

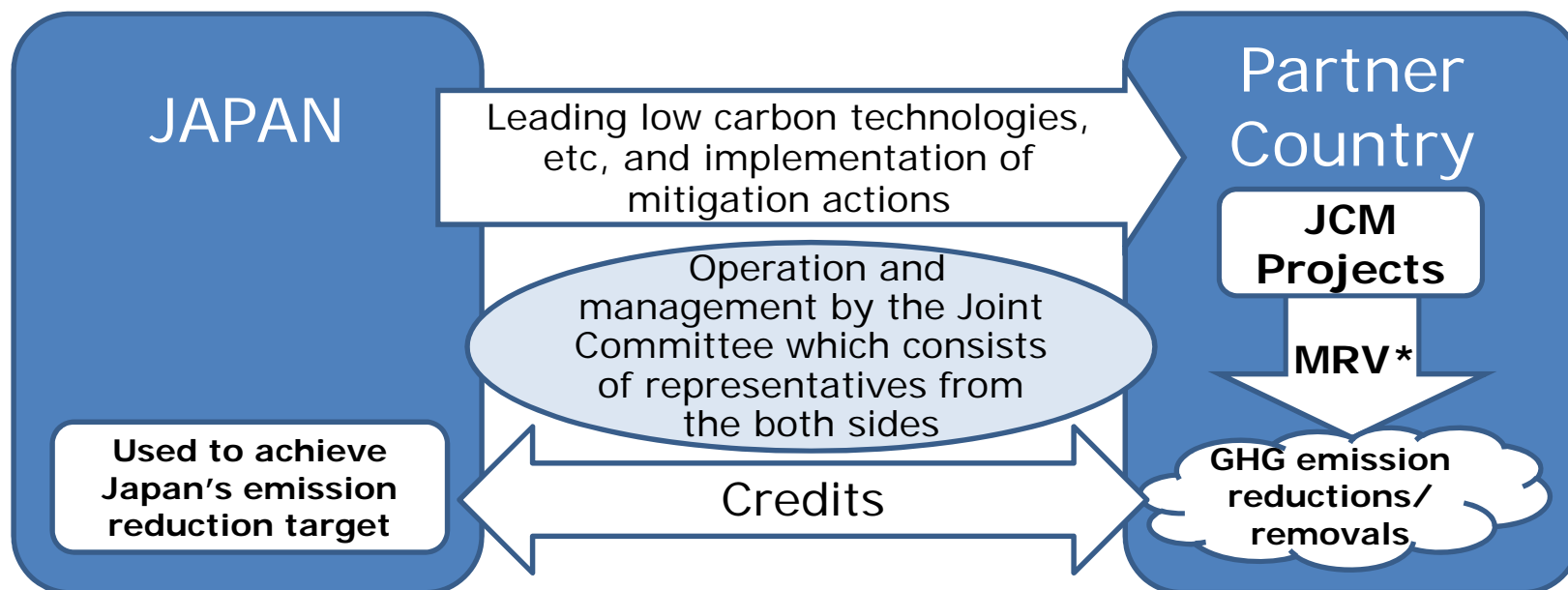
# Recent Development of The Joint Crediting Mechanism (JCM)

October 2017  
Government of Japan

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

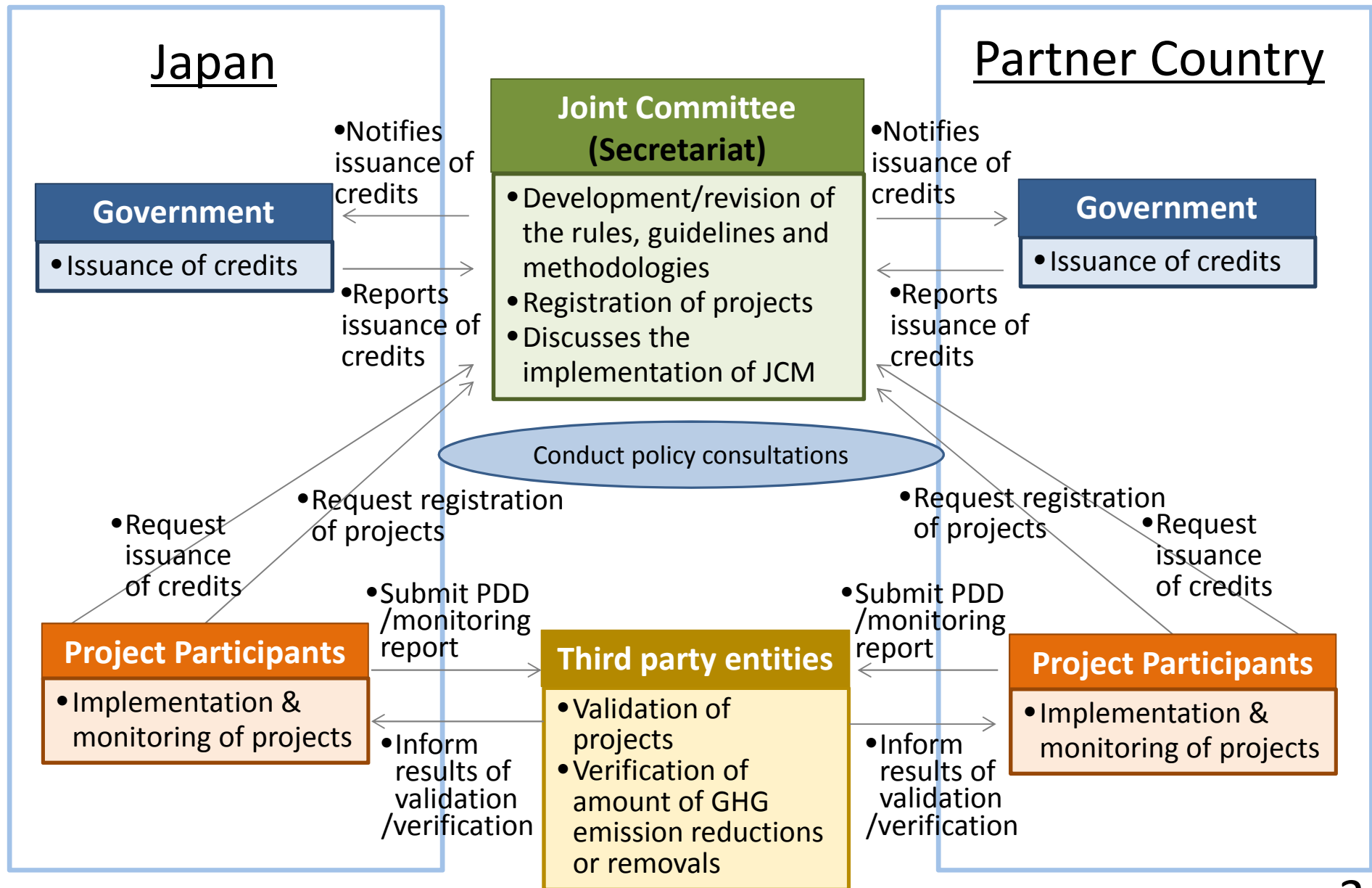
## Basic Concept of the JCM

- 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 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.



\*measurement, reporting and verification 2

# Scheme of the JCM



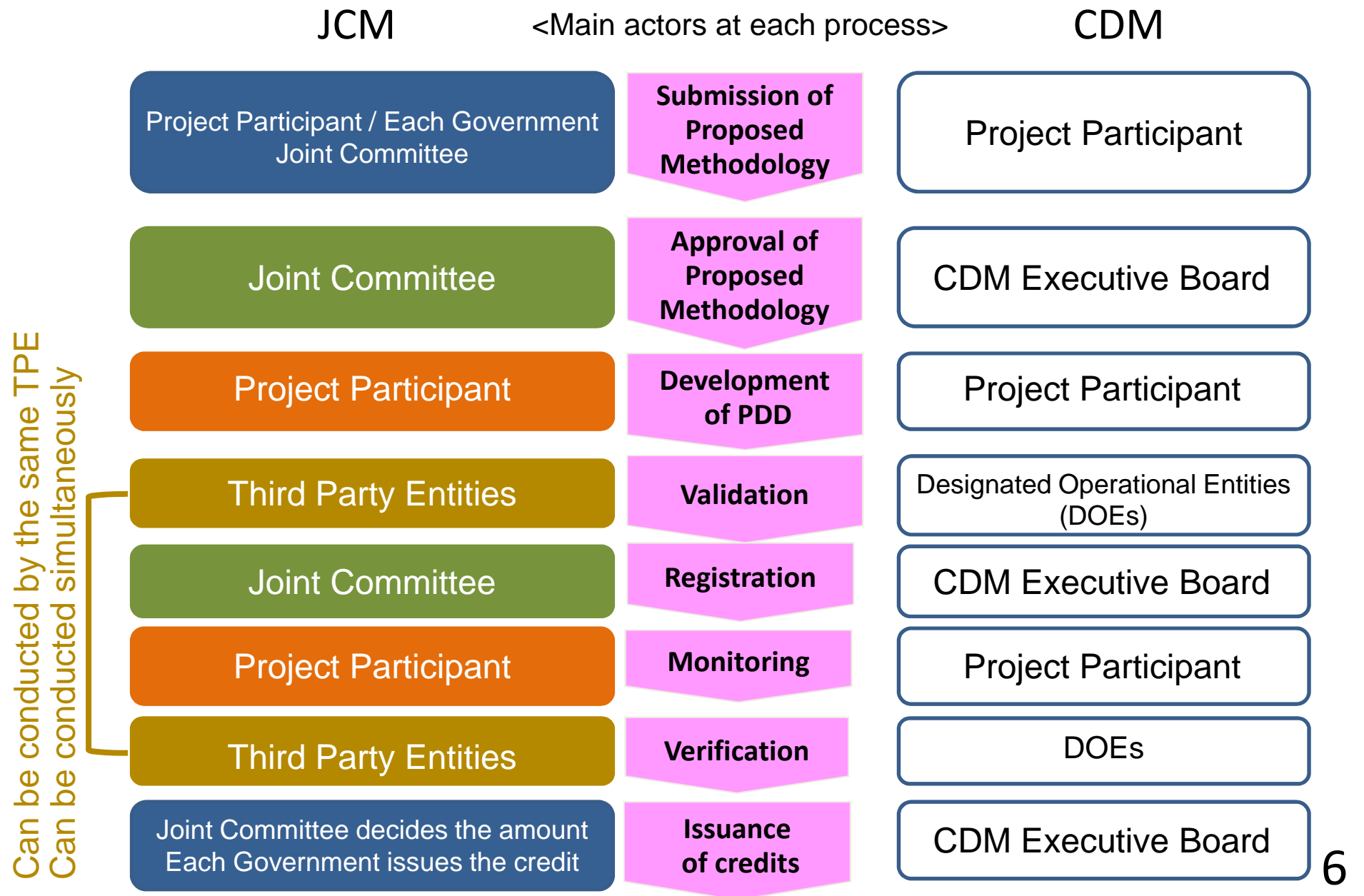
## The role of the Joint Committee and each Government

- 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.

