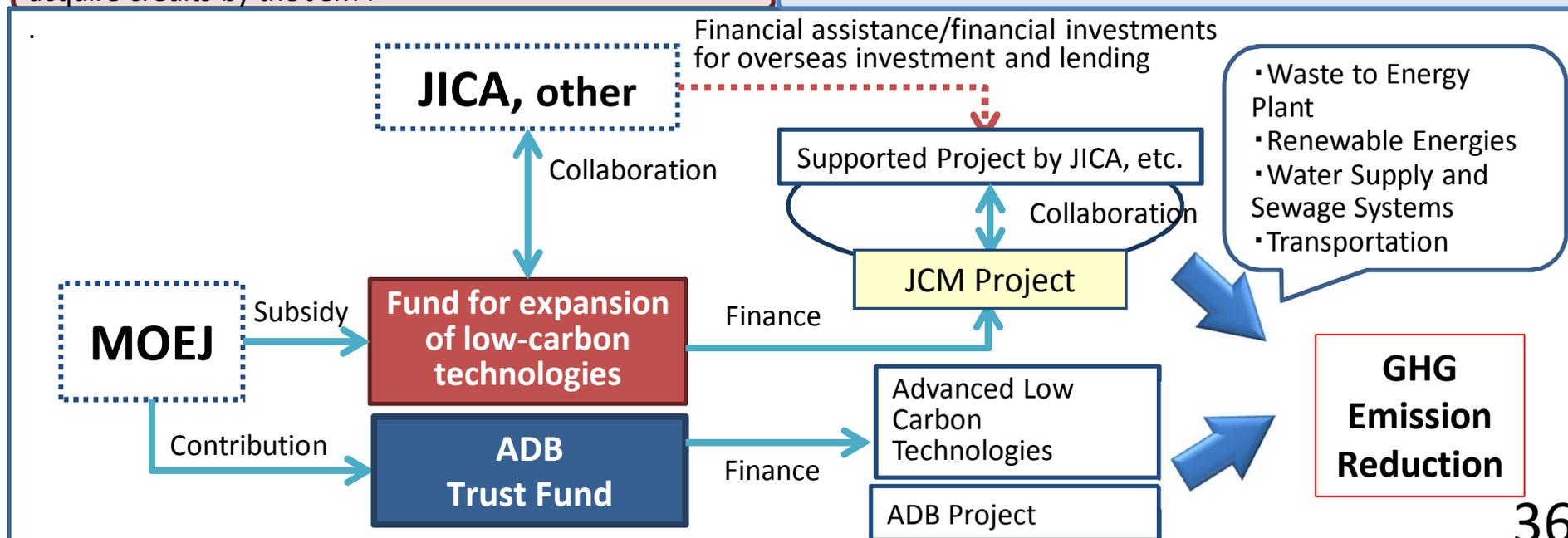
1.8 billion JPY (approx. USD18 million)

### Scheme

To provide the financial incentives for the adoption of the advanced low-carbon technologies which are superior in GHG emission reduction but expensive in ADB- financed projects

### Purpose

To develop ADB projects as the “Leapfrog” developments by the advanced technologies and to show the effectiveness of the JCM scheme by the acquisition of credits of the JCM.



# JCM Model Projects in 2014 by MOEJ

## Viet Nam:

### ◆Anaerobic Digestion of Organic Waste for Biogas Utilization at Market

Organic waste discharged from a market is used to generate biogas in a methane fermentation system. The biogas is then supplied to a seafood processing factory.

### ◆Eco-driving by Utilizing Digital Tachograph System

Trucks are fitted with eco-drive improving system using digital tachographs, realizing CO2 emission reduction and safe-driving.

## Indonesia:

### ◆Power Generation by Waste Heat Recovery in Cement Industry

Waste heat recovery system with suspension preheater boiler and air quenching cooler boiler is installed in cement production process and generates electricity (28 MW) to be used in the cement plant.

### ◆Palm Waste Biomass Power Generation Project

Fluidized bed furnace is installed in a biomass power generation plant (6.2 MW) utilizing EFB (Empty Fruit Bunch) as a fuel.

### ◆Solar Power Hybrid System Installation to Existing Base Transceiver Stations in Off-grid Area

Solar power (900 kW) and lithium ion batteries are installed to replace inefficient diesel generators at mobile base stations.

