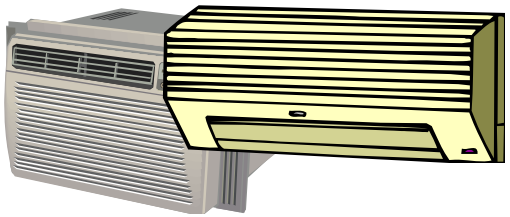
Recent Development of
The Joint Crediting Mechanism (JCM)

October 2014
Government of Japan

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

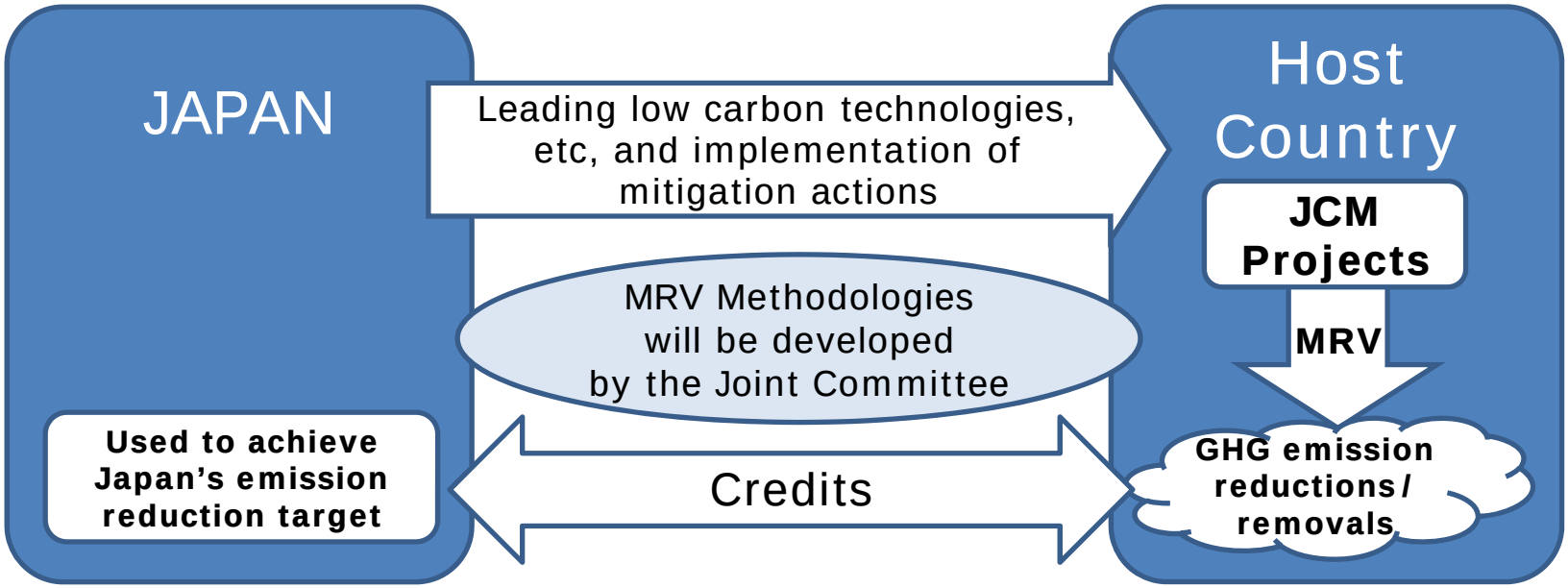
Low-Carbon Growth

- In order to effectively address the issue of climate change, it is necessary to achieve low-carbon growth all around the world by fully mobilizing technology, markets and finance.
- The 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 widespread.
- Realizing a low carbon society by combining these technologies and products with appropriate systems, services, and infrastructure is also crucial.

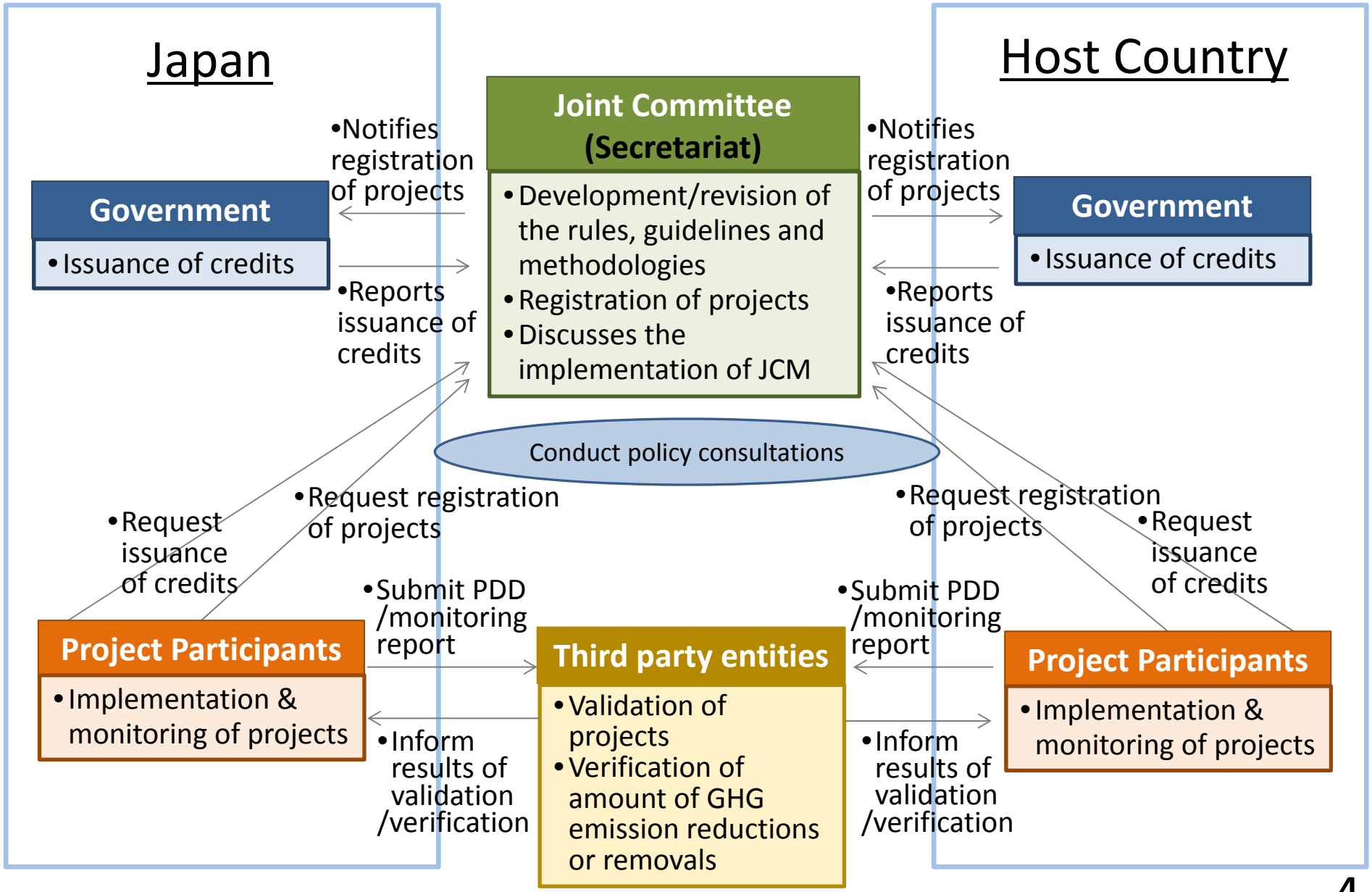


Basic Concept of the JCM

- 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 from Japan to GHG emission reductions or removals 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 following:

  (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 a non-tradable credit type mechanism.

