

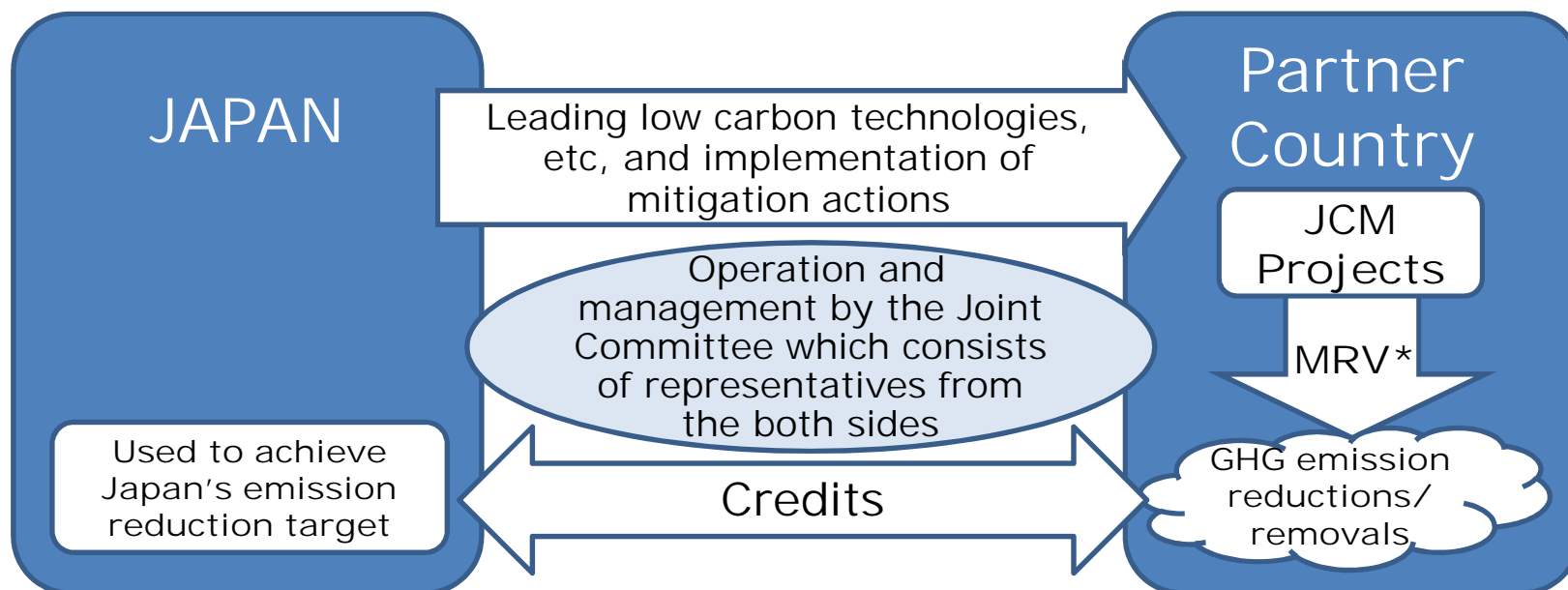
Recent Development of The Joint Crediting Mechanism (JCM)