### ◆Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer

Regenerative burners which recover heat from exhaust gas efficiently are installed in a casting process.

### ◆Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller

Chiller with a high efficiency compressor and economizer cycle are installed.

# JCM Model Projects in 2013 by MOEJ

## Mongolia:

### ◆ Upgrading and Installation of Centralized Control System of High-Efficiency Heat Only Boiler (HOB)

The high-efficiency Heat Only Boilers (HOBs) will replace outdated low-efficiency HOBs, to supply heated water for winter indoor heating. The project will also introduce centralized control system for the integrated heat supply in collective buildings.

## Bangladesh:

### ◆ Brick Production based on Non-Firing Solidification Technology

In place of the existing brick production with the firing process with the combustion of coal, the new brick production with the non-firing solidification technology will be introduced.

## Viet Nam:

### ◆ Integrated Energy Efficiency Improvement at Beer Factory

A set of high performance equipment for energy efficiency improvement and renewable energy generation will be introduced in beer factories. Before the installation, the potential of energy saving and possible high potential points in the beer production process will be identified by using the energy structure analysis simulation technology.

### ◆ Energy Efficient NH<sub>3</sub> Heat Pumps to Marine Products Processing Industry

The high efficient heat pump using ammonia (NH<sub>3</sub>) as a refrigerant will be introduced to save their energy consumptions.

## Cambodia:

### ◆ Small-scale Biomass Power Generation by Using Stirling Engines

The introduction of small-scale biomass power generation systems with stirling engines will replace diesel-based power generation at rice mills. The stirling engine, external-combustion engine, is suitable for the utilisation of biomass such as rice husk.

## Indonesia:

### ◆ Energy Saving for Air-Conditioning and Process Cooling at Textile Factory (in Batang city)

The high performance refrigerating machine with efficient compressor and economizer cycle will be introduced for factory air-conditioning.

### ◆ Energy Savings at Convenience Stores

The latest high-efficiency chillers with natural refrigerant (CO<sub>2</sub> refrigerant), inverter-controlled air-conditioners, and LED lighting will be introduced in convenience stores. Rooftop photovoltaic power generation systems will also be introduced.

### ◆ Energy Efficient Refrigerants to Cold Chain Industry

The advanced energy efficient non-fluorocarbon cooling system using NH<sub>3</sub> and CO<sub>2</sub> will be introduced in the food industry and logistics industry. A screw compressor and an IPM (interior permanent magnet synchronous) motor are adopted and operated integrally, to achieve high efficient operation of the cooling facility.