(2) Both Governments continue consultation for the transition to a 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
Project Participant / Each Government Joint Committee	**Submission of Proposed Methodology**	Project Participant
Joint Committee	**Approval of Proposed Methodology**	CDM Executive Board
Project Participant	**Development of PDD**	Project Participant
Third Party Entities	**Validation**	Designated Operational Entities (DOEs)
Joint Committee	**Registration**	CDM Executive Board
Project Participant	**Monitoring**	Project Participant
Third Party Entities	**Verification**	DOEs
Joint Committee decides the amount Each Government issues the credit	**Issuance of credits**	CDM Executive Board

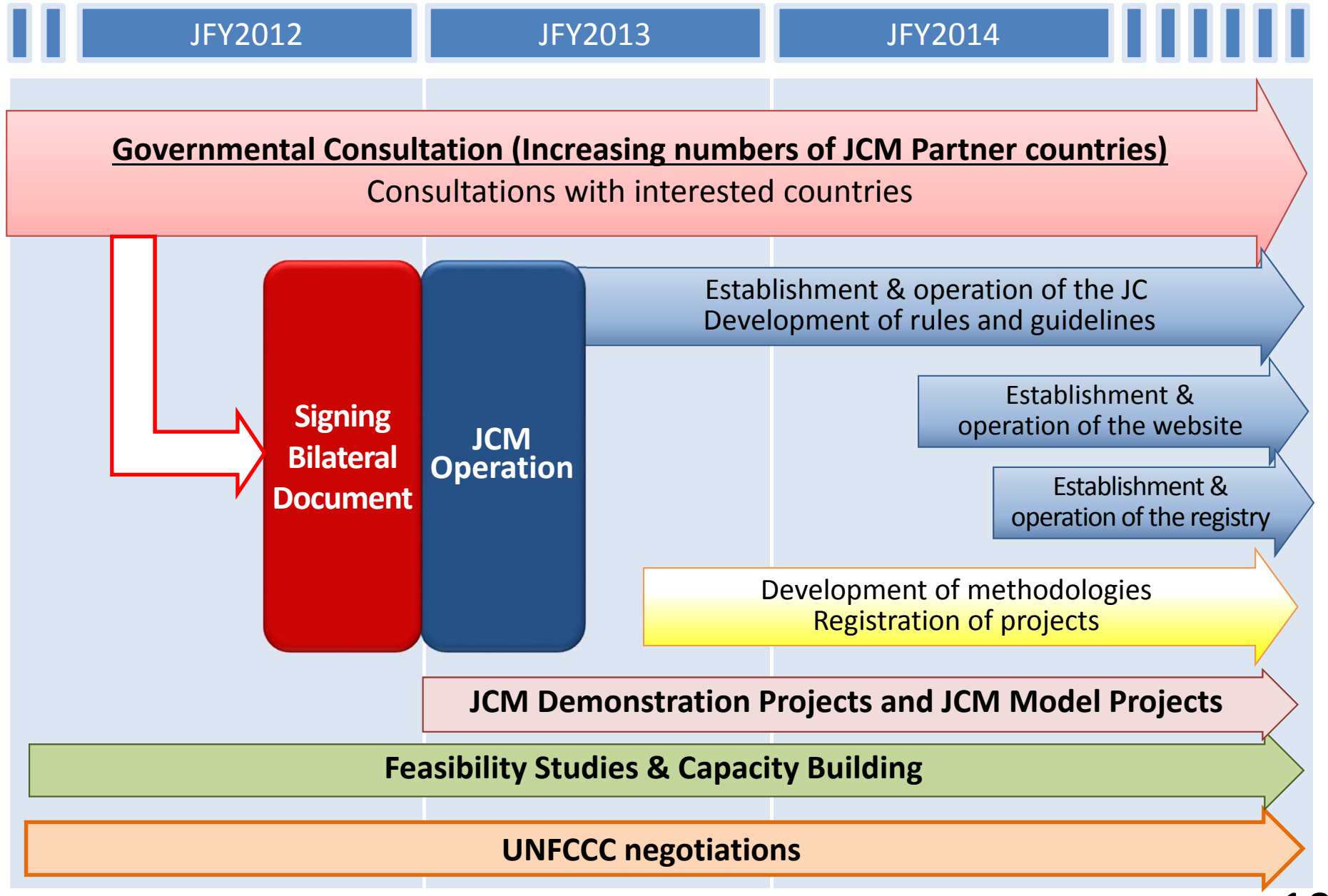
Can be conducted by the same TPE
Can be conducted simultaneously

Key features of the JCM in comparison with the CDM

(Subject to further consideration and discussion with host countries)

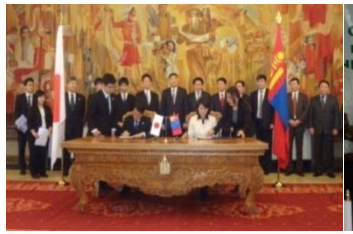
	JCM	CDM
Governance	- "de-centralized" structure (Each Government, Joint Committee)	- "centralized" structure (CMP, CDM Executive Board)
Sector/project Coverage	- Broader coverage	- Specific projects are difficult to implement in practice (e.g. USC coal-fired power generation)
Validation of projects	- 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



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, Cambodia and Mexico.



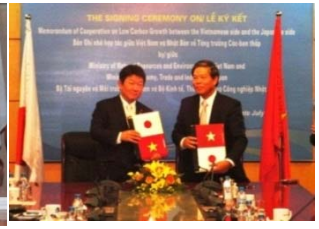
Mongolia
Jan. 8, 2013
（Ulaanbaatar）

Bangladesh
Mar. 19, 2013
(Dhaka)

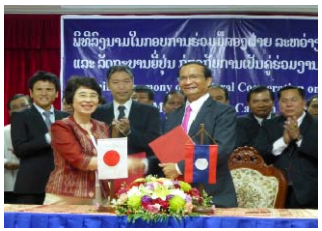
Ethiopia
May 27, 2013
(Addis Ababa)

Kenya
Jun. 12,2013
(Nairobi)

Maldives
Jun. 29, 2013
(Okinawa)

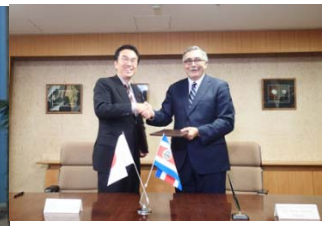


Viet Nam
Jul. 2, 2013
(Hanoi)



Lao PDR
Aug. 7, 2013
(Vientiane)

Indonesia
Aug. 26, 2013
(Jakarta)



Costa Rica
Dec. 9, 2013
(Tokyo)

Palau
Jan. 13, 2014
(Ngerulmud)

Cambodia
Apr. 11, 2014
(Phnom Penh)

Mexico
Jul. 25, 2014
(Mexico City)

- Japan held Joint Committee meetings with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, 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[d] (kt CO_2 eq)										*Other units[d,e] (kt CO_2 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		
Total														

- The JCM is one of various approaches based on Decision 1/CP.18, jointly developed and implemented by Japan and partner countries, 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)