February 2016
Government of Japan

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

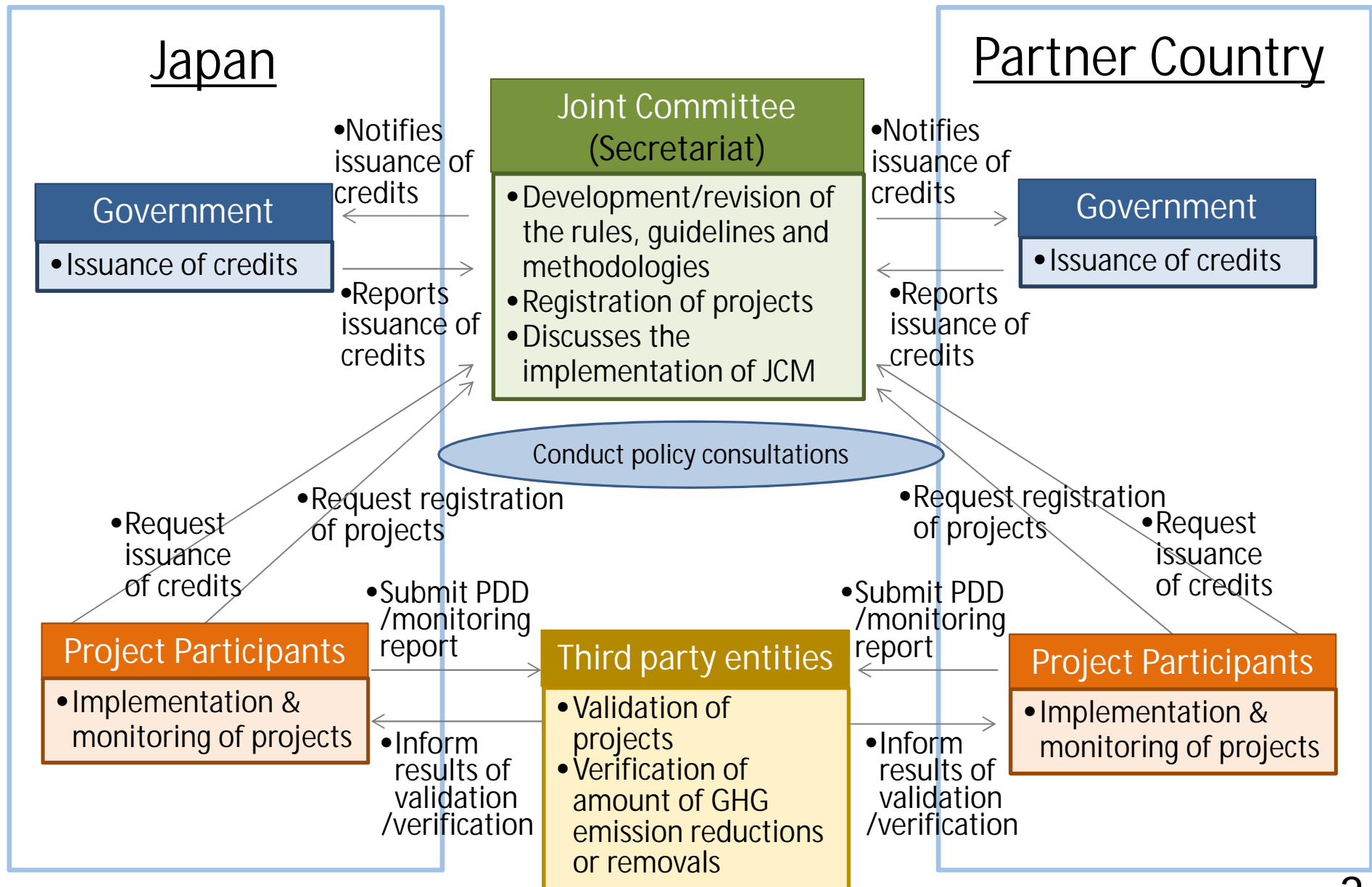
Basic Concept of the JCM

- 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



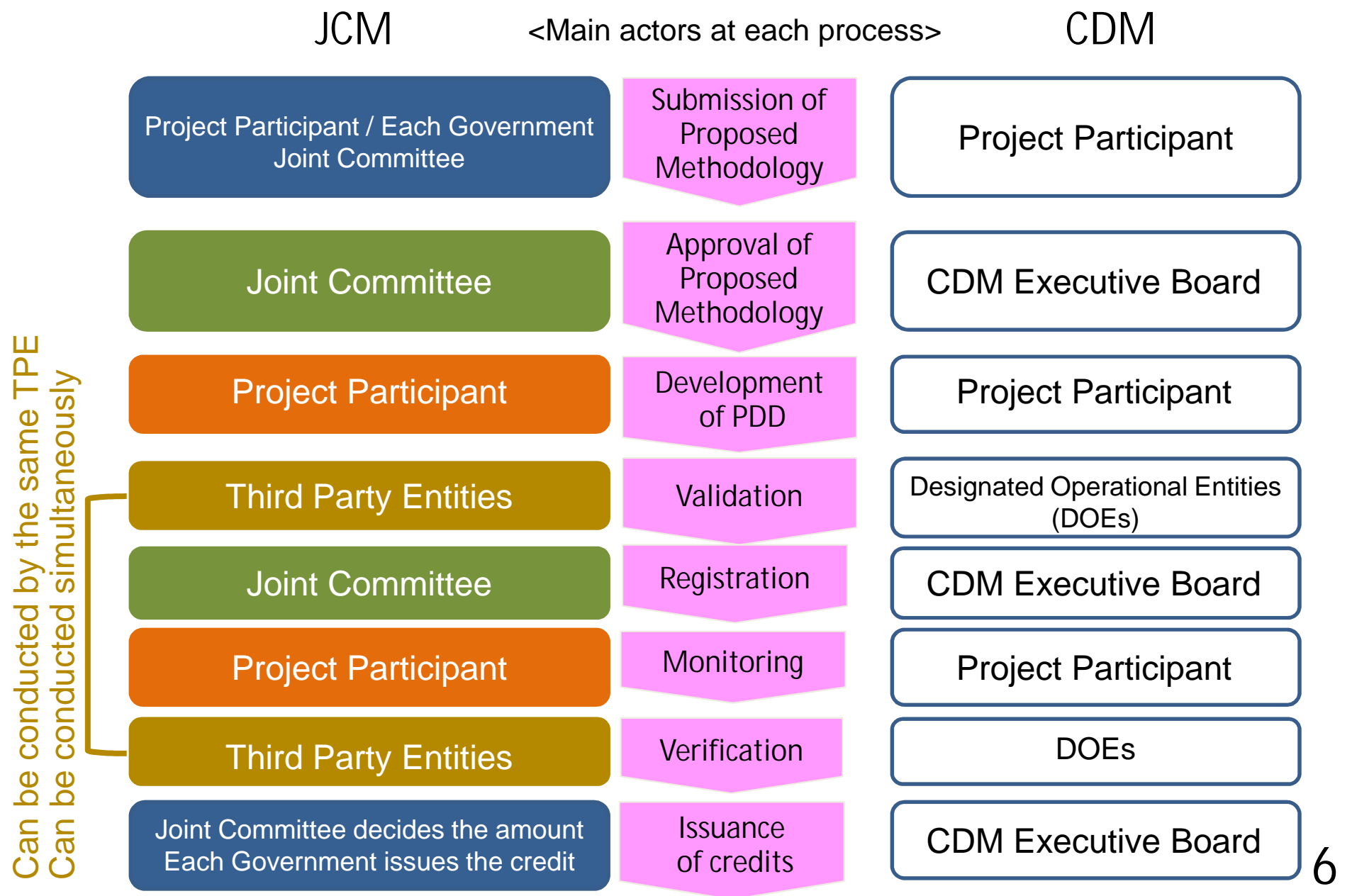
The role of the Joint Committee and each Government

- 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

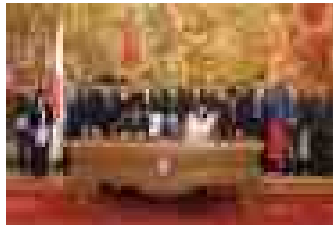
- (1) The JCM starts its operation as a non-tradable credit type mechanism.
- (2) Both Governments continue consultation for the transition to a tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.
- (3) The JCM aims for concrete contributions to assisting adaptation efforts of developing countries after the JCM is converted to the tradable credit type mechanism.
- (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 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 and Thailand.



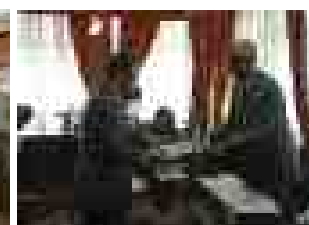
Mongolia
Jan. 8, 2013
(Ulaanbaatar)



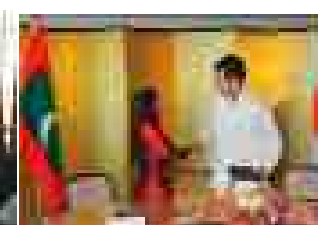
Bangladesh
Mar. 19, 2013
(Dhaka)



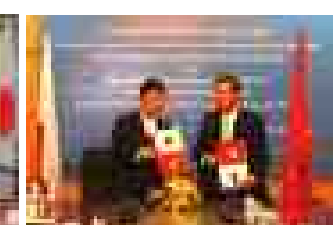
Ethiopia
May 27, 2013
(Addis Ababa)



Kenya
Jun. 12, 2013
(Nairobi)



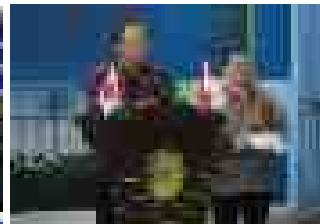
Maldives
Jun. 29, 2013
(Okinawa)



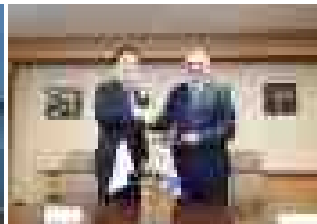
Viet Nam
Jul. 2, 2013
(Hanoi)



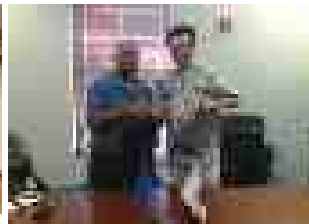
Lao PDR
Aug. 7, 2013
(Vientiane)