## 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.

# Project Cycle of the JCM and the CDM



## JCM Partner Countries

- Japan has held consultations for the JCM with developing countries since 2011 and has established the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and the Philippines.



Mongolia  
Jan. 8, 2013  
(Ulaanbaatar)



Bangladesh  
Mar. 19, 2013  
(Dhaka)



Ethiopia  
May 27, 2013  
(Addis Ababa)



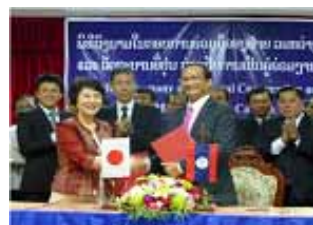
Kenya  
Jun. 12, 2013  
(Nairobi)



Maldives  
Jun. 29, 2013  
(Okinawa)



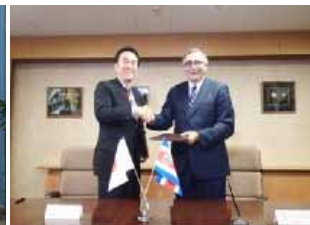
Viet Nam  
Jul. 2, 2013  
(Hanoi)



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)



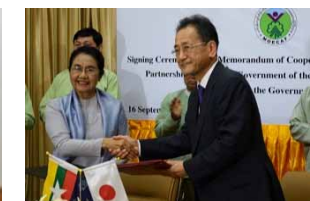
Mexico  
Jul. 25, 2014  
(Mexico City)



Saudi Arabia  
May 13, 2015



Chile  
May 26, 2015  
(Santiago)



Myanmar  
Sep. 16, 2015  
(Nay Pyi Taw)



Thailand  
Nov. 19, 2015  
(Tokyo)



the Philippines  
Jan. 12, 2017  
(Manila)

## Statement by Prime Minister Shinzo Abe at the COP21 (Excerpt)



The second component of Japan's new set of contribution is innovation. The key to acting against climate change without sacrificing economic growth is the development of innovative technologies. To illustrate, there are technologies to produce, store and transport hydrogen towards realizing CO<sub>2</sub>-free societies, and a next-generation battery to enable an electric car to run 5 times longer than the current level. By next spring Japan will formulate the "Energy and Environment Innovation Strategy." Prospective focused areas will be identified and research and development on them will be strengthened. (snip)

**In addition, many of the advanced low-carbon technologies do not generally promise investment-return to developing countries. Japan will, while lowering burdens of those countries, promote diffusion of advanced low carbon technologies particularly through implementation of the JCM.**



# Japan's INDC (Excerpt)

## Japan's INDC

- Japan's INDC towards post-2020 GHG emission reductions is at the level of a reduction of 26.0% by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY 2005) (approximately 1.042 billion t-CO<sub>2</sub>eq. as 2030 emissions), ensuring consistency with its energy mix, set as a feasible reduction target by bottom-up calculation with concrete policies, measures and individual technologies taking into adequate consideration, *inter alia*, technological and cost constraints, and set based on the amount of domestic emission reductions and removals assumed to be obtained. .

## Information to facilitate clarity, transparency and understanding

- The JCM is not included as a basis of the bottom-up calculation of Japan's emission reduction target, but the amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction.

## Reference information

### GHG emissions and removals

### JCM and other international contributions

- Japan establishes and implements the JCM in order both to appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions in developing countries, and to use them to achieve Japan's emission reduction target.
- Apart from contributions achieved through private-sector based projects, accumulated emission reductions or removals by FY 2030 through governmental JCM programs to be undertaken within the government's annual budget are estimated to be ranging from 50 to 100 million t-CO<sub>2</sub>g

# The JCM related Articles in the Paris Agreement

## Article 6 of the Agreement

2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.
  3. The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties.
- Use of market mechanisms, including the JCM, is articulated under Article 6 which prescribes for the use of emission reductions realized overseas towards national emission reduction targets.
  - The amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction in accordance with the Paris Agreement.
  - Japan is going to contribute to the development of the guidance for robust accounting including for avoidance of double counting to be adopted by the CMA\*.

\*the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

## The UNFCCC documents related to the JCM (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 UNFCCC documents related to the JCM (2/2)

### Decision 19/CP18

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

Table 4(b) Reporting on progress

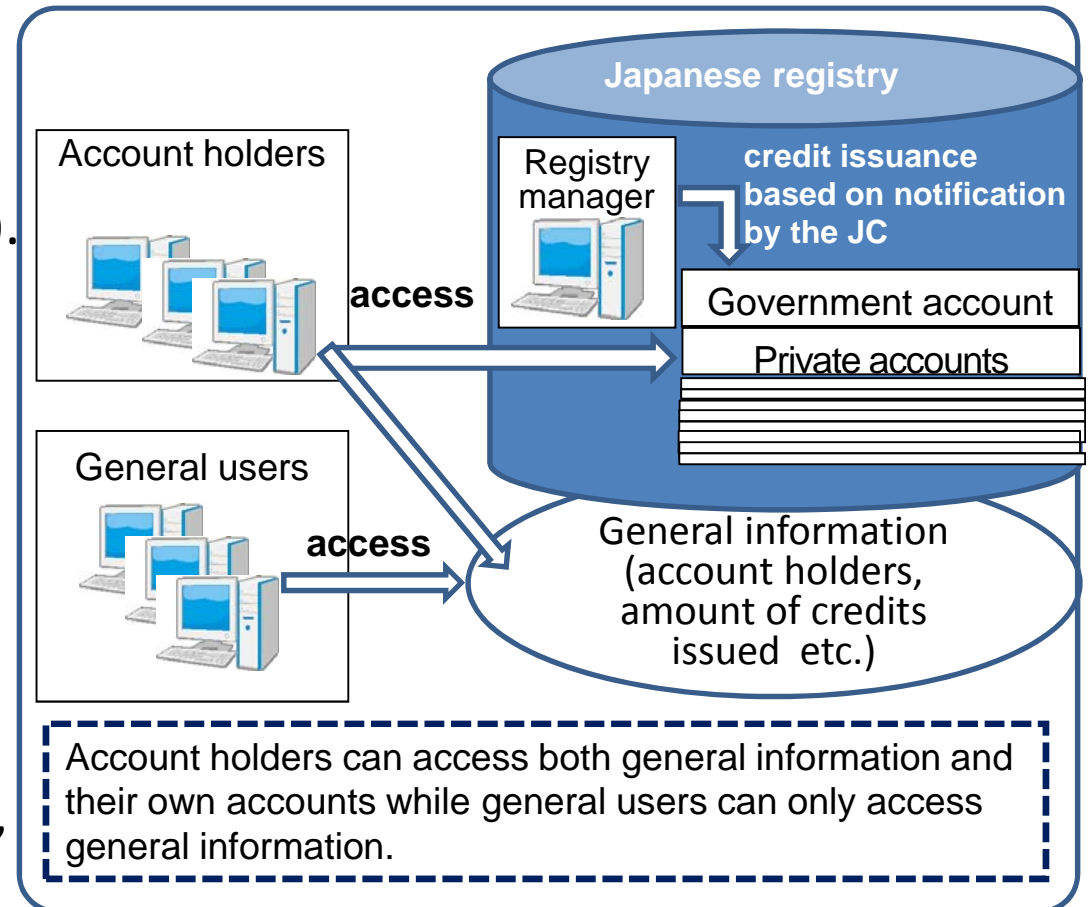
<i>Kyoto Protocol units<sup>d</sup></i> <i>(kt CO<sub>2</sub> eq)</i>										<i>Other units<sup>d,e</sup></i> <i>(kt CO<sub>2</sub> eq)</i>			
<i>AAUs</i>		<i>ERUs</i>		<i>CERs</i>		<i>tCERs</i>		<i>lCERs</i>		<i>Units from market-based mechanisms under the Convention</i>		<i>Units from other market-based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

- 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 has reported and will report to the COP the use of the JCM in Biennial Reports including the Common Tabular in line with Decision 19/CP18.

# 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 has established its registry and started operation in Nov. 2015.
- The partner countries will also establish their own registry.



# JCM Website

URL: <https://www.jcm.go.jp/>

## 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

The screenshot shows the JCM HOME website. The main heading is "The Joint Crediting Mechanism (JCM)". Below the heading is a large image of a blue sky with white clouds. The page is divided into several sections: "About the Mechanism", "Basic Concept of the JCM", and "News". The "News" section contains a table with columns for "Published date", "Country", and "Subject".

Published date	Country	Subject
03 Jun 16	Indonesia	<a href="#">Electronic Decision by the J/C</a>
10 May 16	Indonesia	<a href="#">Electronic Decision by the J/C</a>
13 May 16	Indonesia	<a href="#">Call for public comments on a JCM proposed methodology (Indonesia) "Installation of energy saving air jet loom at textile factory" (13 May to 27 May 2016)</a>
12 May 16	Indonesia	<a href="#">Electronic Decision by the J/C</a>
26 Apr 16	Cambodia	<a href="#">2nd Joint Committee in Phnom Penh</a>
21 Apr 16	Cambodia	<a href="#">Electronic Decision by the J/C</a>
14 Apr 16	Indonesia	<a href="#">Call for public comments on a proposed revision to the approved methodology ID_AM002 "Replacement of conventional burners with regenerative burners for aluminum holding furnaces" (14 April to 28 April 2016)</a>
14 Apr 16	Indonesia	<a href="#">Decision by the J/C</a>
12 Apr 16	Indonesia	<a href="#">Call for public comments on a proposed JCM methodology (Indonesia) "Reduction of Energy Consumption by Introducing an Energy-Efficient Old Corrugated Carton Processing System into a Cardboard Factory" (12 April to 26 April 2016)</a>

Image of the general information page

The screenshot shows the JCM Partner Country - Japan page. The main heading is "Partner Country - Japan". Below the heading is a large image of a blue sky with white clouds. The page is divided into several sections: "About the Mechanism", "Basic Concept of the Joint Crediting Mechanism (JCM)", and "News". The "News" section contains a table with columns for "Published date", "Country", and "Subject".