		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

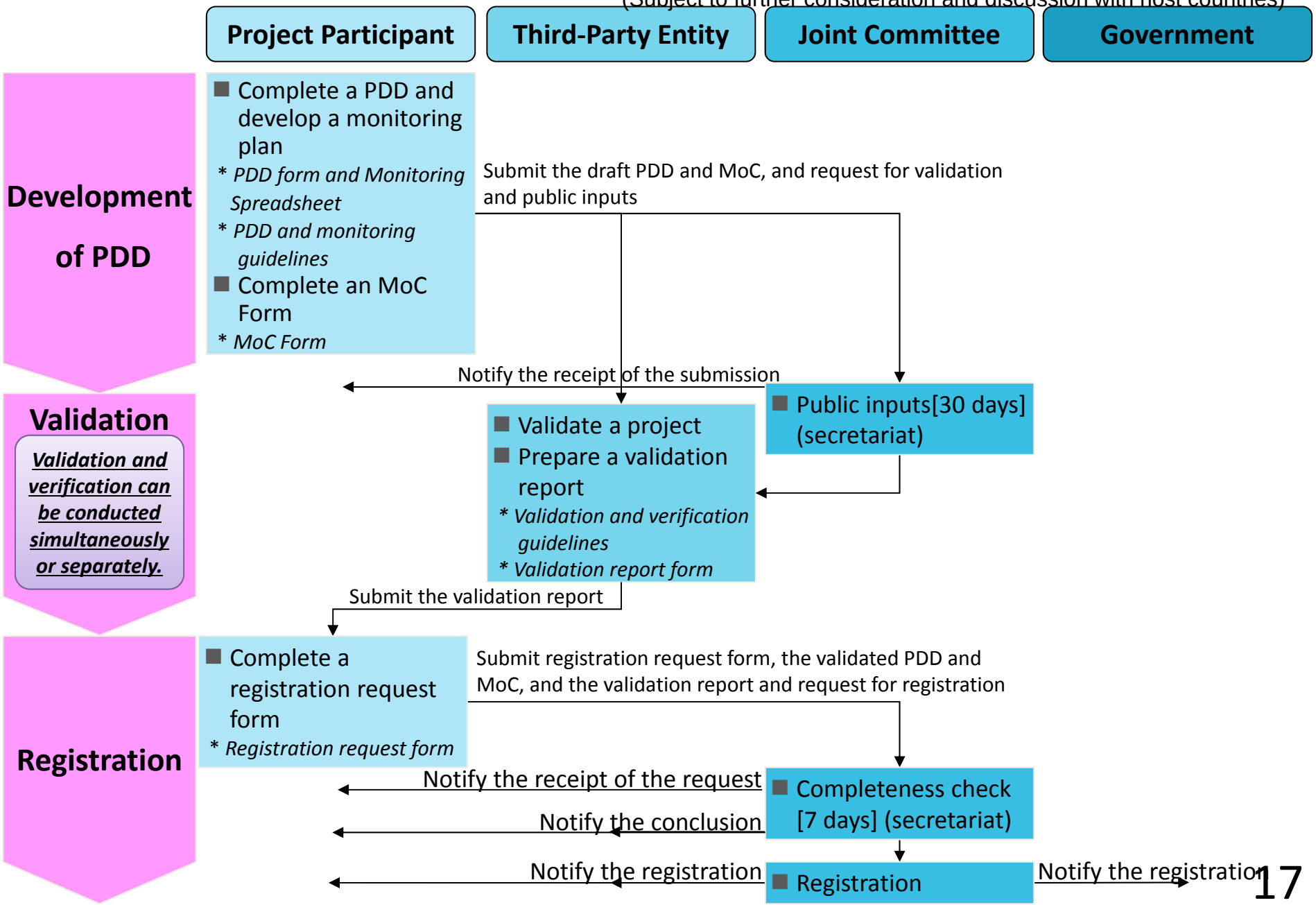
(Subject to further consideration and discussion with host countries)

	Project Participant (Methodology Proponent)	Government (Methodology Proponent)	Joint Committee
Submission of Proposed Methodology	■ Prepare a proposed methodology * *Methodology guidelines* * *Proposed methodology form* * *Proposed Methodology Spreadsheet Form*	■ Prepare a proposed methodology * *Methodology guidelines* * *Proposed methodology form* * *Proposed Methodology Spreadsheet Form*	■ Develop a proposed methodology under the initiative of the Joint Committee
		Submit the proposed methodology	
Completeness Check	Notify the receipt of the submission Communicate the result of completeness check		■ Completeness check [7 days] (secretariat)
Public Inputs			■ Public inputs [15 days] (secretariat)
Approval of Proposed Methodology			■ Assessment of the proposed methodology [60 days or up to 90 days]
	Notify the outcome of consideration		■ Approval of the proposed methodology

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

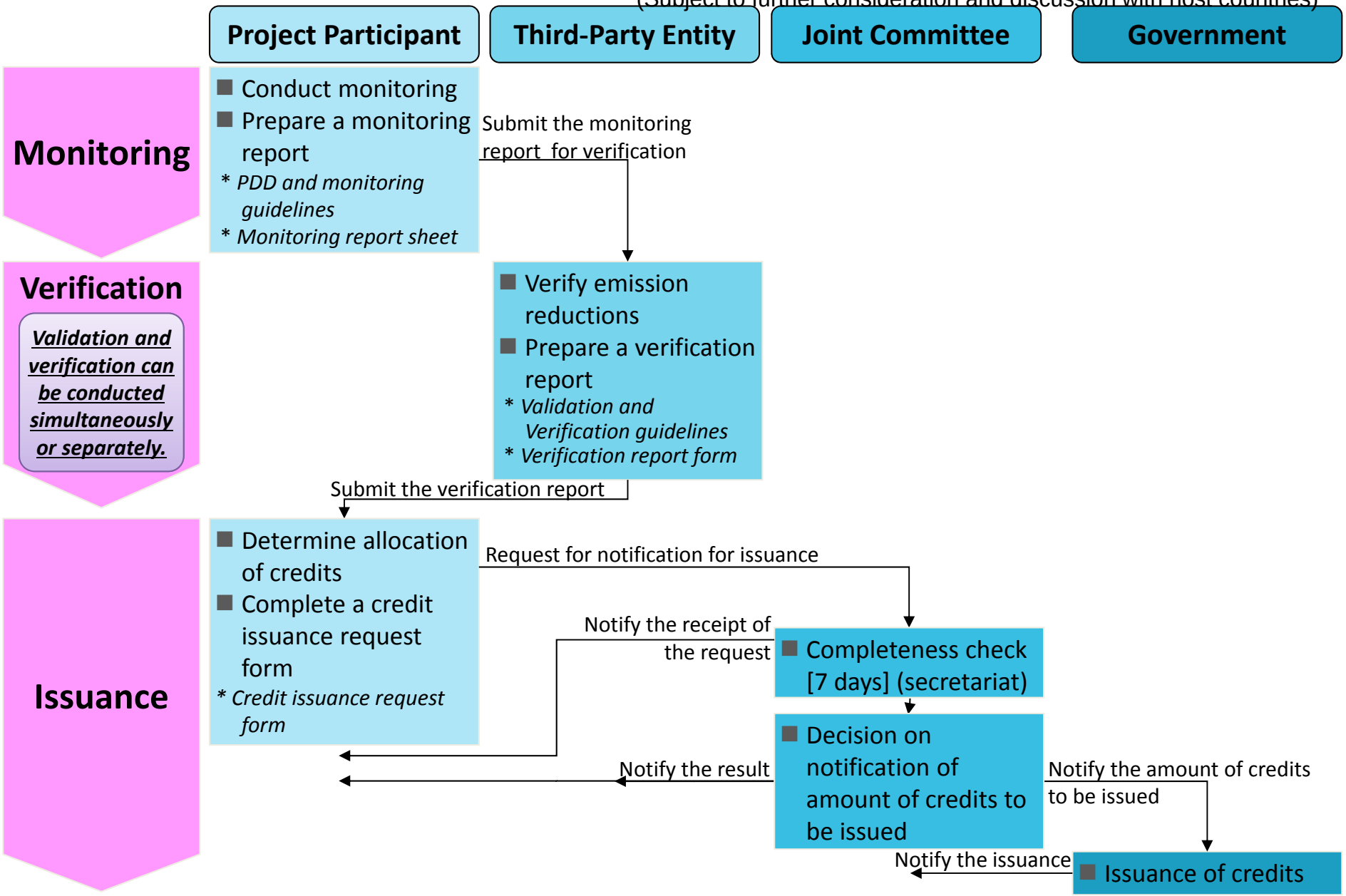
Registration & Issuance Procedure of the JCM (1/2)

(Subject to further consideration and discussion with host countries)