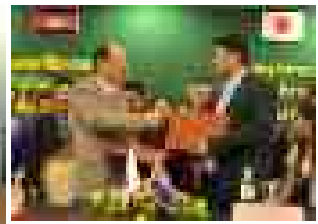
Indonesia
Aug. 26, 2013
(Jakarta)



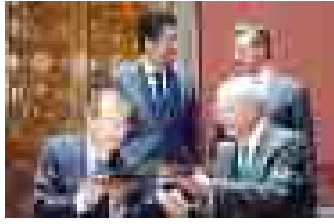
Costa Rica
Dec. 9, 2013
(Tokyo)



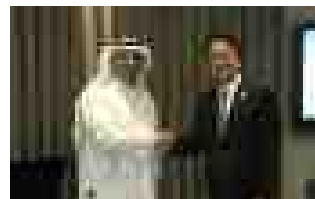
Palau
Jan. 13, 2014
(Ngerulmud)



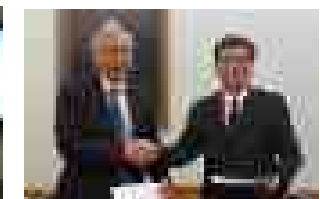
Cambodia
Apr. 11, 2014
(Phnom Penh)



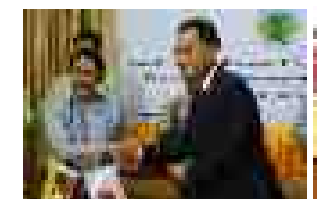
Mexico
Jul. 25, 2014
(Mexico City)



Saudi Arabia
May 13, 2015



Chile
May 26, 2015
(Santiago)



Myanmar
Sep. 16, 2015
(Nay Pyi Taw)



Thailand
Nov. 19, 2015
(Tokyo)

- In addition, the Philippines and Japan signed an aide memoire with intent to establish the JCM.

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 CO₂-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-CO₂eq. 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-CO₂eq.

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

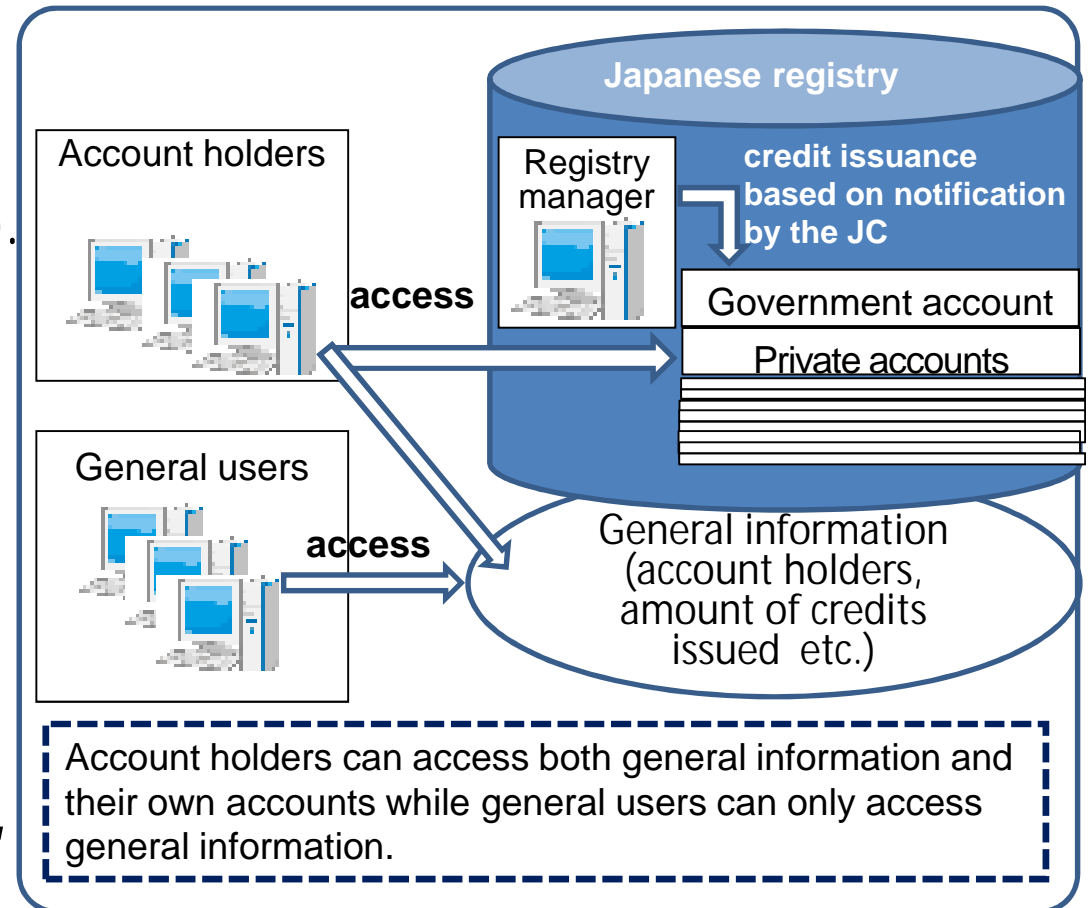
Annex I Parties (Annex I)										Other Parties (Annex II)			
Annex I Parties		Annex I Parties		Annex I Parties		Annex I Parties		Annex I Parties		Annex II Parties		Annex II Parties	
2005-7	2008-10	2011-13	2014-16	2017-19	2020-22	2023-25	2026-28	2029-31	2032-34	2035-37	2038-40	2041-43	2044-46
Quantity of units													
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 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



Image of the general information page



Image of the individual JCM Partner countries-Japan page

Registered Projects

No.	Country	Project Title	General description of project
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.
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.
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.
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

Approved Methodologies (1/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
MN AMO 01	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 AMO 02	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.
MV AMO 01	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 AMO 01	Viet Nam	Transport	Transportation energy efficiency activities by installing digital tachograph systems	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 AMO 02	Viet Nam	Energy demand	Introduction of Room Air Conditioners Equipped with Inverters	Energy saving achieved by introduction of RACs equipped with inverters.
VN AMO 03	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 AMO 04	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 AMO 05	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

Approved Methodologies (2/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
ID_A M001	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_A M002	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_A M003	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_A M004	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_A M005	Indonesia	Energy demand	Installation of LED Lighting for Grocery Store	Saving energy by introducing LED (Light Emitting Diode) lighting for grocery store.
ID_A M006	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_A M007	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_A M008	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.

Approved Methodologies (3/3)

No.	Country	Sectoral Scope	Methodology Title	GHG Emission Reduction Measures
ID_A M009	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.
ID_A M010	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.
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).