Published date	Country	Subject
07 Aug 13		<a href="#">The Bilateral Document Signed by Laos and Japan</a>

Image of the individual JCM Partner countries-Japan page

## Progress of the JCM in each partner country as of Oct 24 2017

Partner countries	Start from	No. of JC	No. of registered projects	No. of approved methodologies	Pipeline (JCM Financing Programme & Demonstration Projects in FY 2013-2016)
Mongolia	Jan 2013	5	4	3	6
Bangladesh	Mar 2013	3		1	6
Ethiopia	May 2013	3		3	2
Kenya	Jun 2013	3		3	3
Maldives	Jun 2013	2		1	3
Viet Nam	Jul 2013	6	5	9	20
Lao PDR	Aug 2013	2		1	4
Indonesia	Aug 2013	6	7	12	29
Costa Rica	Dec 2013	1		1	2
Palau	Apr 2014	4	3	1	3
Cambodia	Apr 2014	2		2	5
Mexico	Jul 2014	1		1	4
Saudi Arabia	May 2015	2			1
Chile	May 2015	1			2
Myanmar	Sep 2015	1			5
Thailand	Nov 2015	3	1	6	23
Philippines	Jan 2017				4
<b>Total</b>	<b>17</b>	<b>45</b>	<b>20</b>	<b>44</b>	<b>122</b>

**15**

## Registered Projects (1/3)

No.	Country	Project Title	General description of project
MN001	Mongolia	Installation of High-Efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	Introducing high-efficiency HOBs to fulfill the demand of new heat facilities for the school buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
MN002	Mongolia	Centralization of Heat Supply System by Installation of High-Efficiency Heat Only Boilers in Bornuur soum Project	Introducing high-efficiency HOBs to fulfill the demand for heat supply system in the public buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
VN001	Viet Nam	Eco-Driving by Utilizing Digital Tachograph System	Improving transportation fuel efficiency by installing digital tachographs, in which the quantity of fuel consumption and running distance are continuously analyzed and provide feedbacks and advices to the drivers based on the analyzed data.
VN002	Viet Nam	Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam	Installing inverter room air conditioners (RACs) and Energy Management System (EMS) to optimize operation of multiple inverter RACs in national hospitals
VN003	Viet Nam	Low carbon hotel project in Vietnam: Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	Installing high-efficiency equipment of hot water supply, air conditioning management system and LED lighting for improving the energy efficiency of hotels
VN004	Viet Nam	Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	Introducing 1,618 amorphous high efficiency transformers which reduce transmission and distribution loss in the power distribution system of southern Vietnam.
ID001	Indonesia	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID002	Indonesia	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the food industry cold storage.



## Registered Projects (2/3)

No.	Country	Project Title	General description of project
ID003	Indonesia	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the frozen food processing plant.
ID004	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang, West Java	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID005	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID006	Indonesia	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	Introducing high-efficiency facilities to the grocery stores for saving energy as below; <ul style="list-style-type: none"> <li>- Inverter-type air conditioner</li> <li>- LED lighting</li> <li>- Fridge freezer showcase with natural refrigerant</li> </ul>
ID008	Indonesia	Introducing double-bundle modular electric heat pumps at AXIA SOUTH CIKARANG Tower 2	Introducing a water-to-water double-bundle modular electric heat pumps (modular HP) system for hot water supply and air conditioning system to a new residential hotel.
PW001	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW002	Palau	Small Scale Solar Power Plants for Schools in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW003	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States II	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.

## Registered Projects (3/3)

No.	Country	Project Title	General description of project
<b>MN004</b>	Mongolia	Installation of 2.1MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb	The Project involves installation of a large-scale solar power plant with the generating capacity of 10MW in Darkhan City, Mongolia. The project is implemented by Solar Power International LLC, a Mongolian company utilizing the crystalline silicon photovoltaic (PV) modules of Sharp Corporation of Japan (ND-AF310). Sharp's PV modules are well known for high durability, adhering to the company standard which is more stringent than Japan Industrial Standard or International Electrotechnical Commission standards.
<b>MN003</b>	Mongolia	10MW Solar Power Project in Darkhan City	Solar power plant with 2.3MW solar PV module is installed by the proposed project in Songinokhairkhan district located on the outskirts of Ulaanbaatar. The project site is in northwest 37km from Ulaanbaatar city center. The purpose of this project is to reduce CO2 emissions, mitigate air pollution and stabilize power supply in Mongolia. The solar power plant of the proposed project is connected to the national grid. This solar power plant can replace some parts of power generation from coal fired power plants of the national grid by renewable energy.
			The proposed JCM project aims to reduce CO2 emissions by introducing a total of 994.56kW grid-connected solar photovoltaic (PV) systems at two sites: 798.72kW on top of the A-14 Factory Building of Siam Steel International Public Company

## Approved Methodologies (1/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
MN_AM001	Mongolia	Energy distribution	Installation of energy-saving transmission lines in the Mongolian Grid	Reduction of transmission loss by introduction of LL-ACSR/SA (Low Electrical Power Loss Aluminum Conductors, Aluminum-Clad Steel Reinforced).
MN_AM002	Mongolia	Energy industries	Replacement and Installation of High Efficiency Heat Only Boiler (HOB) for Hot Water Supply Systems	Installation of new HOB for hot water supply system and the replacement of existing coal-fired HOB. The boiler efficiency of the reference HOB is typically lower than that of the project HOB. Therefore, the project activity leads to the reduction of coal consumption, resulting in lower emission of GHGs as well as air pollutants.
MN_AM003	Mongolia	Energy industries	Installation of Solar PV System	Displacement of grid electricity and/or captive electricity by installation and operation of solar PV system(s).
BD_AM001	Bangladesh	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	Saving energy by introducing high efficiency centrifugal chiller for the target factory, commerce facilities etc.
ET_AM001	Ethiopia	Energy industries	Electrification of communities using Micro hydropower generation	Displacement of electricity using diesel fuel and/or lighting using kerosene by installation and operation of the micro hydropower generation unit.
ET_AM002	Ethiopia	Energy industries	Electrification by photovoltaic power generation in Ethiopia	Displacement of electricity using diesel fuel and/or lighting using kerosene by installation and operation of the PV.
ET_AM003	Ethiopia	Energy industries	Introduction of Biomass Combined Heat and Power Plant	Displacement of fossil fuel consumed for heat production and electricity generation by installation and operation of a biomass CHP plant.
KE_AM001	Kenya	Energy industries	Electrification of communities using Micro hydropower generation	Displacement of electricity using diesel fuel and/or lighting using kerosene by installation and operation of the micro hydropower generation unit.
KE_AM002	Kenya	Energy industries	Installation of Solar PV System	Displacement of electricity using fossil fuel as a power source by installation and operation of a small hydropower plant.

## Approved Methodologies (2/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
KE_AM003	Kenya	Energy industries	Installation of Run-of-river Small Hydropower Generation Plant	Displacement of grid electricity and/or captive electricity using fossil fuel as a power source by installation and operation of the solar PV system(s).
MV_AM001	Maldives	Energy industries	Displacement of Grid and Captive Genset Electricity by Solar PV System	Displacement of grid electricity and/or captive electricity using diesel fuel as a power source by installation and operation of the solar PV system(s)
VN_AM001	Viet Nam	Transport	Eco-Driving by Utilizing Digital Tachograph System	Improvement of driving efficiency by installation of digital tachograph system to freight vehicle fleets providing to the drivers a real-time feedback against inefficient driving.
VN_AM002	Viet Nam	Energy demand	Introduction of Room Air Conditioners Equipped with Inverters	Energy saving achieved by introduction of RACs equipped with inverters.
VN_AM003	Viet Nam	Energy demand	Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	Reduction of electricity and fossil fuel consumed by existing facilities is achieved by replacing or substituting these facilities with high efficiency equipment.
VN_AM004	Viet Nam	Waste handling and disposal	Anaerobic digestion of organic waste for biogas utilization within wholesale markets	Avoid the emissions of methane to the atmosphere from organic waste that have been left to decay anaerobically at a solid waste disposal site and to introduce renewable energy technologies that supply biogas that displaces fossil fuel use.
VN_AM005	Viet Nam	Energy distribution	Installation of energy efficient transformers in a power distribution grid	Installation of energy efficient transformers (transformers with amorphous metal core) in a power distribution grid to reduce no-load losses by transformers, which leads to reduction of losses for grid electricity.
VN_AM006	Viet Nam	Energy demand	Introduction of air conditioning system equipped with inverters	Saving energy by introducing air-conditioning system with inverter.
LA_AM001	Laos	Energy demand	Installation and operation of energy-efficient data center (DC) in the Lao PDR	Energy reduction which leads to reductions of GHG is achieved by introducing energy-efficient project DC in place of the reference DC.

## Approved Methodologies (3/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
ID_AM001	Indonesia	Energy industries	Power Generation by Waste Heat Recovery in Cement Industry	Waste heat recovery (WHR) system generates electricity through waste heat recovered from cement production facility. Electricity generated from the WHR system replaces grid electricity resulting in GHG emission reductions of the connected grid system.
ID_AM002	Indonesia	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	Saving energy by introducing high efficiency centrifugal chiller for the target factory, commerce facilities etc.
ID_AM003	Indonesia	Energy demand	Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Food Industry Cold Storage and Frozen Food Processing Plant	Saving energy by introducing high efficiency refrigerators to the food industry cold storage and frozen food processing plants.
ID_AM004	Indonesia	Energy demand	Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store	Saving energy by introducing inverter-type air conditioning system for cooling for grocery store.
ID_AM005	Indonesia	Energy demand	Installation of LED Lighting for Grocery Store	Saving energy by introducing LED (Light Emitting Diode) lighting for grocery store.
ID_AM006	Indonesia	Energy demand	GHG emission reductions through optimization of refinery plant operation in Indonesia	Introduction of plant optimization control systems (APC) that reduce energy consumption in the hydrogen production unit (HPU) and hydro cracking unit (HCU) at a refinery plant.
ID_AM007	Indonesia	Energy demand	GHG emission reductions through optimization of boiler operation in Indonesia	The project achieves energy conservation in boilers, through operation optimization by applying Utility Facility Operation Optimization Technology.
ID_AM008	Indonesia	Energy demand	Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air conditioning load inside the store	Saving total energy of in-store showcase and air conditioning system by introducing a separate type natural refrigerant fridge-freezer showcase for grocery store, which leads to GHG emission reductions, through the reduction of air conditioning electricity load demand by not releasing waste heat inside the store.
ID_AM009	Indonesia	Energy demand	Replacement of conventional burners with regenerative burners for aluminum holding furnaces	By replacing conventional burners with regenerative burners for aluminum holding furnaces, consumption of natural gas is reduced, which leads to the reduction of GHG emissions.