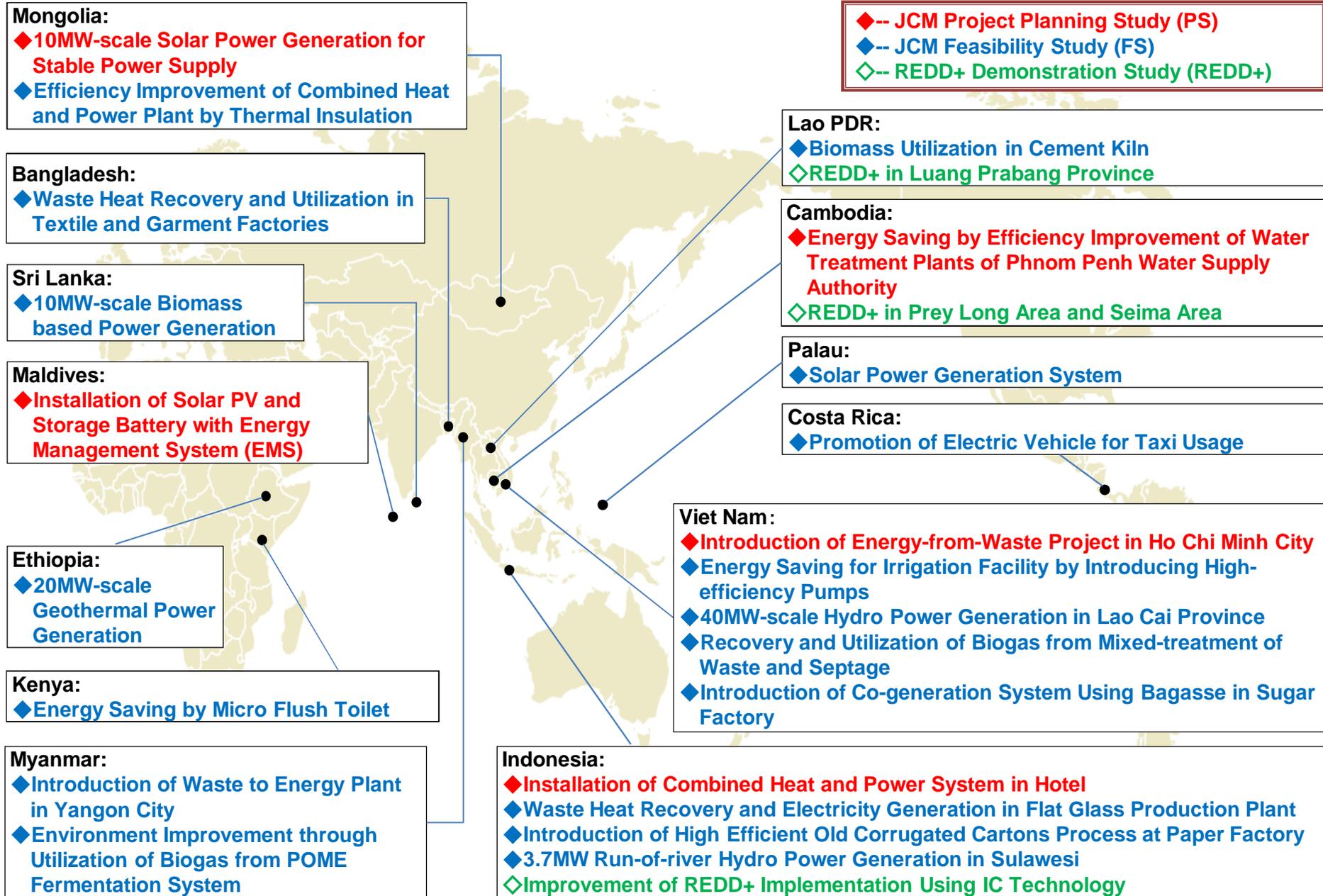
### ◆ Energy Saving by Double Bundle-Type Heat Pump at Beverage Plant

A double bundle-type heat pump, generating both heating and cooling energy, will be installed to reduce energy consumption.

### ◆ Energy Saving for Air-Conditioning and Process Cooling at Textile Factory (in West Java province & Banten province)

The high performance refrigerating machine with efficient compressor and economizer cycle will be introduced for factory air-conditioning.

# Overview of JCM Project Planning/Feasibility/REDD+ Studies in 2014 by MOEJ



# Large Scale JCM Feasibility Study in 2014 by MOEJ

## Selected Studies

1. Financing Scheme Development for Promoting Energy Efficiency Equipment Installation in Indonesia (Jakarta, Bali etc.)
2. Low Carbon City Planning in Surabaya, Indonesia(Surabaya)
3. Eco-Lease Scheme for Low Carbon Vehicle (Indonesia National Level)
4. Developing a Low Carbon Society under Collaboration between Bandung City and Kawasaki City (Bandung)
5. Developing Environmentally and Culturally Sustainable in Angkor Park (Siem Reap)
6. Accelerating Implementation of Bangkok Master Plan on Climate Change (Bangkok)
7. Strategic Promotion of Recovery and Destruction of Fluorocarbons (Bangkok/Johor Bahru )
8. Installing an Evacuation Shelter with Renewable Energy as a “Low-Carbon/Resilient Model for Small Island Countries” (Palau etc.)
9. Comprehensive Resource Circulation System for Low Carbon Society (Palau)
10. Eco-island in Cooperation between Kien Giang Province and Kobe City (Phu Quoc island)
11. Hai Phong Green Growth Action Plan Development in Association with Kitakyushu City (Hai Phong City)
12. Ho Chi Minh City – Osaka City Cooperation for Developing Low Carbon City (Ho Chi Minh City)
13. Large-Scale GHG Emissions-Reduction Project Development in the Iskandar Development Region, Malaysia (Iskandar)
14. Comprehensive Improvements in the Power Generation, Transmission and Distribution Systems in Ulaanbaatar City and on the Possibility of Nationwide Horizontal Application of the Same Improvement Model (Ulaanbaatar)
15. Programme-type Finance Scheme for the JCM (Ulaanbaatar)