Programs by Government of Japan

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

JCM Promotion Scheme by METI

JCM Demonstration Projects (Draft 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 REDD+ FS by METI

REDD+ FS outline

Purpose

For the purpose of preventing deforestation and forest degradation, which have caused significant emissions of CO₂ in many developing countries, plus additional measures (collectively known as REDD+), this FS intends to examine the feasibility of concrete cooperation in cases where Japanese enterprises are undertaking work in related business fields, applicable methods of measuring the amount of greenhouse gas emissions reduced and ideal approaches to making other environmental improvements, while also investigating the potential contributions of Japanese enterprises in the field of REDD+.

Project Description

Projects on REDD+ in developing countries. The details are as follows:

1. To grasp overall conditions of the trends and policies for climate change in the countries and regions that are targets of this project (especially REDD+)
2. To consider the possibility of specified cooperation for the project to be implemented after 2016, and the way of financial and other environmental arrangements necessary for realizing the implementation of the project.
3. To examine the applicable method for reducing GHG emissions and to calculate the expected amount of the reduction using that method when the project is implemented.
4. To examine the economic and other impacts that will be gained from the project.

Selected Projects in 2015

Partner Country: Vietnam

Operator: Kanematsu, Japan NUS

Description:

Thuy Son, a wood material manufacturer in Ca Mau, Vietnam, is planning expansion of its production area in natural forest including peatland. This project suggests protecting the natural forest and its biodiversity by limiting the expansion.

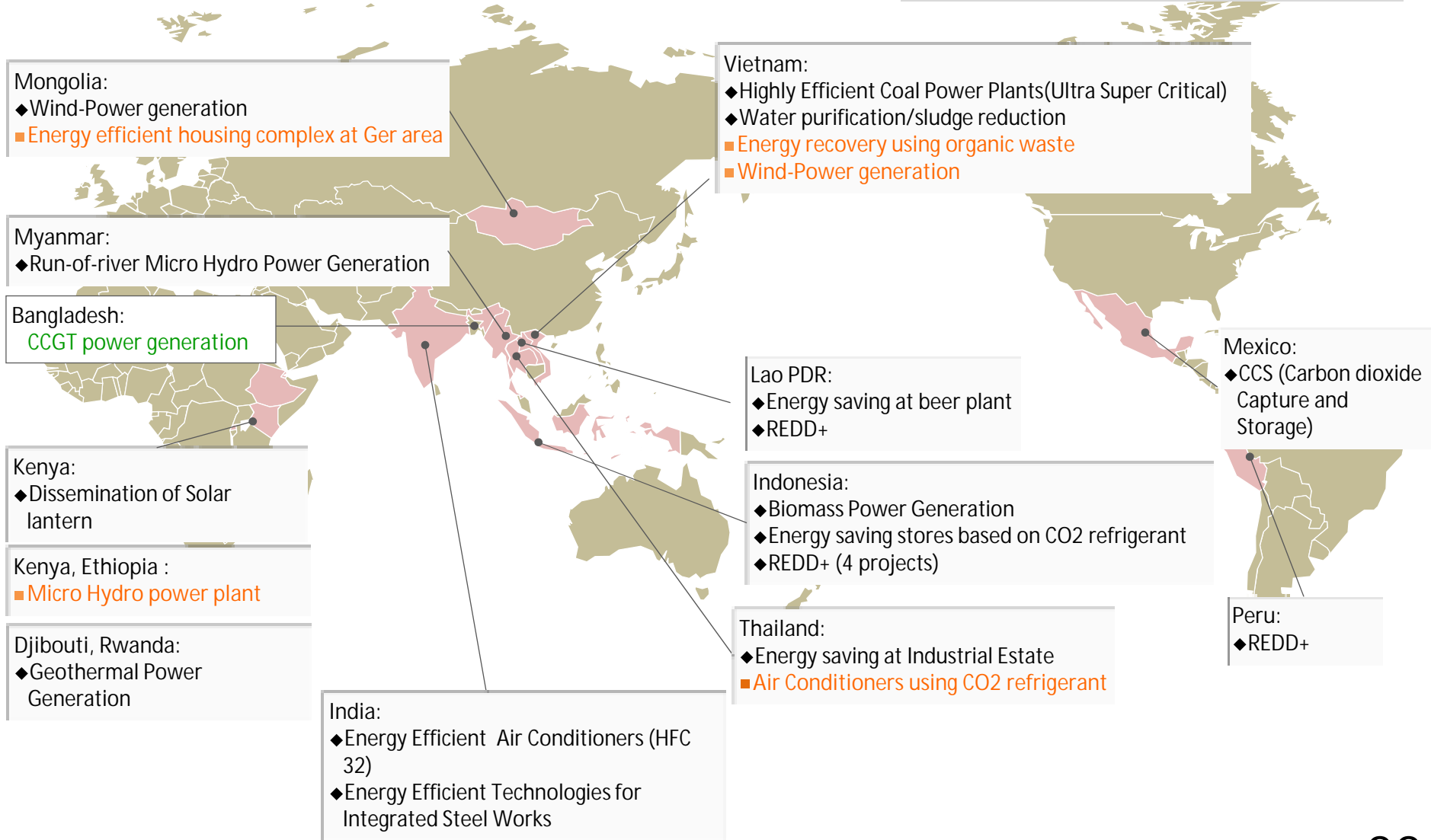
This may be achieved by improving production efficiency and introducing higher value products.

Moreover, pellet normally has higher value in the market and by adding pellet production and export to the current business, Thuy Son will provide job opportunity for the local community. This eventually reduces the risk of cultivation of peatland.



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

◆→ 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 FY2014

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

Mongolia:
 ■ FA utilization for Cement manufacture process

Cambodia:
 ◆ Energy efficiency LED street light
 ■ Hybrid(solar+diesel) power generation in SEZ(Special Economic Zone)

Myanmar:
 ■ Energy saving at supermarket

Bangladesh:
 CCGT power generation (since FY2013)

Lao PDR:
 ◆ Energy efficiency container data center

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

Vietnam:
 ◆ Energy efficiency technologies for steel industry
 ◆ Low carbon technology application for eco-city
 ◆ Energy efficiency operation for ships
 ■ Installing LED lighting into Fishing vessel
 ■ Energy efficient paper making process
 ■ Waste Transport Management System in Vietnam
 ■ Air Conditioner Energy Efficiency through Water Source Heat Pump Units
 Ecological convenience store

Mexico:
 ◆ Energy efficiency technology in commerce and industrial sector
 ■ Geothermal power plant for IPPs
 ■ Ion exchange membrane in caustic soda and chlorine production
 ■ Energy efficiency beverage and food factory

Kenya:
 ◆ Geothermal power generation

Costa Rica:
 ■ Mega Solar power generation

Ethiopia, Kenya:
 ◆ Mega-solar power generation and Hydro power generation
 ■ Rural electrification without power grid