## Approved Methodologies (4/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
ID_AM010	Indonesia	Energy demand	Introducing double-bundle modular electric heat pumps to a new building	The project contributes to GHG emission reductions at a new building, by reducing electricity and oil consumption with efficient double-bundle modular electric heat pumps where heating/cooling energy is simultaneously generated.
ID_AM011	Indonesia	Energy demand	Installation of energy saving air jet loom at textile factory	Installing air jet looms equipped with energy saving technologies at textile factory which reduces compressed air consumption and leads to reducing electricity consumption by the compressor.
ID_AM012	Indonesia	Energy demand	Reduction of Energy Consumption by Introducing an Energy-Efficient Old Corrugated Carton Processing System into a Cardboard Factory	Installing energy saving technologies to OCC lines in a cardboard factory. Mechanical efficiency of each element device is improved and system configuration and control are optimized for e.g. improvement of impeller-shape in an agitator leading to higher motor efficiency and optimization of the system configuration of pumps.
PW_AM001	Palau	Energy industries	Displacement of Grid and Captive Genset Electricity by a Small-scale Solar PV System	Displacement of grid electricity and/or electricity using diesel fuel as a power source by installation and operation of the solar PV system(s).
KH_AM001	Cambodia	Energy demand	Installation of LED street lighting system with wireless network control	The street lighting system that introduces LED lamps and lighting control devices with utilization of wireless network is installed on streets to save electricity consumption.
KH_AM002	Cambodia	Energy industries	Installation of Solar PV System	Displacement of grid electricity and/or captive electricity using diesel fuel as power source by installation and operation of the solar PV system(s).
TH_AM001	Thailand	Energy industries	Installation of Solar PV System	Displacement of grid electricity and/or captive electricity using fossil fuel as power source by installation and operation of the solar PV system(s)
TH_AM002	Thailand	Energy demand	Energy Saving by Introduction of Multi-stage Oil-Free Air Compressor	Introducing multi-stage oil-free air compressor in manufacturing process of semiconductors.

## Approved Methodologies (5/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
TH_AM002	Thailand	Energy demand	Energy Saving by Introduction of Multi-stage Oil-Free Air Compressor	This methodology applies to the project that aims at saving energy by introducing multi-stage oil-free air compressor in manufacturing process of semiconductors.
TH_AM003	Thailand	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	This methodology applies to the project that aims for saving energy by introducing high efficiency centrifugal chiller for the target factory, commerce facilities etc. in Thailand.
TH_AM004	Thailand	Energy demand	Installation of energy saving air jet loom at textile factory	Replacement of existing air jet looms at textile factory with the ones equipped with energy saving technology reduces compressed air consumption and leads to reducing electricity consumption by the compressor, and consequently GHG emission reductions.
TH_AM005	Thailand	Energy industries	Energy Saving by Introduction of High Efficiency Non-Inverter Type Centrifugal Chiller	This methodology applies to the project that aims for saving energy by introducing high efficiency centrifugal chiller for the target factory, commercial facilities etc. in Thailand.
TH_AM006	Thailand	Energy demand	Energy Saving by Introduction of Multi-stage Oil-Free Air Compressor	This methodology applies to the project that aims at saving energy by introducing multi-stage oil-free air compressor in manufacturing process of semiconductors.

## Approved Methodologies (6/6)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
VN_ PM009	Viet Nam	Energy demand	Installation of Solar PV System	This project strengthens measures to save energy of the shopping mall in Ho Chi Minh City by introduction of photovoltaic power generation system on the roofs of car parking area and bicycle parking space for 100% self-consumption and enables reduction of power consumption purchased from EPS and CO <sub>2</sub> emissions.
VN_ PM011	Viet Nam	Energy demand	Installation of Container Formation Facility at Acid Lead Battery Factory	This project introduces container formation method to some production lines, and about 60% of CO <sub>2</sub> from fossil fuel combustion is reduced by integrating formation and charging processes, which consume much of energy in the 11-step battery production, and eliminating a drying process and LPG usage.



## Programmes by Government of Japan

- ◆ JCM Demonstration Projects and JCM Financing Programme
- ◆ Feasibility Studies
- ◆ Capacity Building

# JCM Promotion Scheme by METI

## JCM Demonstration Projects (Budget for FY2016: 2.4 billion yen)

- 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.
- 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.

## MRV Application Study

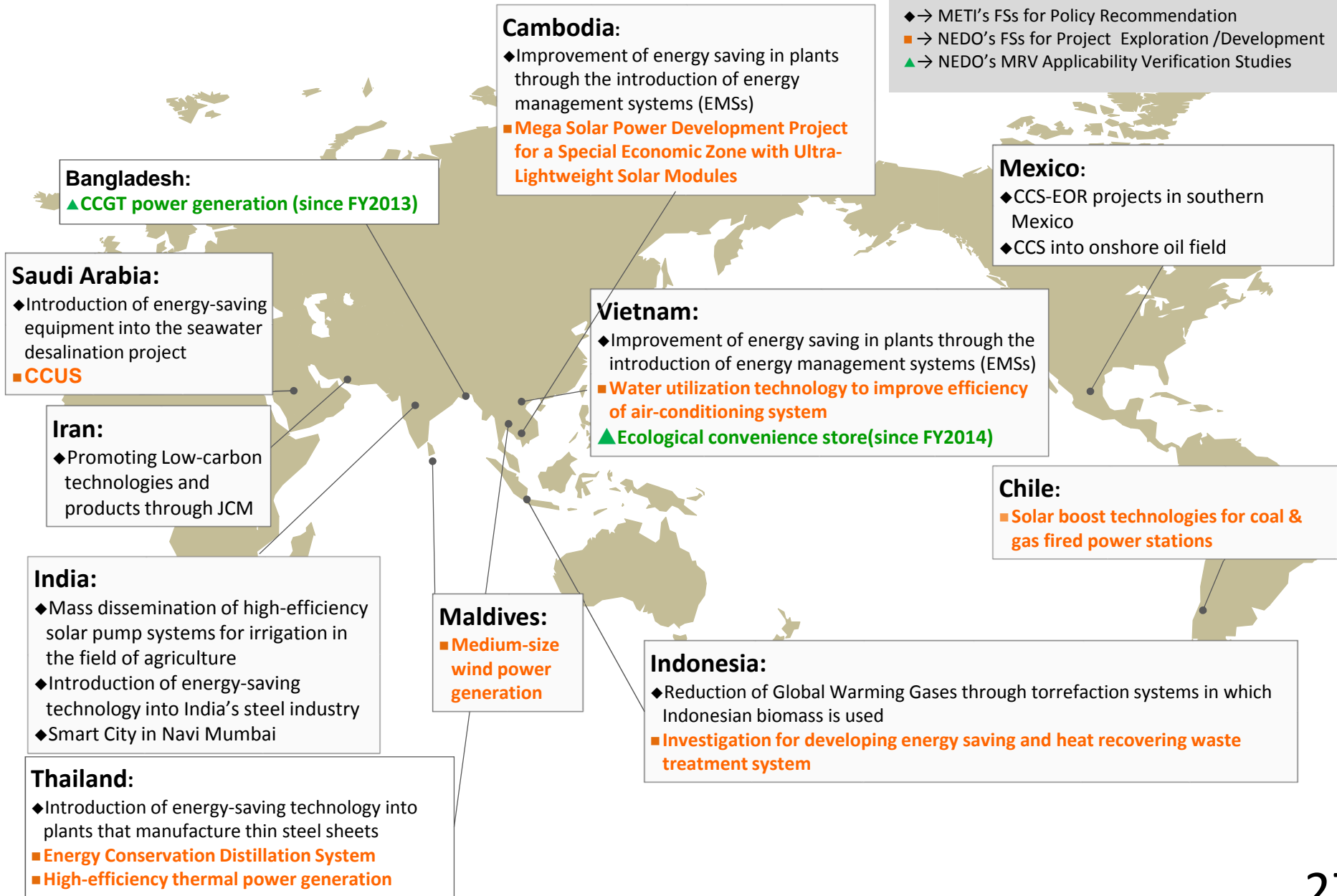
- By applying MRV methodology to the facility with low-carbon technologies that have already been installed or will certainly be installed in any JCM signatory country; 1) to obtain verification by third party entity under the JCM; and 2) to conduct review and feedback on efficiency and applicability of MRV.