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

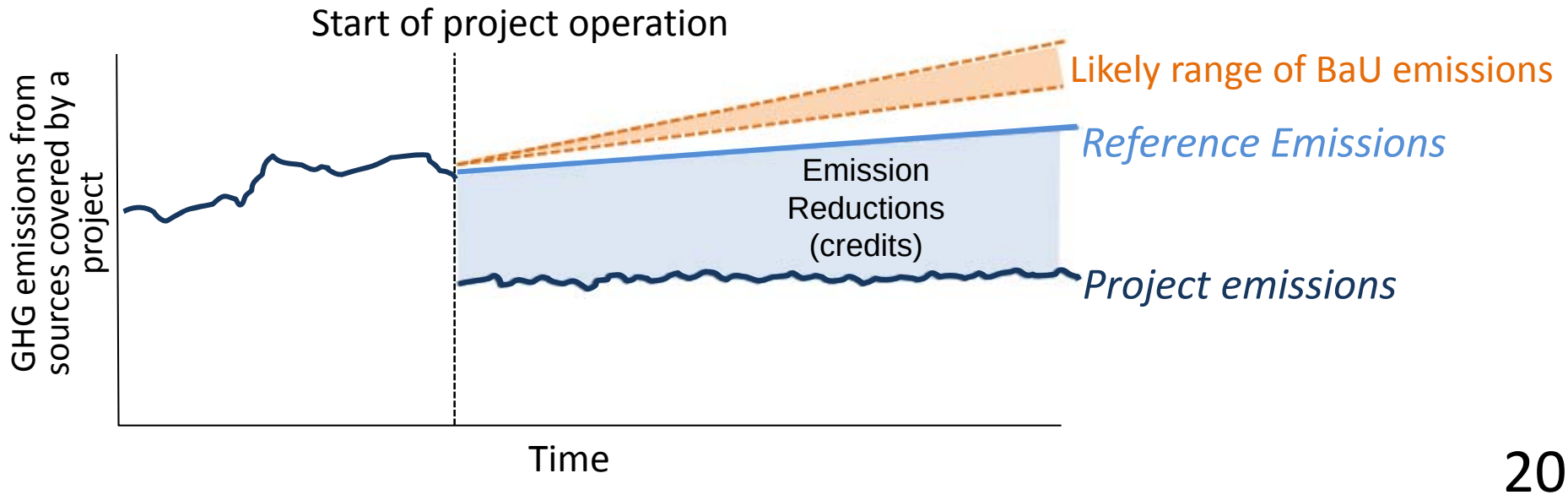
- The JC may establish panels and appoint external experts to assist part of its work.

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

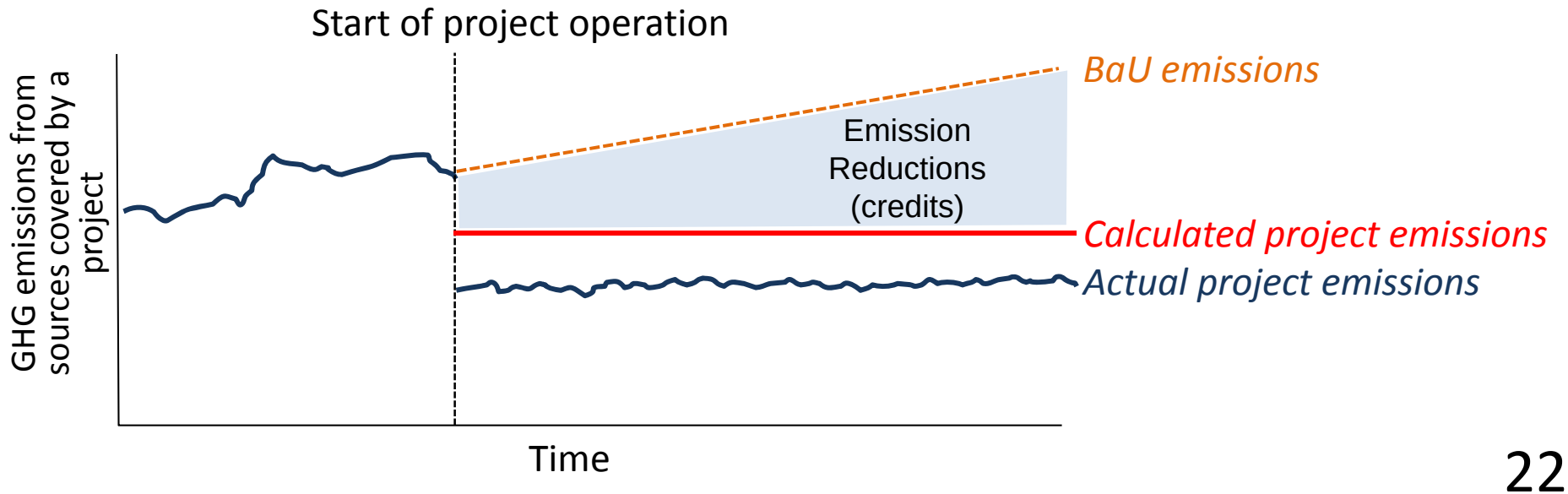
(Subject to further consideration and discussion with host countries)

- Reference emissions are calculated by multiplying a "crediting threshold" which is typically expressed as GHG emissions per unit of output with 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, while increasing 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.
- <u>Using conservative default values in parameters to calculate project emissions</u> 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	• 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 allow project participants to determine 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 allow GHG emission reductions/removals to be calculated 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 is 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 when applying for the JCM project registration.

Eligibility Criteria of the JCM

(Subject to further consideration and discussion with host countries)

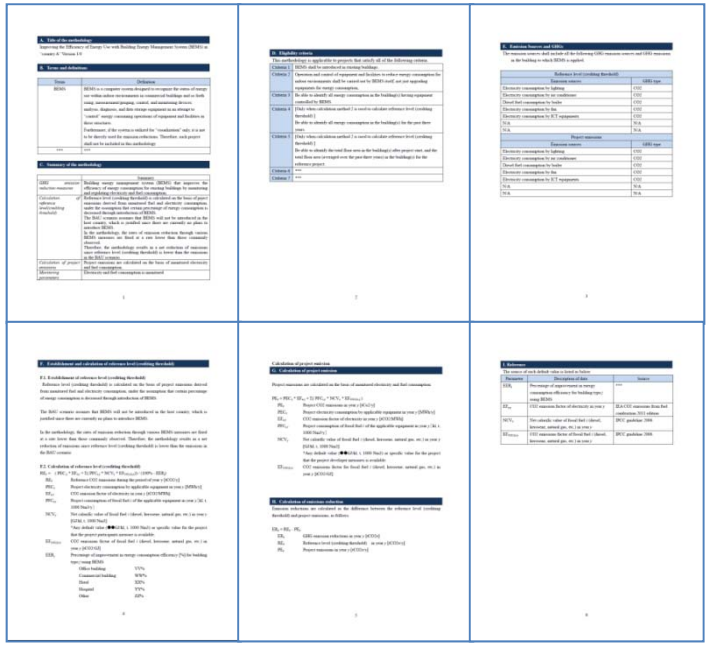
- Eligibility criteria in JCM methodologies contain the following:
  1. The requirements for <u>the project to be registered as a JCM project</u>. *<Basis for the assessment of validation and registration of a proposed project>*
  2. The <u>requirements for the project to be able to apply the JCM methodology</u>. *<same as "applicability condition of the methodology" under the CDM>*
- Examples of eligibility criteria 1.
  - Introduction of <u>*xx*</u> (products/technologies) whose design efficiency is above <u>*xx*</u> (e.g. output/kWh) *<Benchmark Approach>*
  - Introduction of <u>*xx*</u> (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 <u>*x*</u> year(s)
  - Electricity generation by <u>*xx*</u> (e.g. PV, wind turbine) connected to the grid
  - Retrofit of the existing boiler

Overview of JCM Methodology, Monitoring Plan and Monitoring Report

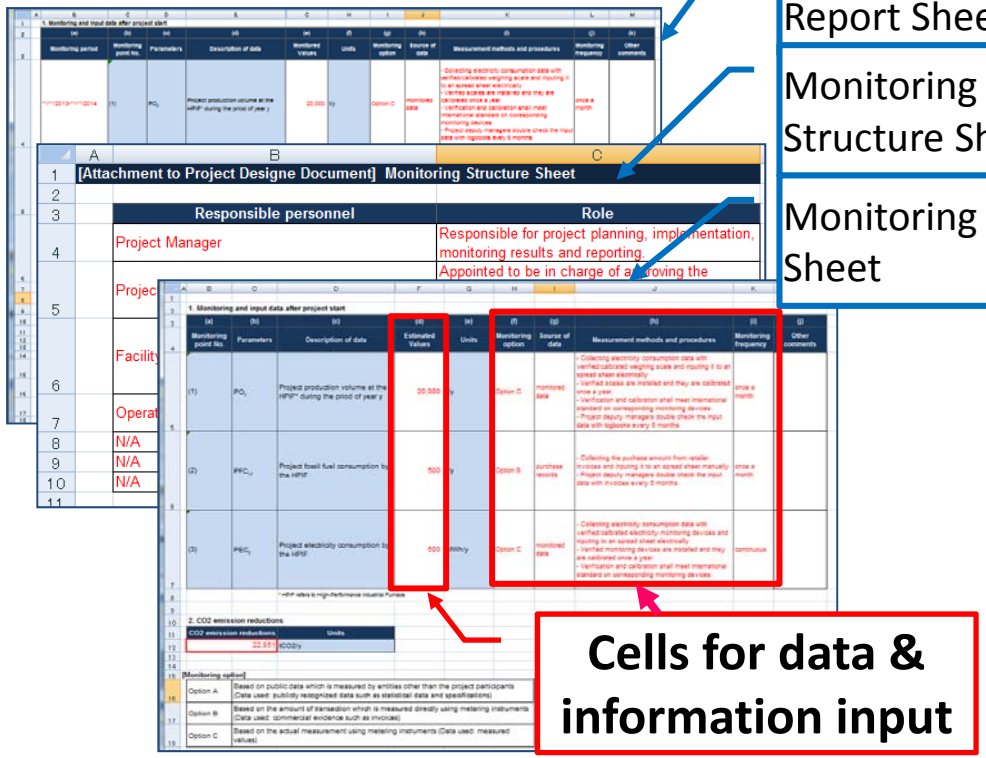
(Subject to further consideration and discussion with host countries)