Malaysia:
 ■ Woody biomass power generation

Chile:
 ◆ Energy efficiency power generation
 ■ Rooftop solar power generation

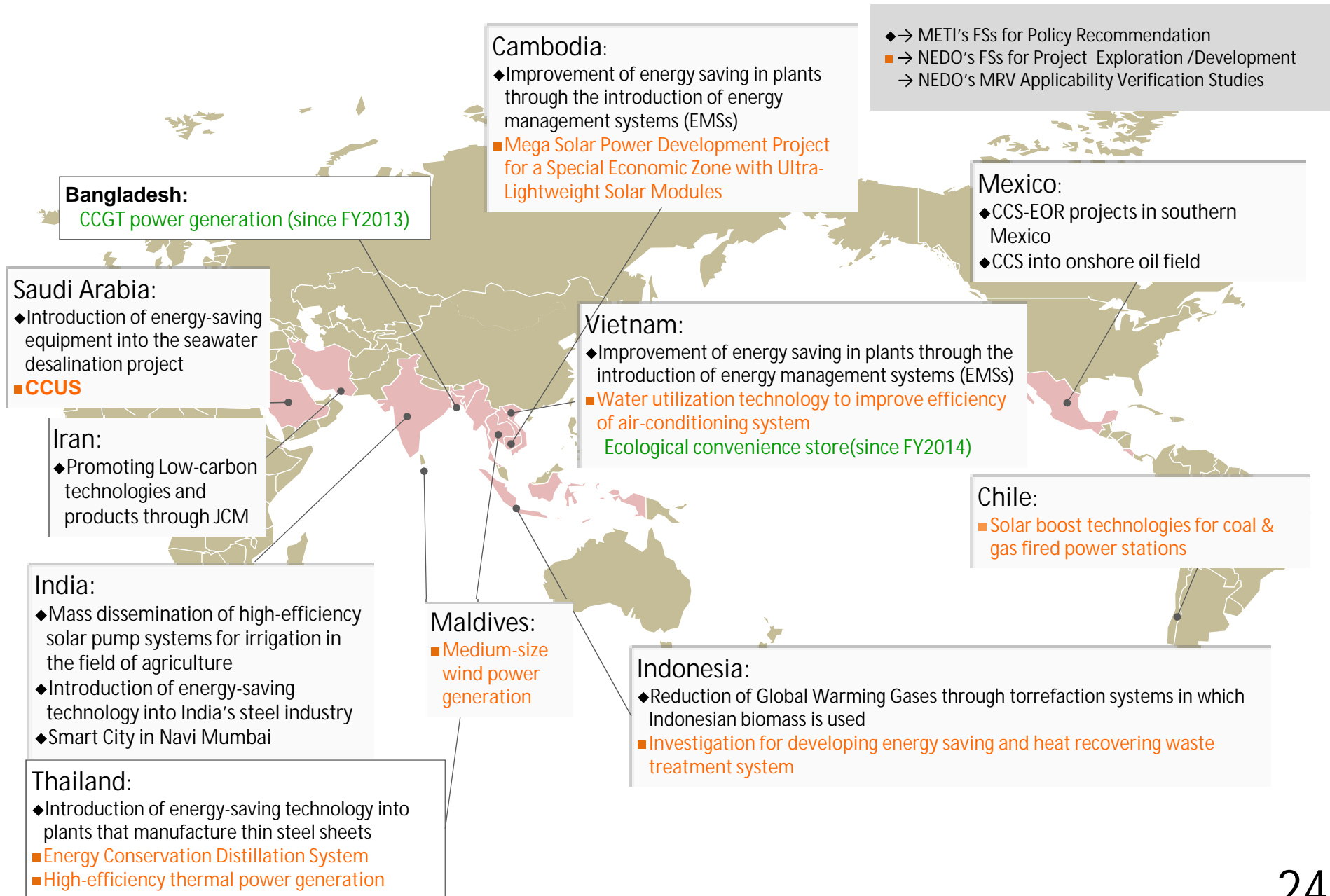
Ethiopia:
 ■ Bioethanol from molasses

Maldives:
 ◆ Medium-size wind power generation

Indonesia:
 ◆ Energy efficiency for mobile communication system
 ◆ Low carbon waste treatment
 ◆ LNG supply chain development and energy conversion
 ◆ REDD+ (6 projects)
 ■ Energy saving by operation at material factory
 ■ Energy efficiency at data center
 ■ CCS

Thailand:
 ◆ Energy efficiency technologies for steel industry
 ◆ Bio-coke
 ■ High efficiency small boiler

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

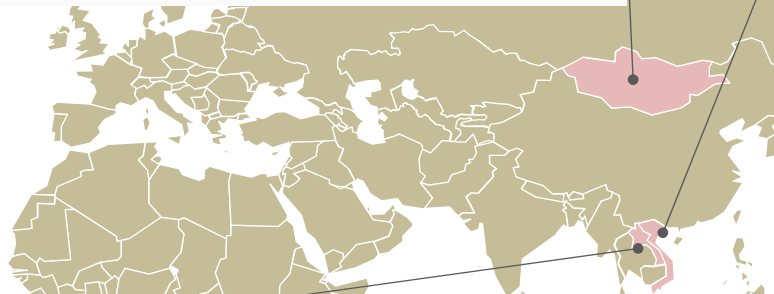


JCM Demonstration Projects by NEDO in FY2015

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).



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.

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.

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.

- **Thin-Film solar power plant (Sharp) since FY2013**

Installing Thin-film PV and verifying its GHG emission reduction effect by the remote auto-monitoring system which complement the monitoring lacking data, with the minimum equipment composition.

- **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 : **10 projects** (4 countries)
Underlined Project in Vietnam is registered as a JCM project.

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

FS for City to City Collaboration Project

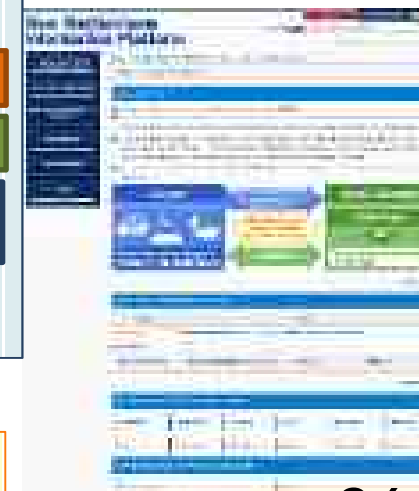
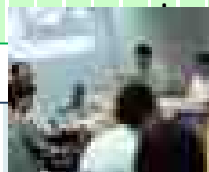
To survey feasibility of potential large scale JCM projects including city level collaboration

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>>



JCM Model Projects by MOE

The draft budget for projects starting from FY 2016 is 6.7 billion JPY (approx. USD 56 million) in total by FY2018