## 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.

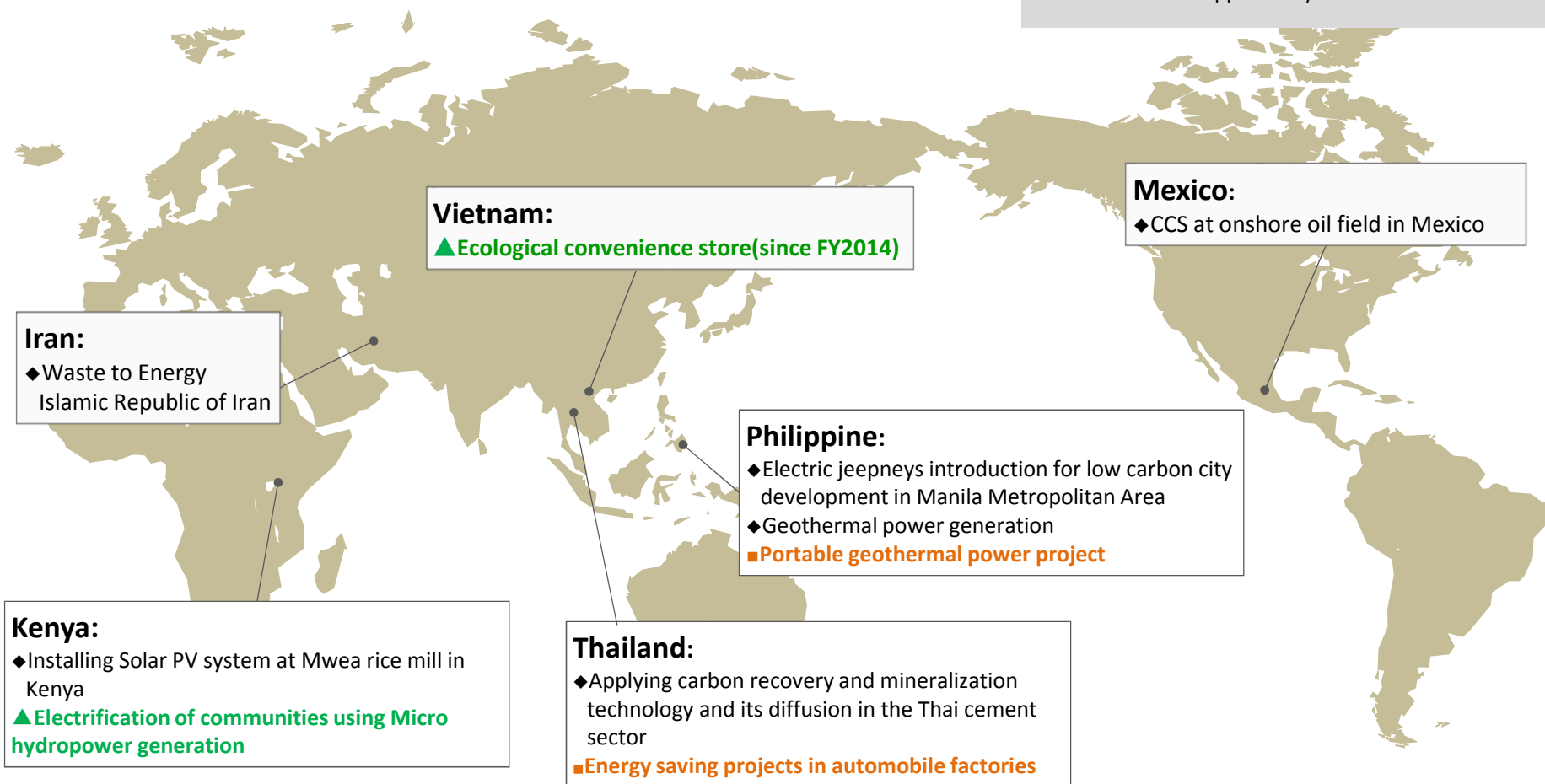
# JCM Feasibility Studies, MRV Applicability and Verification Studies by METI & NEDO in FY2015

◆ → METI's FSs for Policy Recommendation  
 ■ → NEDO's FSs for Project Exploration /Development  
 ▲ → NEDO's MRV Applicability Verification Studies



# JCM Feasibility Studies, MRV Applicability and Verification Studies by METI & NEDO in FY2016

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



## JCM Demonstration Projects by NEDO in FY2016

### Mongolia:

- **High efficiency and low loss power transmission and distribution system (Hitachi)**

※since FY2013

Reduction of transmission loss by introduction of LL-ACSR/SA (Low Electrical Power Loss Aluminum Conductors, Aluminum-Clad Steel Reinforced).

### Kenya, Ethiopia:

- **Rural Electrification Project for Communities by Micro Hydro Power in Ethiopia and Kenya (NTT Data Institute of Management consulting, Inc.)**

※since FY2012

Introduction of "micro hydro power systems" which can generate electricity at ultra low head in off grid community.

※implemented by UNIDO (covering Kenya and Ethiopia)

### Maldives:

- **Isolated area type wind power generation and ReMs demonstration project(KOMAI HALEC, TAKAOKA TOKO, TEPCO Power Grid)**

※since FY2016

The Renewable energy Management System (ReMs) combined with 300kW wind power generator is introduced in Naifaru and Himafushi.

### Vietnam:

- **Energy saving by inverter air conditioner optimum operation at National Hospital (Mitsubishi Electric)**

※since FY2013

Installing inverter room air conditioners (RACs) and Energy Management System (EMS) to optimize operation of multiple inverter RACs in national hospitals.

- **Energy saving by BEMS optimum operation at Hotel (Hibiya Engineering)**

※since FY2013

Integrating highly-proven energy saving technologies for hot water supply and lighting combined with energy management system to optimize these technologies.

- **Energy saving paper making process(Marubeni)**

※since FY2014

Introduction of high efficient and environment friendly machines to alter old papermaking process in paper production line.

- **Energy Saving and Work Efficiency Improvement Project by special LED Equipment with new technology, COB(Stanley Electric)**

※since FY2015

Introducing the special LED lighting equipment with new technology, COB module as a source of light into the fishing vessels currently equipped with the metal halide light and incandescent lamps.

### Lao PDR:

- **Lao PDR Energy efficient data center(LEED) (Toyota Tsusho Corporation, Internet Initiative Japan)**

※since 2014

Utilizing high energy efficient container-type data centers, related technologies will be demonstrated under Lao PDR environment, such as unstable power supply, hot and humid atmosphere etc.

### Indonesia:

- **Energy saving by optimum operation at Oil factory (Yokogawa Electric)**

※since FY2013

Multivariable model predictive control (MMPC), a kind of advanced optimization control at oil refinery plants, is added on existing DCS (Distributed Control System) and realizes the automatic operation control for the optimum production.

- **Utility facility operation optimization technology into Oil factory (Yokogawa)**

※since FY2013

The project achieves energy conservation in boilers, through operation optimization by applying Utility Facility Operation Optimization Technology.

- **The low carbonization of mobile communication's BTS (Base Transceiver Station) by the Introduction of "TRIBRID system" (KDDI)**

※since FY2015

Energy management system for BTS "TRIBRID system" will be installed at 22 locations in Off-grid and Poor-grid area.

Total: 12 projects (7 countries)  
Underlined Project in Vietnam is registered as a JCM project.

# JCM Project Development & Outreach Programme by MOEJ

## JCM Project development

- To **identify barriers and needs** for JCM project development in partner countries in terms of technology, financing and partnership, and **provide solutions for overcoming barriers** through consultations and matching between companies.
- To **enhance overall capacity for JCM project implementation** through facilitating understanding on the JCM rules & guidelines, and MRV methodologies by workshops, seminars, training courses and site visits.
- To **conduct feasibility studies** on specific projects for elaborating investment plan with considering expected emission reductions. To see reports, access: <<http://gec.jp>>



### Types of Feasibility Studies (FS)

- FS on JCM Project by City to City Collaboration
- FS on JCM large-scale CO2 reduction project



## Outreach

- **New Mechanisms Information Platform website** provides information on the latest updates on the JCM and on the relevant programme such as JCM promotion schemes by the Government of Japan. <<http://www.mmechanisms.org/e/index.html>>
- **Mail magazine** and up-to-date information are distributed regularly. To register, access:  
(for JP) <<http://www.mmechanisms.org/newsletter/index.html>>  
(for EN) <<http://www.mmechanisms.org/e/newsletter/index.html>>



## JCM Model Projects by MOE

The budget for projects starting from FY 2017 is **6.0 billion JPY (approx. USD 60million)** in total by FY2019

(1 USD = 100 JPY)

Finance part of an investment cost (**less than half**)

**Government of Japan**

✕ Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

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<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.

# ADB Trust Fund: Japan Fund for Joint Crediting Mechanism (JFJCM)

## Budget for FY2017

JPY 1 billion (approx. USD 10 million) ※JPY 1.2 billion in 2016, and 1.8 billion in 2015 and 2014 respectively

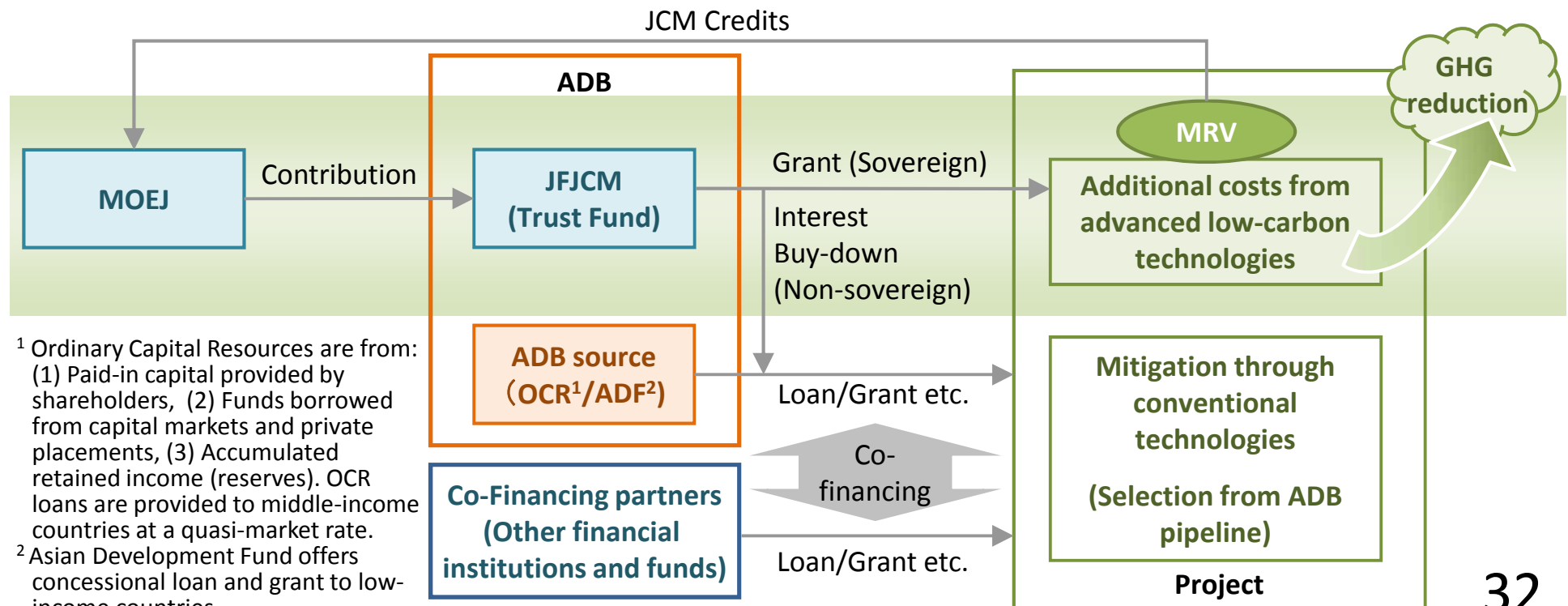
(1 USD = 100 JPY)

## Scheme

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

## Purpose

To develop ADB projects with sustainable and low-carbon transition perspective by introducing advanced low-carbon technologies as well as to acquire JCM credits



<sup>1</sup> Ordinary Capital Resources are from: (1) Paid-in capital provided by shareholders, (2) Funds borrowed from capital markets and private placements, (3) Accumulated retained income (reserves). OCR loans are provided to middle-income countries at a quasi-market rate.