- 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



Monitoring Spreadsheet



Monitoring Report Sheet

Monitoring Structure Sheet

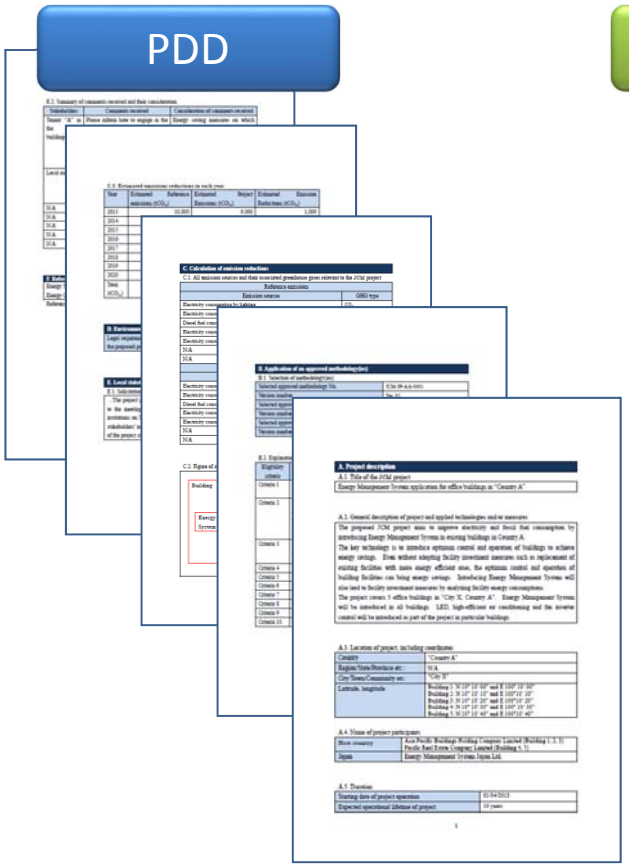
Monitoring Plan Sheet

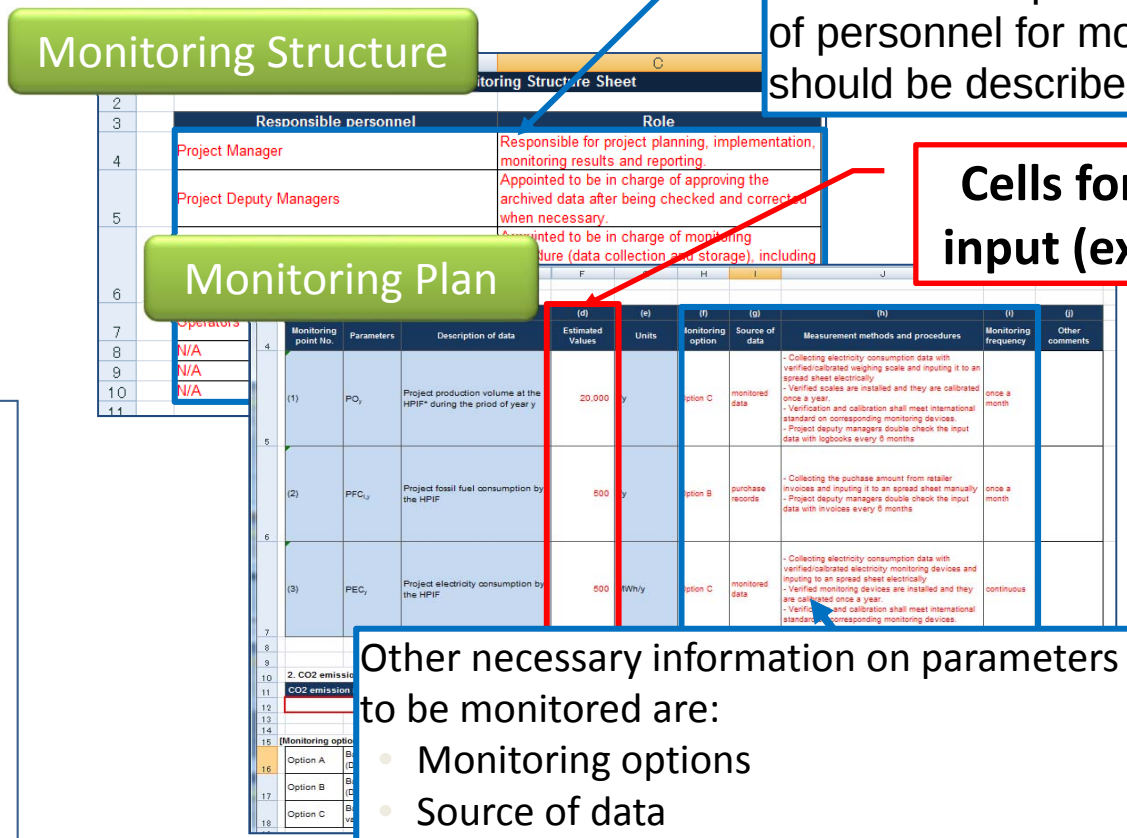
Cells for data & information input

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.





Roles and responsibilities of personnel for monitoring should be described

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

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.

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

Cells for data input (ex post)

Monitoring period

(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	/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_{iy}	Project fossil fuel consumption by the HPIF	500	/y	Option B	purchase records	- Collecting the puchase 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 specificatio...
Option B	Based on the amount of transaction which is measured directly using m... used: commercial evidence such as invoices)
Option C	Based on the actual measurement using metering instruments (Data us...

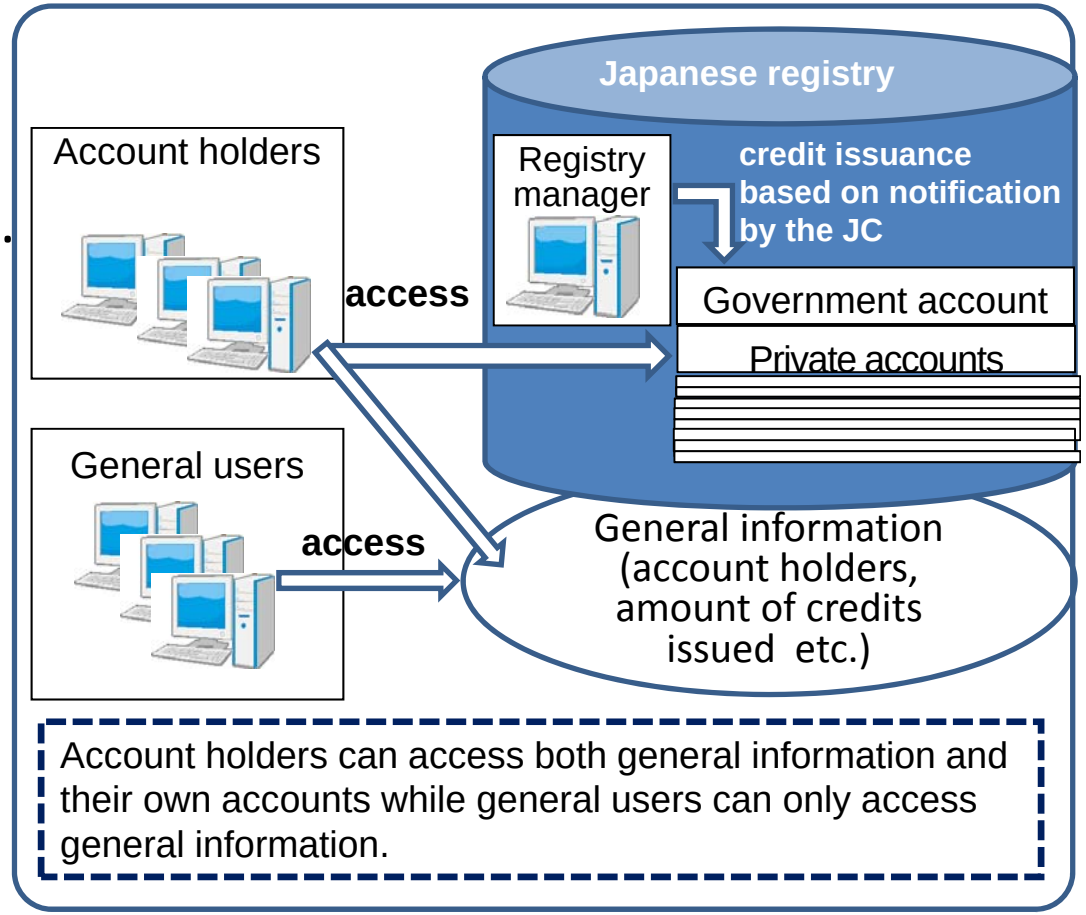
Other necessary information on monitored parameters are to be filled in:

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

JCM Registry

Establishment & operation

- A registry will be established by each side (RoI (draft) para13 (b)).
- The registries need to share "Common specifications", e.g.,
  - functions (e.g. issuance, retirement, holding, cancelation of credits)
  - account type (e.g. holding account, government holding account, cancellation account, and retirement account)
  - rules of serial number of the credit
  - information sharing



- Japan plans to establish its registry and start operation in FY 2015.
- The host countries will also establish their own registry.

JCM Website

Contents

- General information page
- Individual JCM Partner countries-Japan page

Function

- Information sharing to the public, e.g.,
  - the JC decisions,
  - rules and guidelines,
  - methodologies,
  - projects,
  - call for public inputs/comments,
  - status of TPEs, etc.
- Internal information sharing for the JC members, e.g.,
  - File sharing for electric decisions by the JC

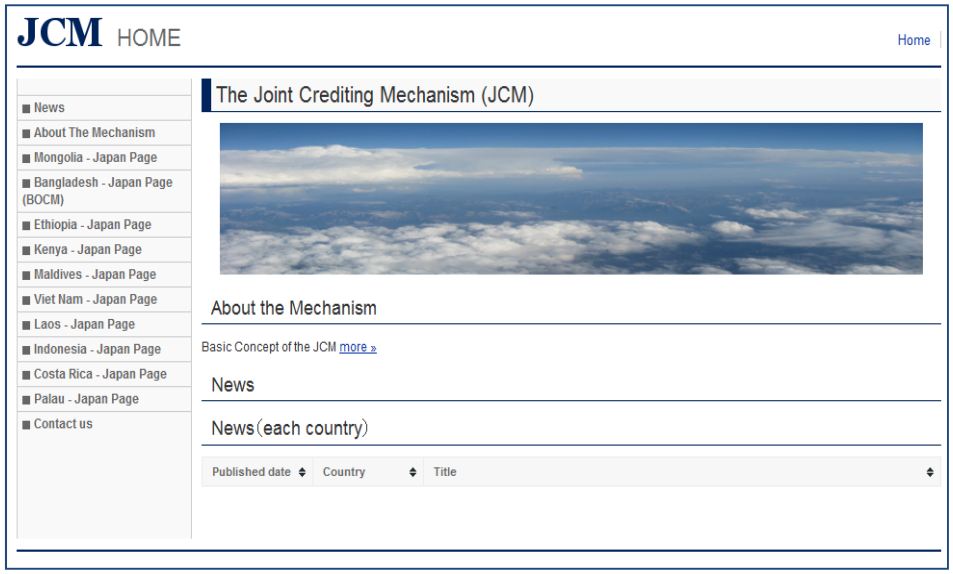


Image of the general information page <URL: https://www.jcm.go.jp/>

Image of the individual JCM Partner countries-Japan page

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.