Budget will be fixed after approval by the Parliament

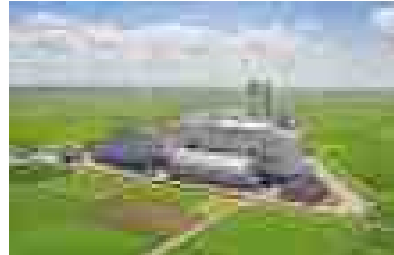
Finance part of an investment cost (less than half)

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 CO₂ 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)

Draft Budget for FY2016

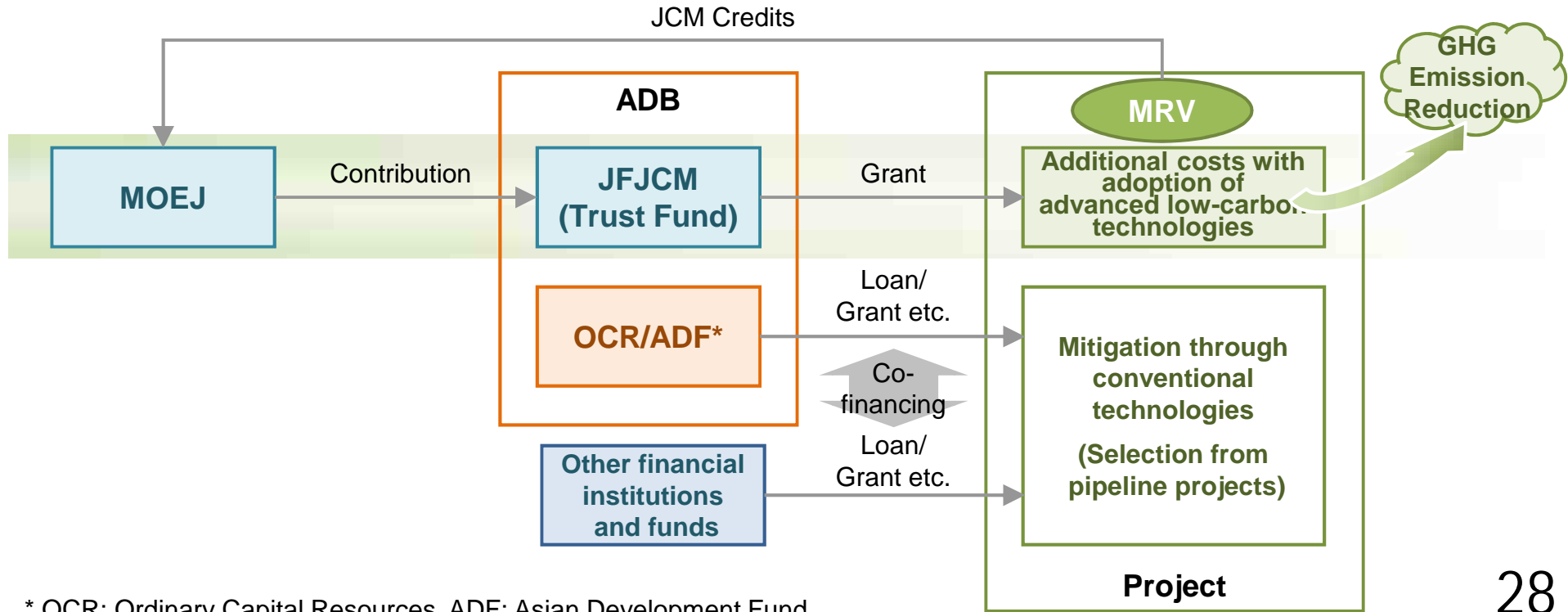
1.2 billion JPY (approx. USD 10 million)

Scheme

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

Purpose

To develop ADB projects as the “Leapfrog” developments by the advanced technologies and to seek to acquire JCM credits for achievement of Japan’s GHG emission reduction target.



* OCR: Ordinary Capital Resources, ADF: Asian Development Fund

JCM REDD+ Model Projects by MOE



【Background】

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

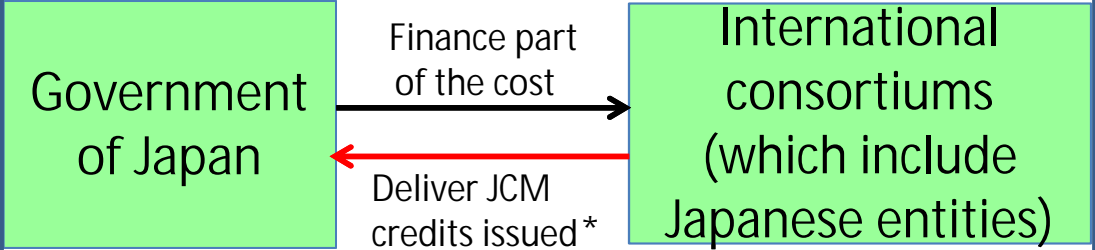
【Expected outcome】

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



《 Projects outline 》

【The draft budget for FY 2016】 80 million JPY (approx. USD 0.67 million)



* 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 seek to acquire JCM credits for achievement of Japan's GHG emission reduction target

Project budget and implementation term

Up to 40 million JPY/year (fixed)

Eligible Companies

Japanese corporation(the representative of international consortiums)

JCM Financing programs by MOEJ (FY2013/2014/2015) as of Jan 12, 2016

Thailand:

Energy Saving at Convenience Stores with High Efficiency Air-Conditioning and Refrigerated Showcase
 Introduction of Solar PV System on Factory Rooftop
 Reducing GHG Emission at Textile Factory by Upgrading to Air-saving Loom (Samutprakarn)
 Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor
 Installation of Co-generation Plant for On-Site Energy Supply in Motorcycle Factory
 Energy Saving for Air-Conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller
 Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory

Bangladesh:

Energy Saving for Air Conditioning & Facility Cooling by High Efficiency Centrifugal Chiller (Suburbs of Dhaka)
 Installation of High Efficiency Loom at Weaving Factory
 Introduction of PV-diesel Hybrid System at Fastening Manufacturing Plant
 50MW Solar PV Power Plant Project
 Installation of High Efficiency Centrifugal Chiller for Air Conditioning System in Clothing Tag Factory

Saudi Arabia:

Introduction of High Efficiency Electrolyzer in Chlorine Production Plant

Ethiopia:

Introduction of Biomass CHP Plant in Flooring Factory

Kenya:

Solar Diesel Abatement Projects
 6MW Small Hydropower Generation Project in Rupingazi
 Introduction of Solar PV System at Salt Factory

Maldives:

Solar Power on Rooftop of School Building Project
 Smart Micro-Grid System for POISED Project in Addu Atoll

Myanmar:

Introduction of Waste to Energy Plant in Yangon City

Malaysia:

PV Power Generation and Relevant Monitoring System for the Office Building

Mongolia:

Upgrading and Installation of Centralized Control System of High-Efficiency Heat Only Boiler (HOB)
 Installation of 2.1MW Solar Power Plant for Power Supply in Ulaanbaatar Suburb
 10MW Solar Power Project in Darkhan City

Viet Nam:

Anaerobic Digestion of Organic Waste for Biogas Utilization at Market
 Eco-driving with the Use of Digital Tachographs
 Introduction of amorphous high efficiency transformers in power distribution systems
 Introduction of High Efficiency Air-conditioning in Hotel
 Energy Saving in Lens Factory with Energy Efficient Air-Conditioners
 Energy Saving in Acid Lead Battery Factory with Container Formation Facility
 Introduction of High Efficiency Electric Furnace at Foundries
 Introduction of Solar PV System at Shopping Mall in Ho Chi Minh City
 Introduction of Amorphous High Efficiency Transformers in Southern and Central Power Grids
 Energy Saving in Factories with Air-Conditioning Control System
 Installation of High Efficiency Kiln in Sanitary Ware Manufacturing Factory

Laos:

REDD+ project in Luang Prabang Province through controlling slash-and-burn

Cambodia:

Introduction of High Efficiency LED Lighting Utilizing Wireless Network
 Introduction of Ultra-lightweight Solar Panels for Power Generation at International School

Palau:

Small-Scale Solar Power Plant for Commercial Facilities in Island States Project
 Small-Scale Solar Power Plants for Commercial Facilities Project II
 Solar PV System for Schools Project

Indonesia:

Energy Saving for Air-Conditioning and Process Cooling at Textile Factory (in Batang city)
 Energy Savings at Convenience Stores
 Energy Efficient Refrigerants to Cold Chain Industry
 Energy Saving by Installation of Double Bundle-type Heat Pump
 Energy Saving for Air-Conditioning and Process Cooling at Textile Factory
 Power Generation by Waste Heat Recovery in Cement Industry
 Solar Power Hybrid System Installation to Existing Base Transceiver Stations in Off-grid Area
 Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer
 Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller
 Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory
 Reducing GHG Emission at Textile Factories by Upgrading to Air-Saving Loom
 Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller
 Energy Saving for Industrial Park with Smart LED Street Lighting System
 Introduction of High Efficiency Once-through Boiler System in Film Factory
 Installation of Gas Co-generation System for Automobile Manufacturing Plant
 Introduction of High Efficiency Once-through Boiler in Golf Ball Factory
 1.6MW Solar PV Power Plant Project in Jakabaring Sport City
 REDD+ project in Boalemo District

Model project in FY 2013 (3 countries, 7 projects)

Model project in FY 2014 (7 countries, 15 projects)

ADB project in FY 2014 (1 country, 1 project)

Model project in FY 2015 (10 countries, 34 projects)

REDD+ Model Project in FY 2015 (2 countries, 2 projects)

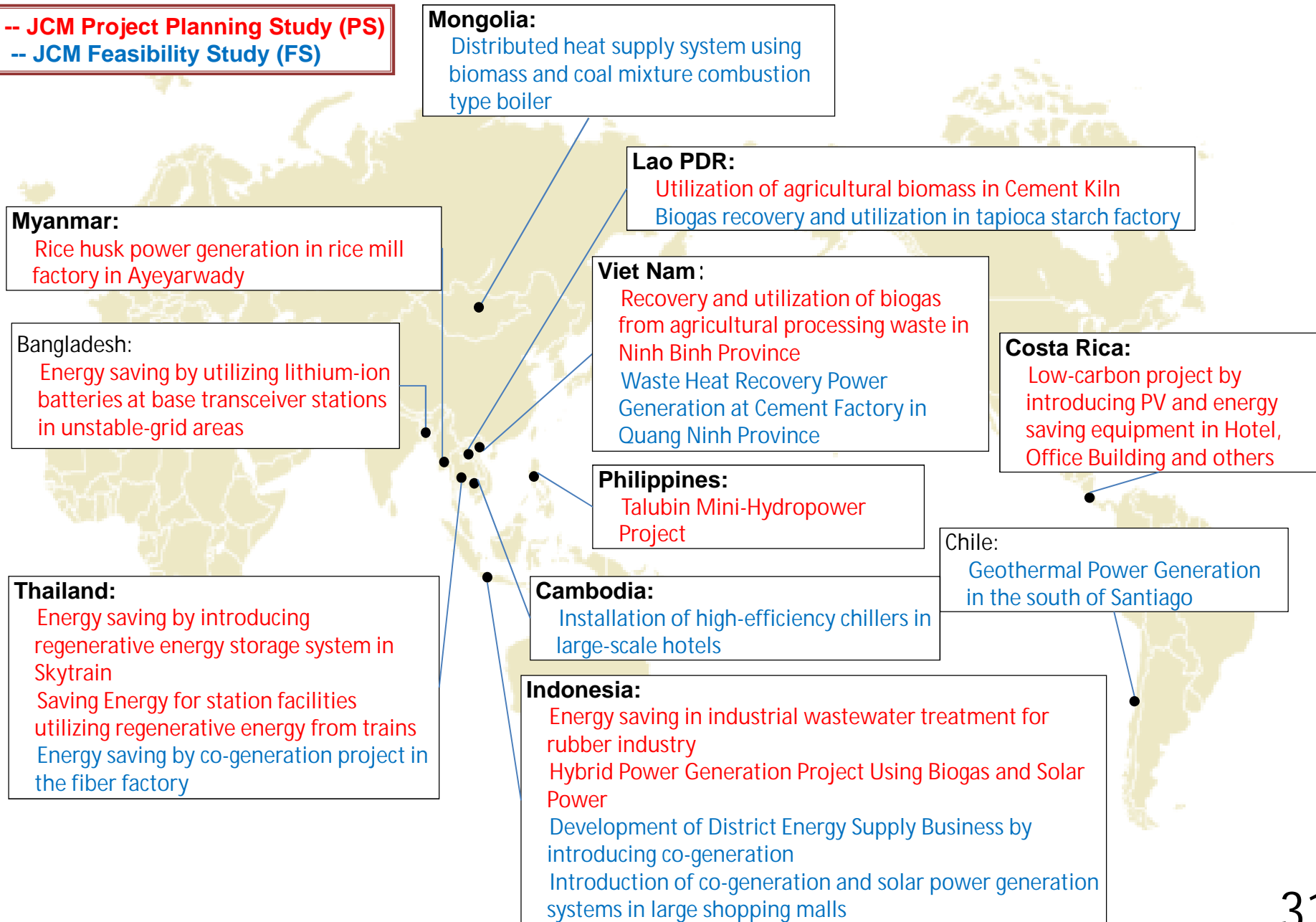
Total 14 countries, 59 projects

The underlined projects have been registered as the JCM projects (7 projects)

these projects account for 2 registered JCM projects respectively, as they're operating in different sites