<sup>2</sup> Asian Development Fund offers concessional loan and grant to low-income countries.



# JCM REDD+ Model Projects by MOE

(1 USD = 100 JPY)



## 【Background】

- Deforestation and forest degradation in developing countries
- 17 demonstration feasibility studies from 2011 to 2014

## 【Expected outcome】

- Participatory monitoring of illegal logging, disaster prevention, and forest restoration
- Provision of alternative livelihoods



## 《 Projects outline 》

【Budget for FY 2017】80 million JPY (approx. USD 0.8 million)

**Government of Japan**

Finance part of the cost

**International consortiums (which include Japanese entities)**

Deliver JCM credits issued\*

\*At least half or ratio of financial support to project cost of JCM credits issued are expected to be delivered to the government of Japan except the amount which is allocated to the partner country based on its legislation.

※These projects may be implemented in cooperation with other organizations such as JICA

※REDD+ (Reducing Emissions from Deforestation and Forest Degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries )

### Purpose

Implement activities for REDD+ and use them for contributing to achieve Japan's emission reduction target through the JCM.

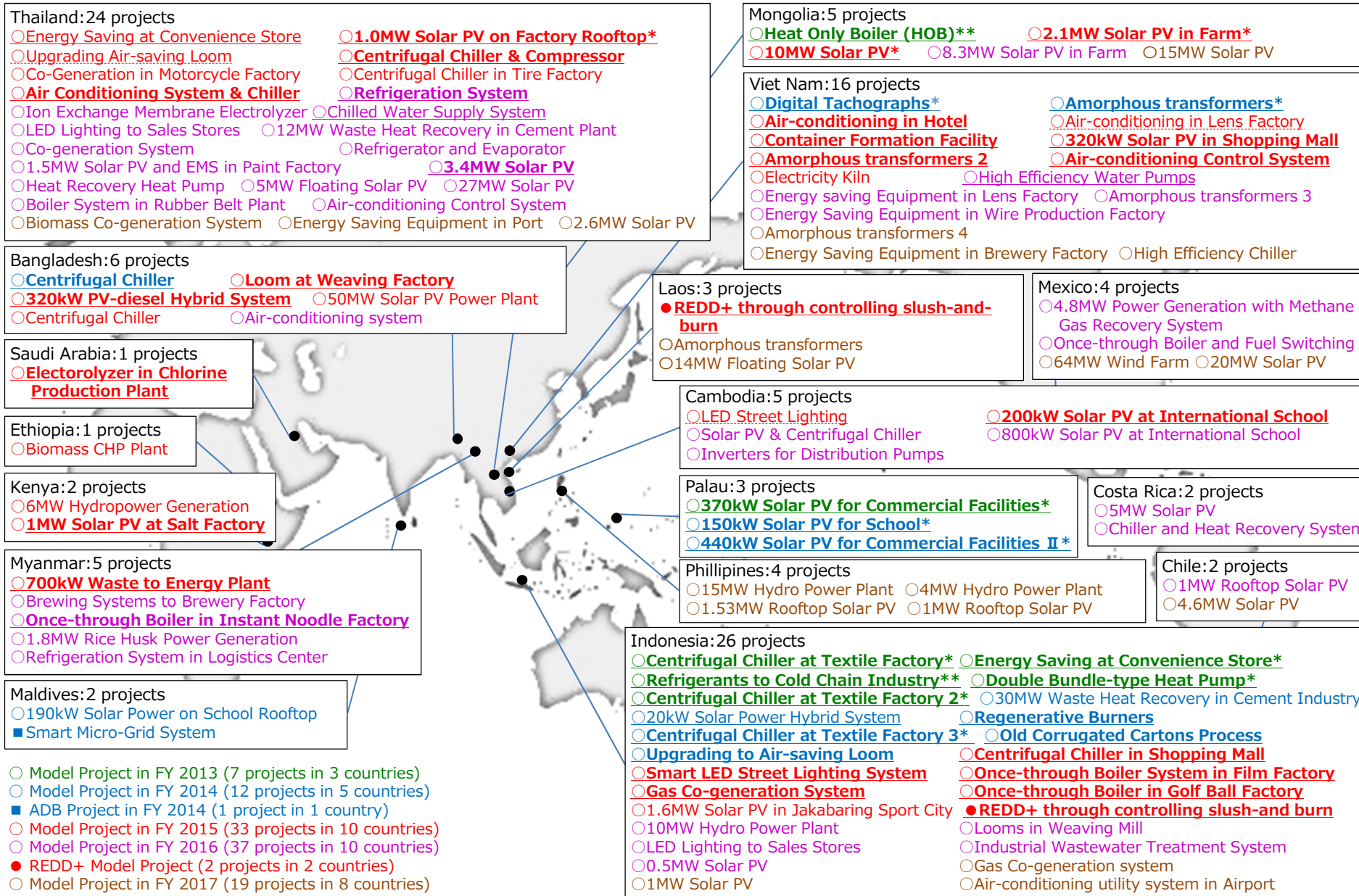
### Project budget and implementation term

Up to 80 million JPY/year (fixed)

### Eligible Companies

Japanese corporation(the representative of international consortiums)

# JCM Financing programme by MOEJ (FY2013~2017) as of November 6, 2017



- Model Project in FY 2013 (7 projects in 3 countries)
- Model Project in FY 2014 (12 projects in 5 countries)
- ADB Project in FY 2014 (1 project in 1 country)
- Model Project in FY 2015 (33 projects in 10 countries)
- Model Project in FY 2016 (37 projects in 10 countries)
- REDD+ Model Project (2 projects in 2 countries)
- Model Project in FY 2017 (19 projects in 8 countries)
- \* Other 1 project in Malaysia

**Total 111 projects in 17 partner countries**

Underlined projects have started operation (49 projects, including 3 partially started projects)  
 Projects with \* have been registered as JCM projects (17 projects)

# JCM Planning/Feasibility Studies in FY2015 by MOEJ

- ◆-- JCM Project Planning Study (PS)
- ◆-- JCM Feasibility Study (FS)

## Myanmar:

- ◆ Rice husk power generation in rice mill factory in Ayeyarwady

## Bangladesh:

- ◆ Energy saving by utilizing lithium-ion batteries at base transceiver stations in unstable-grid areas

## Thailand:

- ◆ Energy saving by introducing regenerative energy storage system in Skytrain
- ◆ Saving Energy for station facilities utilizing regenerative energy from trains
- ◆ Energy saving by co-generation project in the fiber factory

## Mongolia:

- ◆ Distributed heat supply system using biomass and coal mixture combustion type boiler

## Lao PDR:

- ◆ Utilization of agricultural biomass in Cement Kiln
- ◆ Biogas recovery and utilization in tapioca starch factory

## Viet Nam:

- ◆ Recovery and utilization of biogas from agricultural processing waste in Ninh Binh Province
- ◆ Waste Heat Recovery Power Generation at Cement Factory in Quang Ninh Province

## Philippines:

- ◆ Talubin Mini-Hydropower Project

## Cambodia:

- ◆ Installation of high-efficiency chillers in large-scale hotels

## Indonesia:

- ◆ Energy saving in industrial wastewater treatment for rubber industry
- ◆ Hybrid Power Generation Project Using Biogas and Solar Power
- ◆ Development of District Energy Supply Business by introducing co-generation
- ◆ Introduction of co-generation and solar power generation systems in large shopping malls

## Costa Rica:

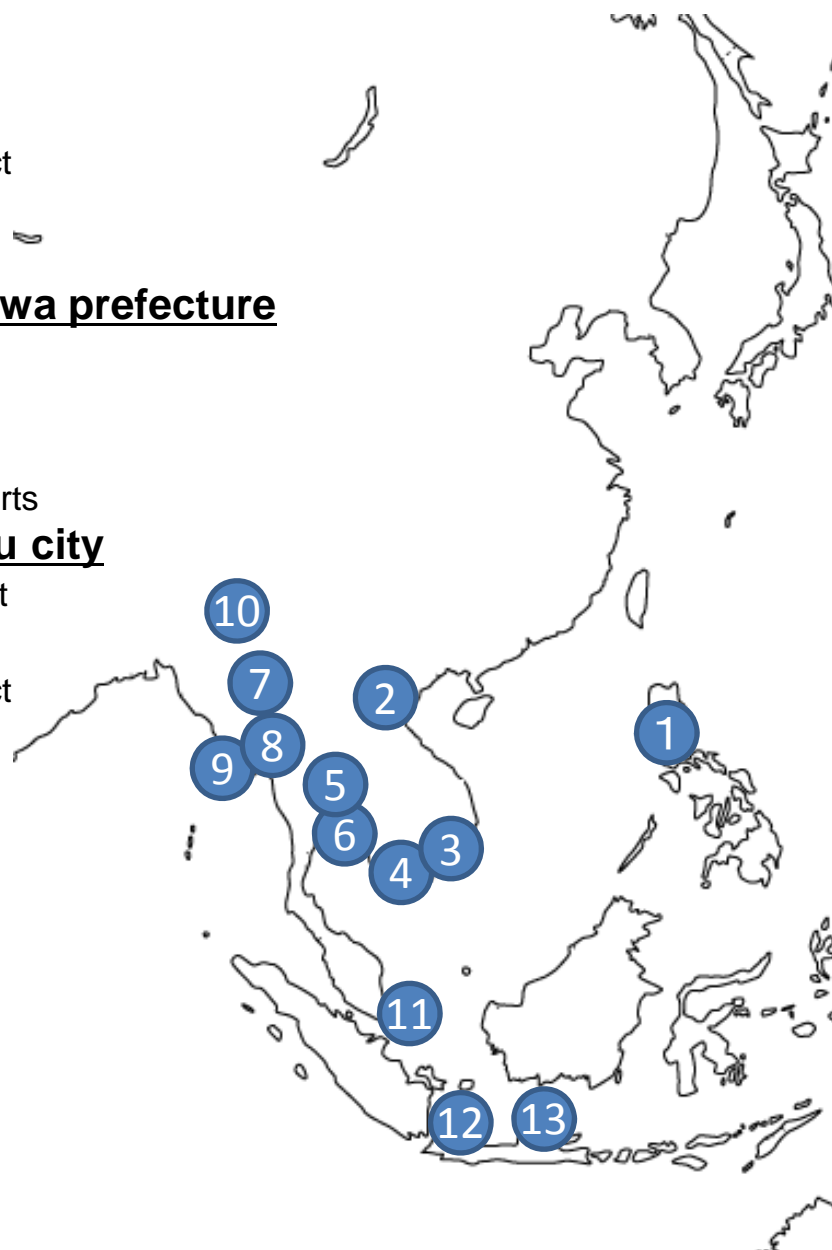
- ◆ Low-carbon project by introducing PV and energy saving equipment in Hotel, Office Building and others