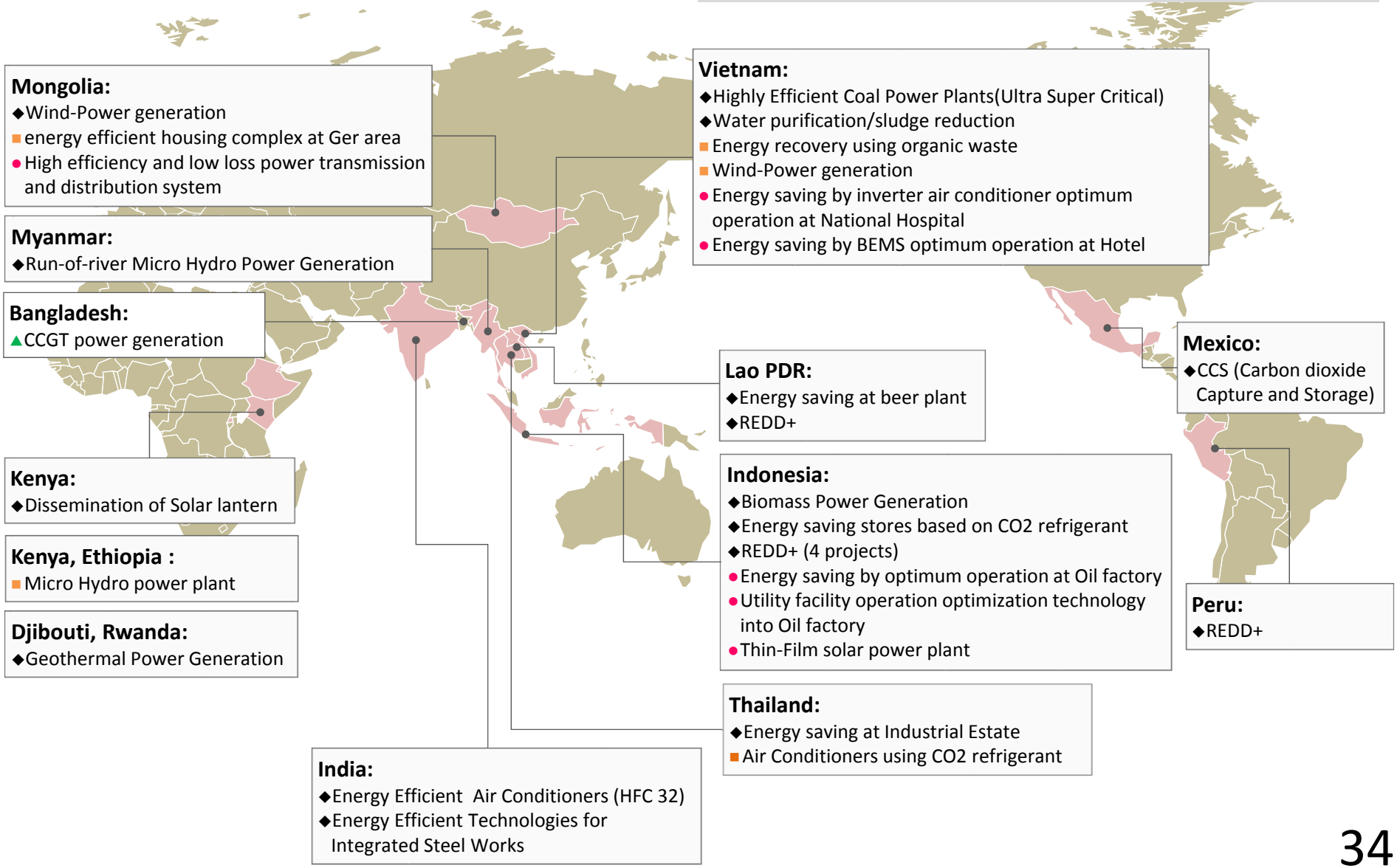
Capacity Building Programmes

■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

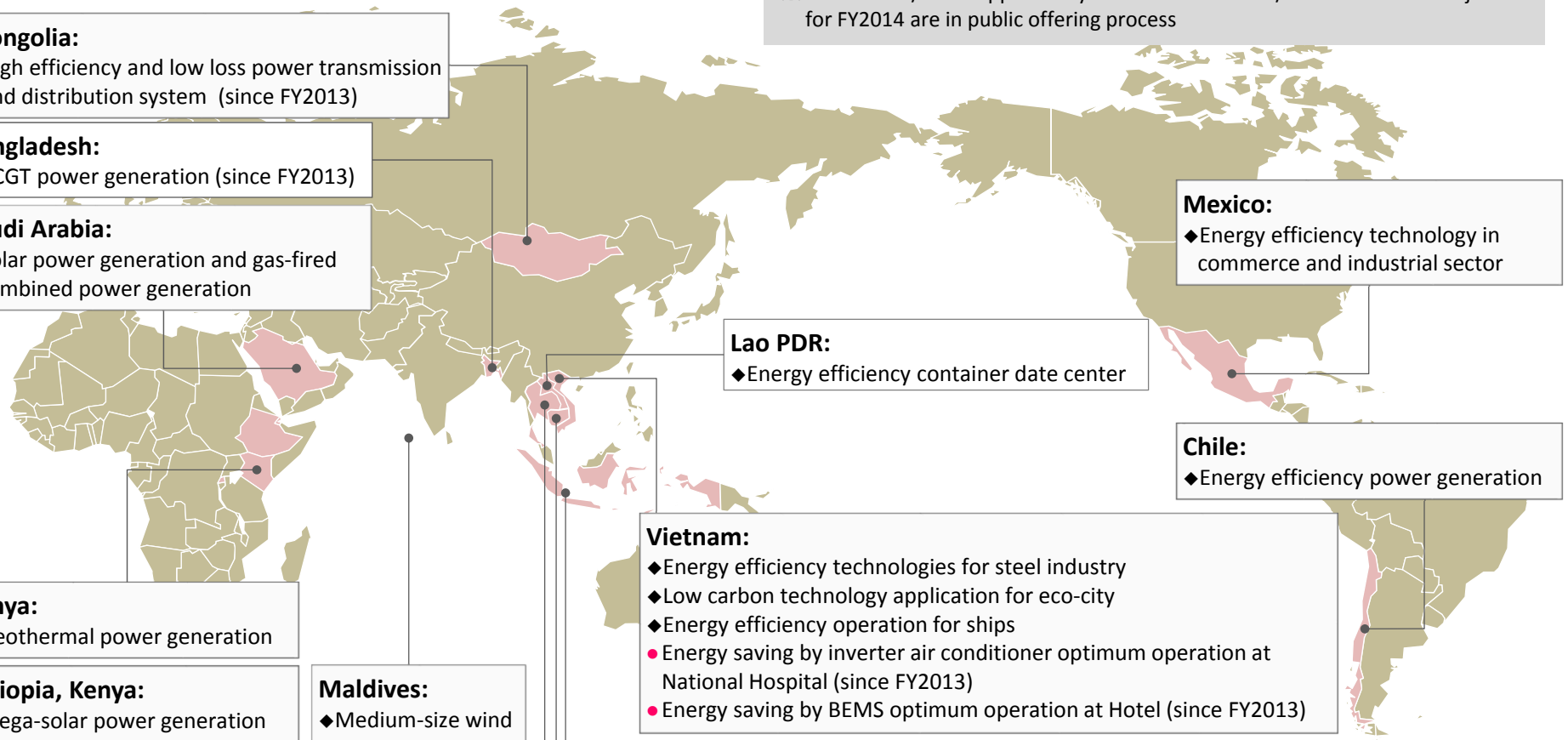
◆→ METI's FSs for Policy Recommendation
■→ NEDO's FSs for Project Exploration /Development
▲→ NEDO's MRV Applicability Verification Study
●→ NEDO's Demonstration Projects



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 date center

Chile:
◆Energy efficiency 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)

Kenya:
◆Geothermal power generation

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

Maldives:
◆Medium-size wind power generation

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

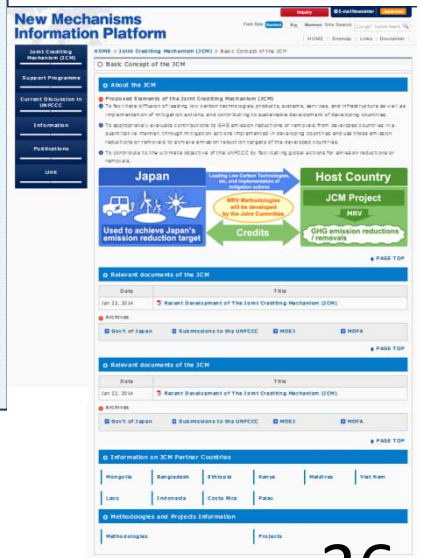
Elaborating investment plan on JCM projects, developing MRV methodologies and investigating feasibility on potential JCM projects,

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)*

Government of Japan

Finance part of an investment cost (**up to the half**)

Conduct MRV and expected to deliver at least half of JCM credits issued

International consortiums
(which include Japanese entities)

- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO_2 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

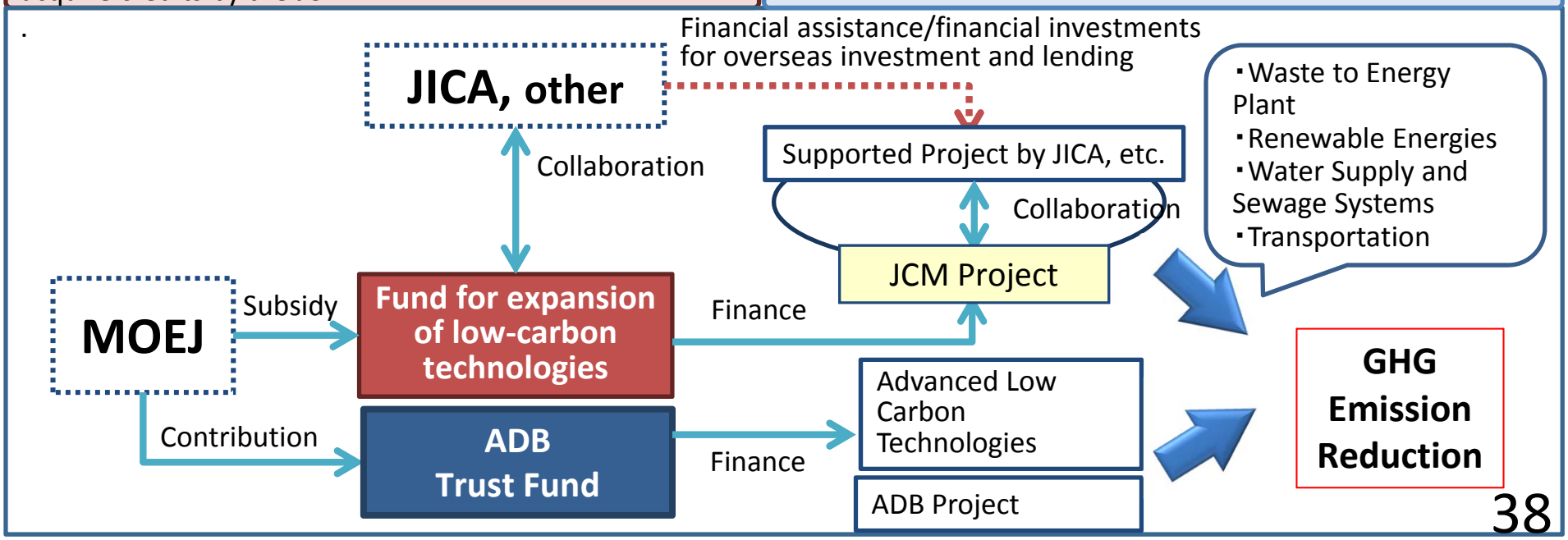
1.8 billion JPY (approx. USD18 million)

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.

Palau:

- **Small scale solar power plants for commercial facilities in island states**
  High efficiency and high wind pressure resistance solar cell modules are installed on the roofs of commercial facilities, and the photovoltaic power generation system generate electricity, to replace grid electricity.

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 (CO2 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 NH3 and CO2 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 & Banteng province)**
  The high performance refrigerating machine with efficient compressor and economizer cycle will be introduced for factory air-conditioning.

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.

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

◆-- JCM Project Planning Study (PS)
◆-- JCM Feasibility Study (FS)
◇-- REDD+ Demonstration Study (REDD+)

Mongolia:
- ◆10MW-scale Solar Power Generation for Stable Power Supply
- ◆Efficiency Improvement of Combined Heat and Power Plant by Thermal Insulation

Bangladesh:
- ◆Waste Heat Recovery and Utilization in Textile and Garment Factories

Sri Lanka:
- ◆10MW-scale Biomass based Power Generation

Maldives:
- ◆Installation of Solar PV and Storage Battery with Energy Management System (EMS)

Ethiopia:
- ◆20MW-scale Geothermal Power Generation

Kenya:
- ◆Energy Saving by Micro Flush Toilet

Myanmar:
- ◆Introduction of Waste to Energy Plant in Yangon City
- ◆Environment Improvement through Utilization of Biogas from POME Fermentation System

Lao PDR:
- ◆Biomass Utilization in Cement Kiln
- ◇REDD+ in Luang Prabang Province

Cambodia:
- ◆Energy Saving by Efficiency Improvement of Water Treatment Plants of Phnom Penh Water Supply Authority
- ◇REDD+ in Prey Long Area and Seima Area

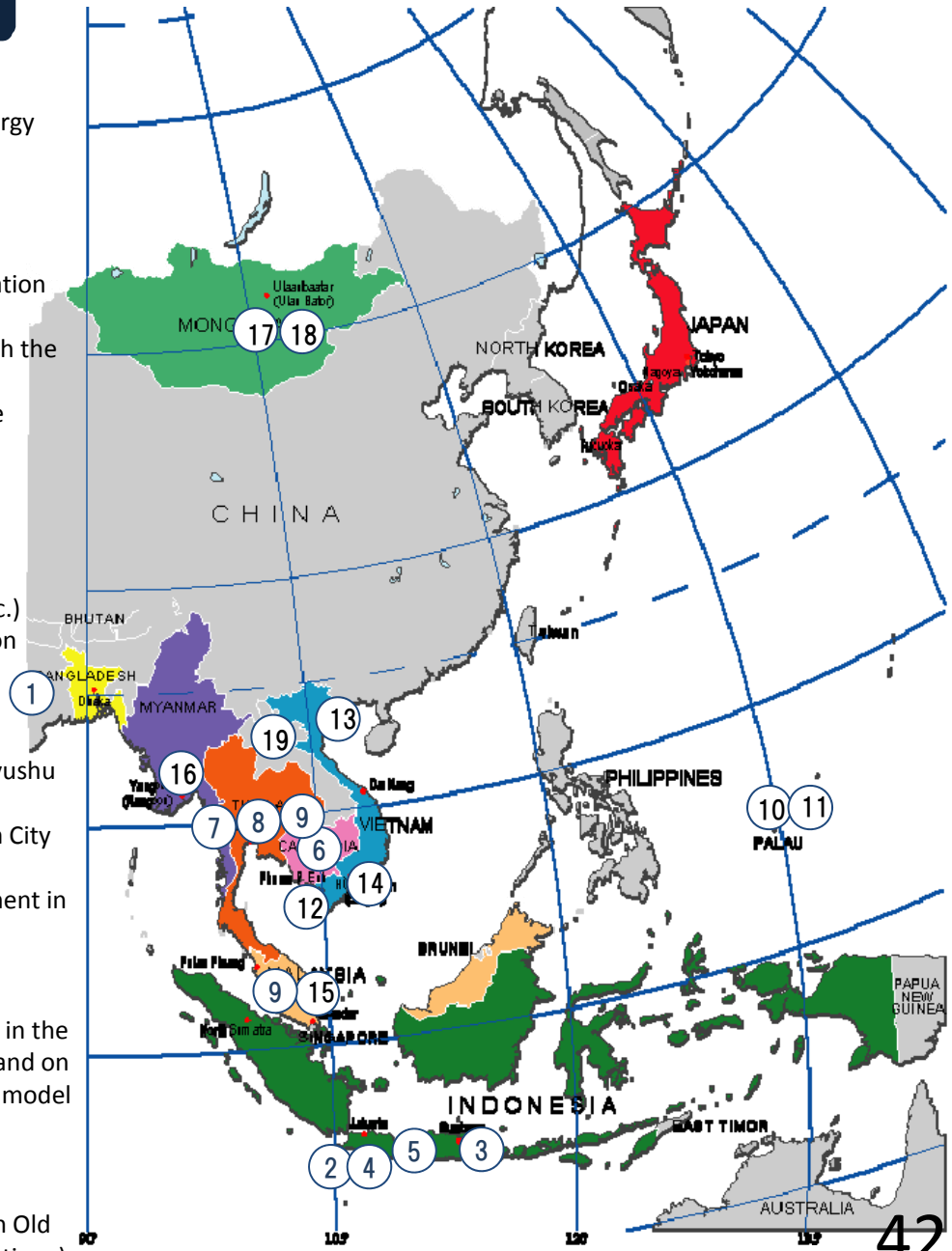
Palau:
- ◆Solar Power Generation System

Costa Rica:
- ◆Promotion of Electric Vehicle for Taxi Usage

Viet Nam:
- ◆Introduction of Energy-from-Waste Project in Ho Chi Minh City
- ◆Energy Saving for Irrigation Facility by Introducing High-efficiency Pumps
- ◆40MW-scale Hydro Power Generation in Lao Cai Province
- ◆Recovery and Utilization of Biogas from Mixed-treatment of Waste and Septage
- ◆Introduction of Co-generation System Using Bagasse in Sugar Factory

Indonesia:
- ◆Installation of Combined Heat and Power System in Hotel
- ◆Waste Heat Recovery and Electricity Generation in Flat Glass Production Plant
- ◆Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory
- ◆3.7MW Run-of-river Hydro Power Generation in Sulawesi
- ◇Improvement of REDD+ Implementation Using IC Technology

Large Scale JCM Feasibility Study in 2014 by MOEJ

Selected Studies

1. The feasibility study to promote Low Carbon Technology application in India(Gujarat , Maharashtra ,Pumjab)
2. Feasibility study on financing scheme development project for promoting energy efficiency equipment installation in Indonesia(Jakarta, Bali etc.)
3. Low Carbon City Planning Project in Surabaya, Indonesia(Surabaya City)
4. Feasibility Study on Eco-Lease Scheme for Low Carbon Vehicle towards Joint Crediting Mechanism Projects Expansion（Indonesia National Level）
5. Collaboration on Project for Developing a Low Carbon Society under collaboration between Bandung city and Kawasaki cityin Bandung, Indonesia(Bandung)
6. Study for Developing Environmentally and Culturally Sustainable Cities through the Joint Crediting Mechanism in Siem Reap(Angkor Park and Siem Reap city)
7. Study on the Accelerating Implementation of Bangkok Master Plan on Climate Change through the JCM(Bangkok)
8. Introduction of a recycling system for cars and parts in Thailand(Bangkok)
9. Strategic Promotion of Recovery and Destruction of Fluorocarbons （Bangkok/Johor Bahru ）
10. Demonstration Project on Installing an Evacuation Shelter with Renewable Energy as a “Low-Carbon/Resilient Model for Small Island Countries”(Palau etc.)
11. Feasibility study on comprehensive resource circulation system for low carbon society in Republic of Palau(Palau)
12. The feasibility study toward eco-island in cooperation between Kien Giang Province and Kobe City(Kien Giang Province)
13. Hai Phong Green Growth Action Plan Development in Association with Kitakyushu City（Hai Phong City）
14. Ho Chi Minh City – Osaka City Cooperation Project for Developing Low Carbon City (Ho Chi Minh City)
15. Feasibility Study on a Large-Scale GHG Emissions-Reduction Project Development in the Iskandar Development Region, Malaysia(Iskandar Development Region)
16. Feasibility Study on Rice Husk Power Generation System for Low-carbon Communities in Ayeyarwady Region, Myanmar(Ayeyarwady)
17. Study for the development of JCM projects for 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 in Mongolia(Ulaanbaatar)
18. Feasibility study on a programme-type finance scheme for the JCM in Mongolia(Ulaanbaatar)
19. JCM Feasibility Studies of GHG Mitigation Projects Contributing to Low Carbon Old Capital based on City-to-City Cooperation between Vientiane and Kyoto("Vientiane)