## Chile:

- ◆ Geothermal Power Generation in the south of Santiago

## FY2017 City to city collaboration program by MOEJ

1. **Quezon City (Philippines) – Osaka city**
  - PV solar project and energy saving project
2. **Haiphong city(Vietnam) – Kitakyushu city**
  - Waste to energy project and exhaust heat recovery project
3. **Ho Chi Minh city(Vietnam) – Osaka city**
  - Energy saving project
4. **Phnom Penh city – Kitakyushu city / Kanagawa prefecture**
  - Renewable energy project , energy saving project and waste to energy project
5. **Bangkok city- Yokohama city**
  - Renewable energy project and energy saving project in ports
6. **Chiangmai prefecture(Thailand) – Kitakyushu city**
  - Waste to energy project and exhaust heat recovery project
7. **Mandalay city(Myanmar) – Kitakyushu city**
  - Waste to energy project and exhaust heat recovery project
8. **Yangon city (Myanmar) – Kawasaki city**
  - Waste to energy project and energy saving project
9. **Ayeyarwady region – Fukushima city**
  - Energy saving project in waste water treatment facility
10. **Sagaing region – Fukushima city**
  - Waste to energy project by rice husk
11. **Batam city – Yokohama city**
  - Energy saving project
12. **Jakarta city – Kawasaki city**
  - Energy saving project
13. **Smarang city – Toyama city**
  - Renewable energy project and energy saving project in transportation



Reference:  
Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

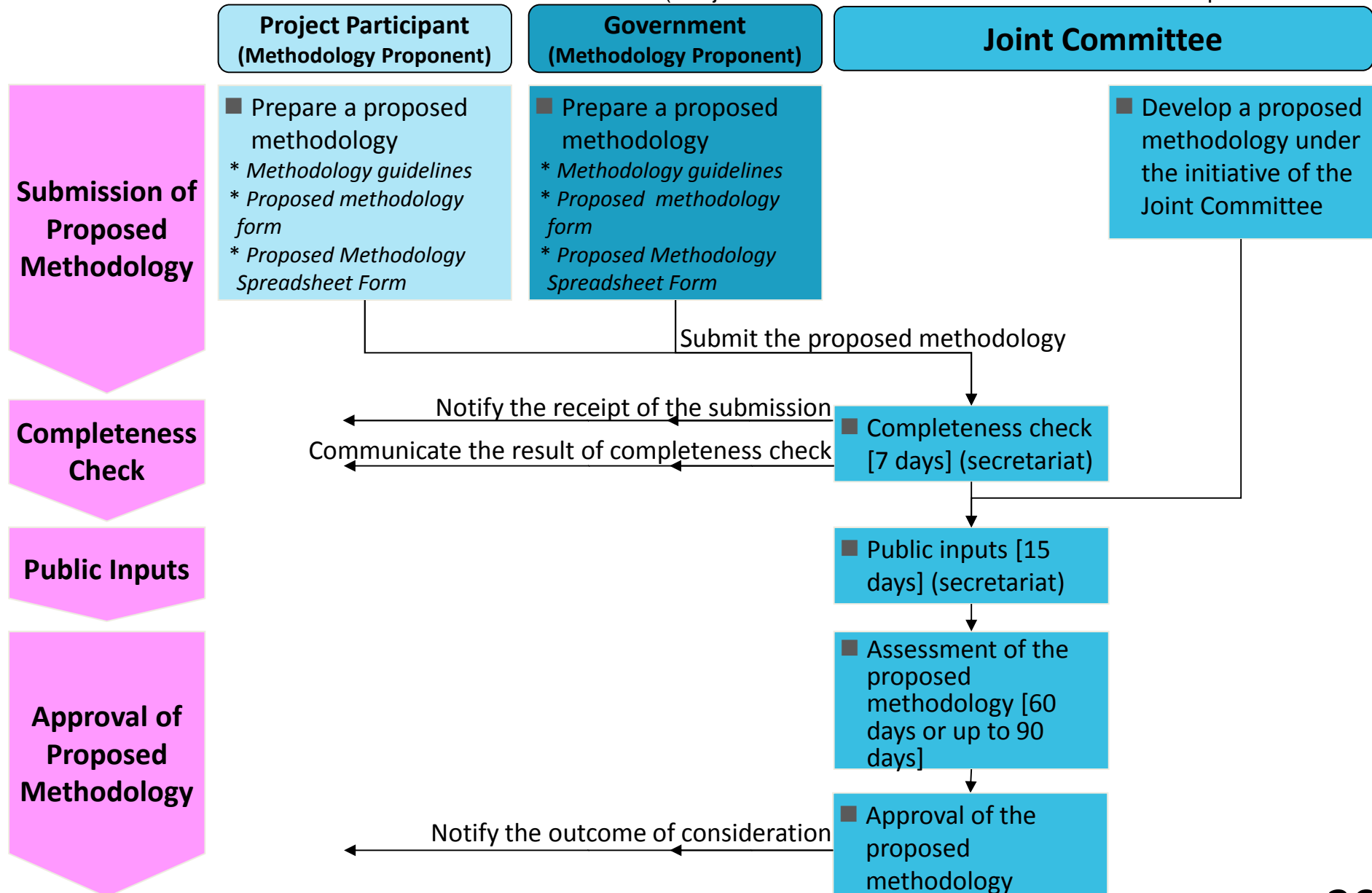
# Necessary documents for the JCM

(Subject to further consideration and discussion with partner 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 partner 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 partner 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)

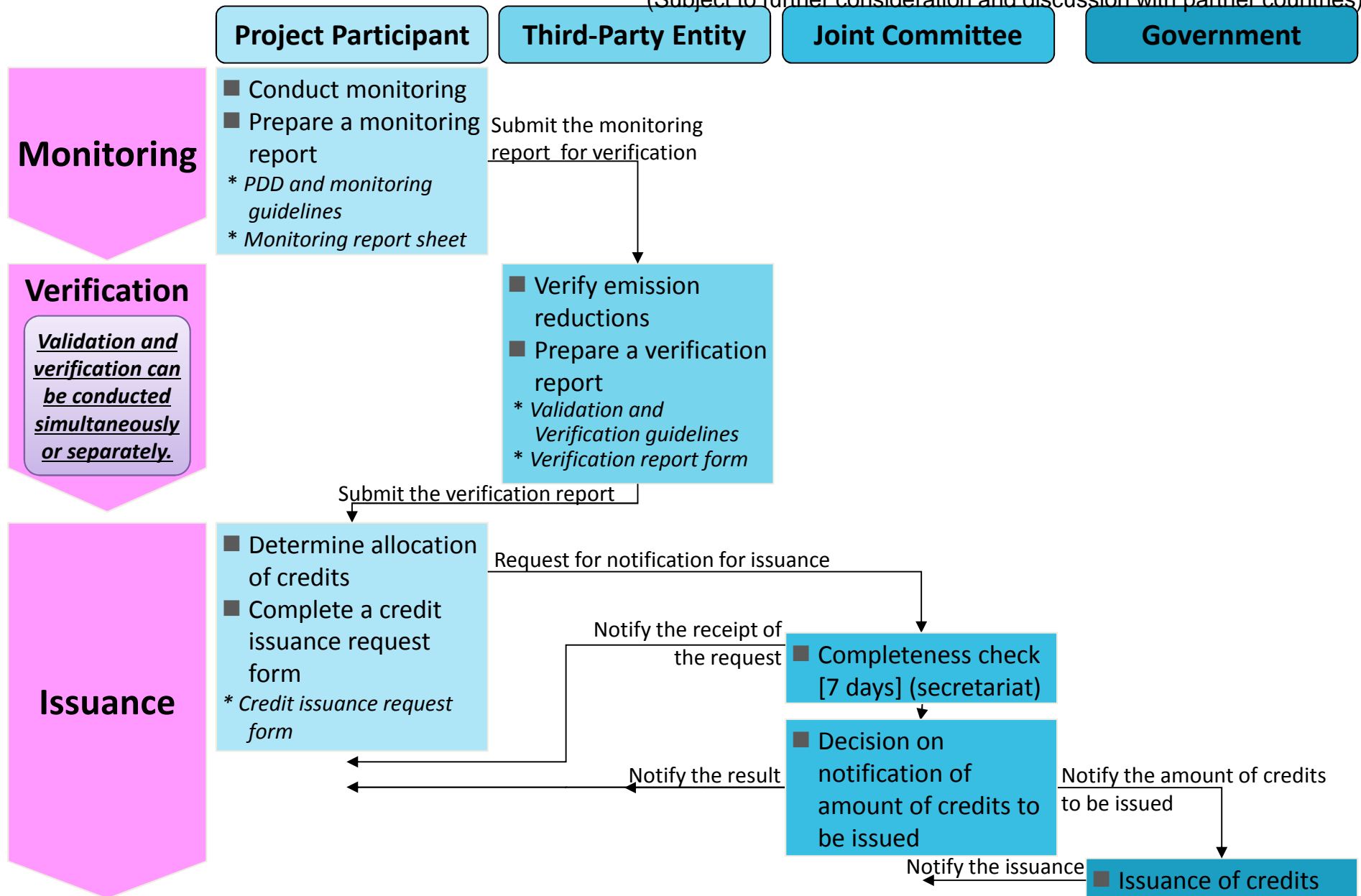
- Registration

Notify the registration



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

(Subject to further consideration and discussion with partner countries)



# Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with partner 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 partner 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 [10] 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.

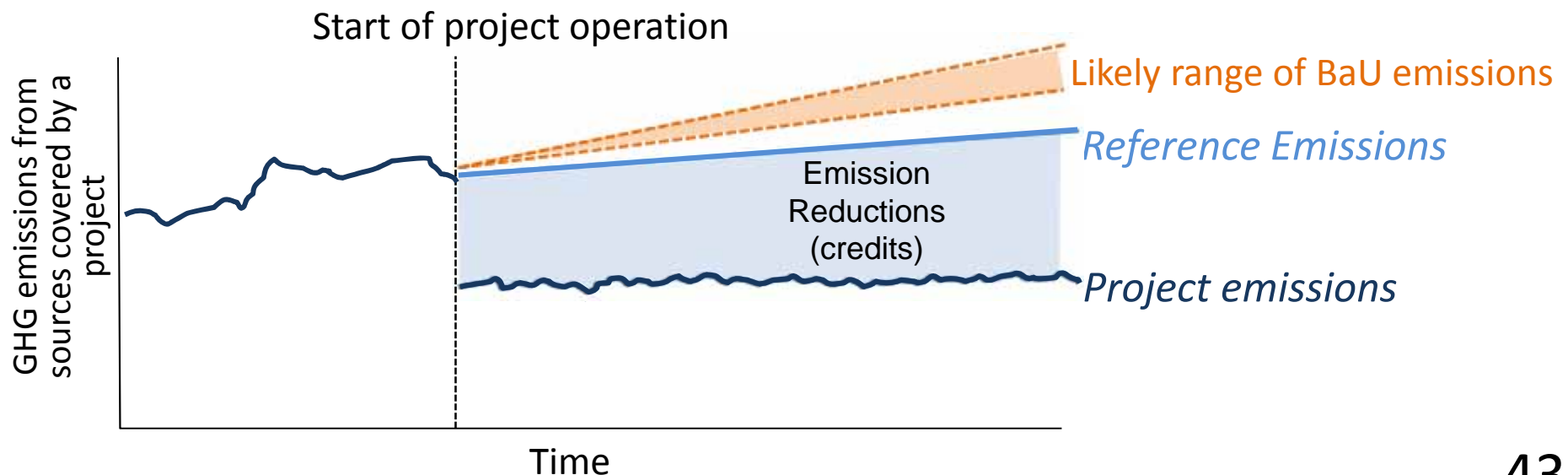
**Confidentiality:** Members of the JC, Secretariat, etc. respect confidentiality.

**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 partner countries)

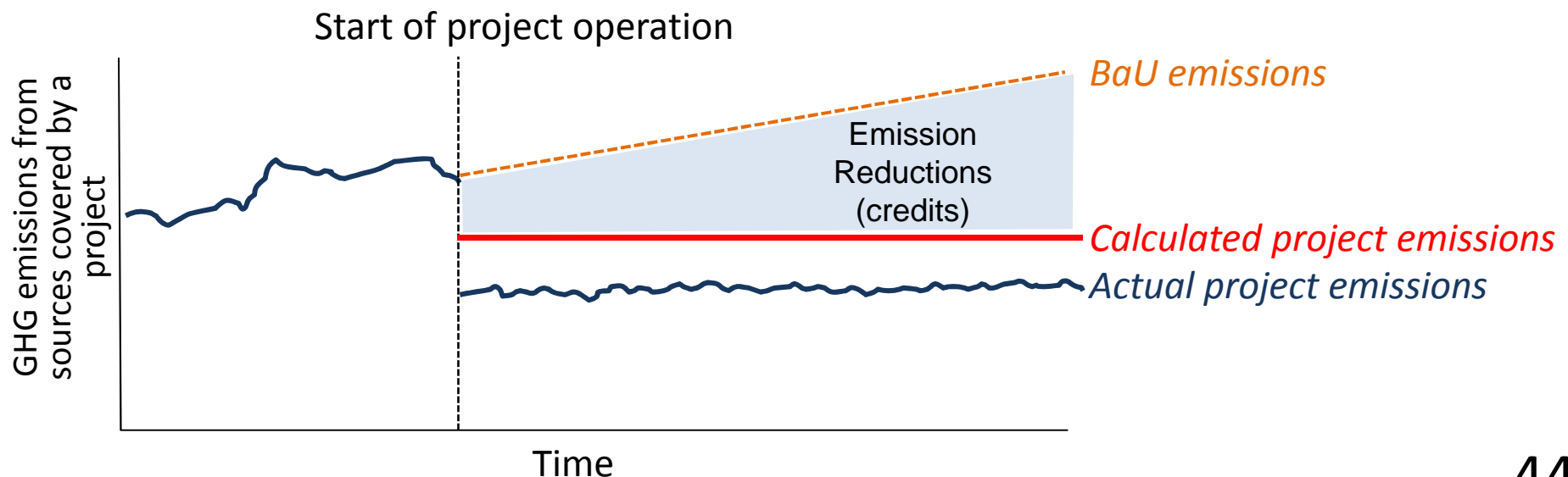
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the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



## Addendum: ways to realize net reduction

(Subject to further consideration and discussion with partner 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 allow project participants to determine 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 allow GHG emission reductions/removals to be calculated 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 partner countries)

Eligibility criteria in JCM methodologies contain the following:

- ✓ The requirements for the project to be registered as a JCM project. <Basis for the assessment of validation and registration of a proposed project>
- ✓ The requirements for the project to be able to apply the JCM methodology. <same as “applicability condition of the methodology” under the CDM>



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.

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 partner 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 period	Monitoring point No.	Parameters	Description of data	Monitoring units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
(1)	PHC	Project production volume at the JRP during the period of year y	20,000 t/y	tonnes	Option C	Commercial data	Collecting electricity consumption data with certified calibrated weighing scales and mounting it to an approved meter automatically. Verification and calculation shall meet international standards on corresponding monitoring devices. Project input managers should check the input data with frequency every 6 months.	once a month	
(2)	PHC	Project fossil fuel consumption at the JRP	500 t/y	tonnes	Option B	Commercial records	Collecting the purchase amount from retailer purchase and mounting it to an approved meter automatically. Verification and calculation shall meet international standards on corresponding monitoring devices. Project input managers should check the input data with frequency every 6 months.	once a month	
(3)	PHC	Project electricity consumption at the JRP	500 MWh/y	MWh	Option C	Commercial data	Collecting electricity consumption data with self-calibrated electricity monitoring devices and mounting it to an approved meter automatically. Verification and calculation shall meet international standards on corresponding monitoring devices.	continuous	

Responsible personnel	Role
Project Manager	Responsible for project planning, implementation, monitoring results and reporting. Appointed to be in charge of approving the
Project	
Facility	
Operat	
N/A	
N/A	
N/A	

Monitoring Report Sheet

Monitoring Structure Sheet

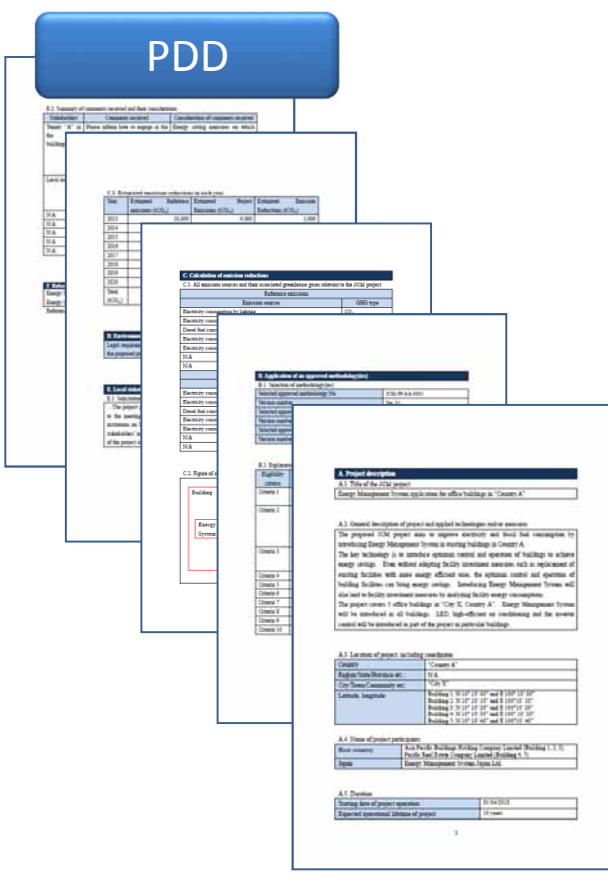
Monitoring Plan Sheet

Cells for data & information input

# PDD and Monitoring Plan

(Subject to further consideration and discussion with partner 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

Monitoring Structure Sheet	
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.
Operators	Appointed to be in charge of monitoring structure (data collection and storage), including
N/A	
N/A	
N/A	

Monitoring Plan

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>v</sub>	Project production volume at the HPIIP during the prod of year	20,000	y	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	
(2)	PFC <sub>v</sub>	Project fossil fuel consumption by the HPIIP	500	y	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	
(3)	PEC <sub>v</sub>	Project electricity consumption by the HPIIP	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	

Other necessary information on parameters to be monitored are:
 

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

Roles and responsibilities of personnel for monitoring should be described

Cells for data input (ex ante)



## Possible Contents of the JCM PDD

### **A. Project description**

(Subject to further consideration and discussion with partner 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.

# Monitoring Report

(Subject to further consideration and discussion with partner 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)**

Monitoring Report

2	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Monitoring period	Monitoring point No.	Parameters	Description of data	Monitored Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
3	2013-2014	1)	PO <sub>y</sub>	Project production volume at the HPIF <sup>*</sup> 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 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	
4	2013-2014	2)	PFC <sub>y</sub>	Project fossil fuel consumption by the HPIF	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 HPIF	500	#/Wh/y	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting 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	
6	* HPIF refers to High-Performance Industrial Furnace.										
7											
8											
9	2. CO2 emission reductions										
10	CO2 emission reductions      Units										
11	22,851      tCO2/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 metering instruments (Data used: commercial evidence such as invoices)									
17	Option C	Based on the actual measurement using metering instruments (Data used: metering instruments)									
18											

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

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