Overview of JCM Planning/Feasibility Studies in 2015 by MOEJ

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



FY2015 Feasibility studies for city to city collaboration project by MOEJ

Project List

1. Promotion of low carbon city by properly developing material recycling systems in Bengaluru City (Bengaluru City)
2. Establishment of Base for Low-Carbon Project Expansion in Surabaya(Surabaya)
3. Project for Developing JCM projects under city-to-city collaboration between Yokohama city and Batam city(Batam)
4. Project for Low Carbon Society Development under Collaboration between Bandung City and City of Kawasaki(Bandung City)
5. Project for Developing Low-carbon Tourism Cities through the Joint Crediting Mechanism in Siem Reap (Siem Reap)
6. JCM projects development (energy efficiency, and waste and waste water) under the Bangkok Master Plan on Climate Change, and study on financial and other facilitation schemes for introducing low carbon technologies (Bangkok)
7. Promotion of Decarbonizing of Municipal Waste Management and Ecological Industrial Town in Rayong Prefecture (Rayong Pref.)
8. JCM Feasibility Study in Da Nang through "Technical Cooperation for Sustainable Urban Development" with Yokohama City (Da Nang)
9. The whole city low carbonization in Hai Phong City (Hai Phong)
10. Ho Chi Minh City – Osaka City Cooperation Programme for Developing Low Carbon City(Ho Chi Minh)
11. Establishment of Base for Low-Carbon Project Expansion in Iskandar (Iskandar)
12. Study for building a sustainable low carbon city around the industrial zone in Patheingyi city, Ayeyarwady Division, Myanmar(Patheingyi)
13. JCM Project Formulation Study through City-to-City Collaboration in Yangon(Yangon)
14. Programme for the Establishment of Low-Carbon Historic City in Vientiane, based on City-to-City Cooperation between Vientiane Capital and Kyoto City(Vientiane Capital)



Reference:
Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

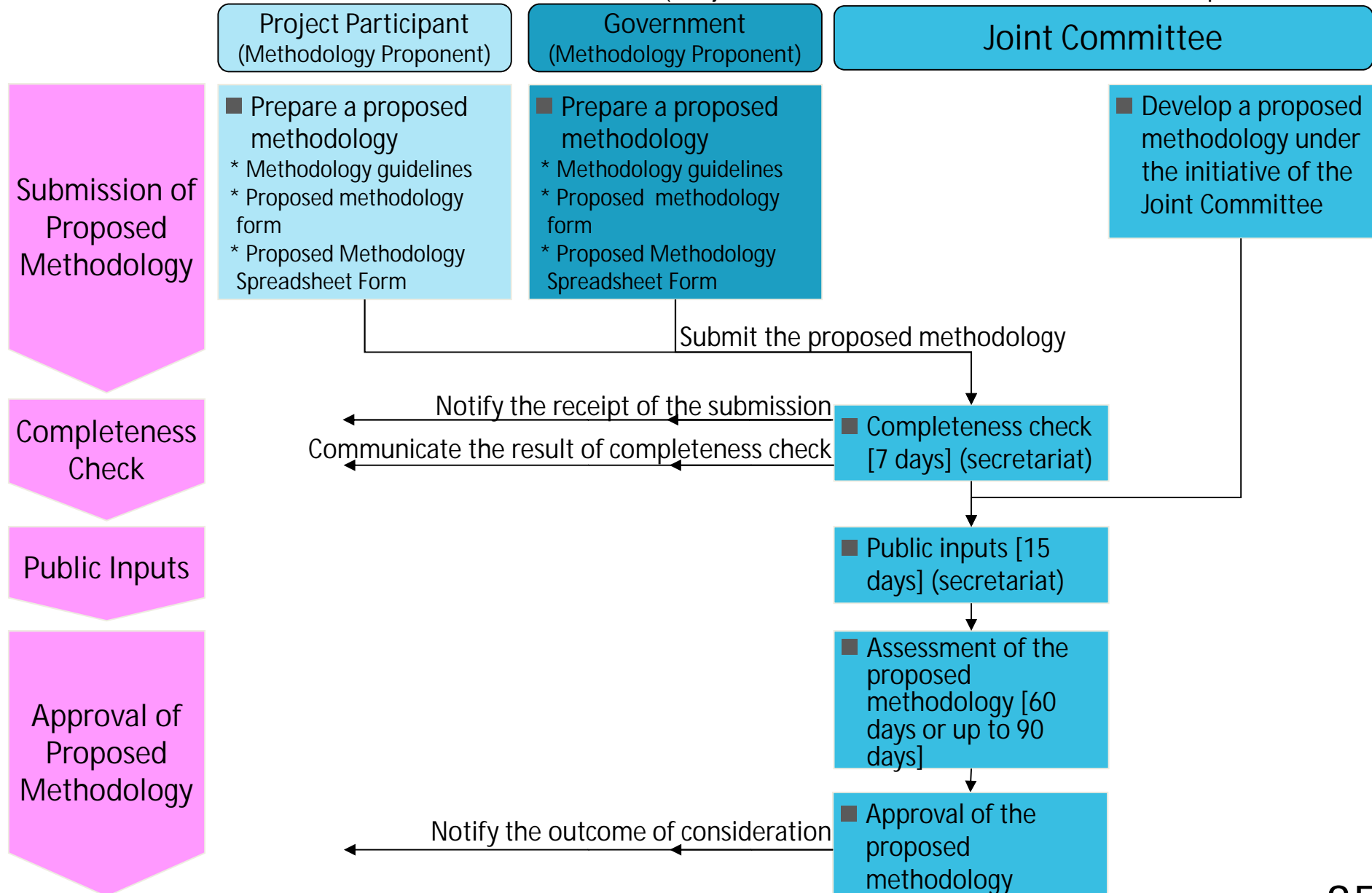
Necessary documents for the JCM

(Subject to further consideration and discussion with partner countries)

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

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)



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

Validation

Validation and verification can be conducted simultaneously or separately.

Notify the receipt of the submission

- 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

■ Completeness check [7 days] (secretariat)

Notify the conclusion

Notify the registration

■ Registration

Notify the registration

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

(Subject to further consideration and discussion with partner countries)



Monitoring

- Conduct monitoring
- Prepare a monitoring report
- * PDD and monitoring guidelines
- * Monitoring report sheet

Submit the monitoring report for verification

Verification

Validation and verification can be conducted simultaneously or separately.

- Verify emission reductions
- Prepare a verification report
- * Validation and Verification guidelines
- * Verification report form

Submit the verification report

Issuance

- Determine allocation of credits
- Complete a credit issuance request form
- * Credit issuance request form

Request for notification for issuance

- Completeness check [7 days] (secretariat)

Notify the receipt of the request

- Decision on notification of amount of credits to be issued

Notify the result

Notify the amount of credits to be issued

Notify the issuance

- Issuance of credits

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.

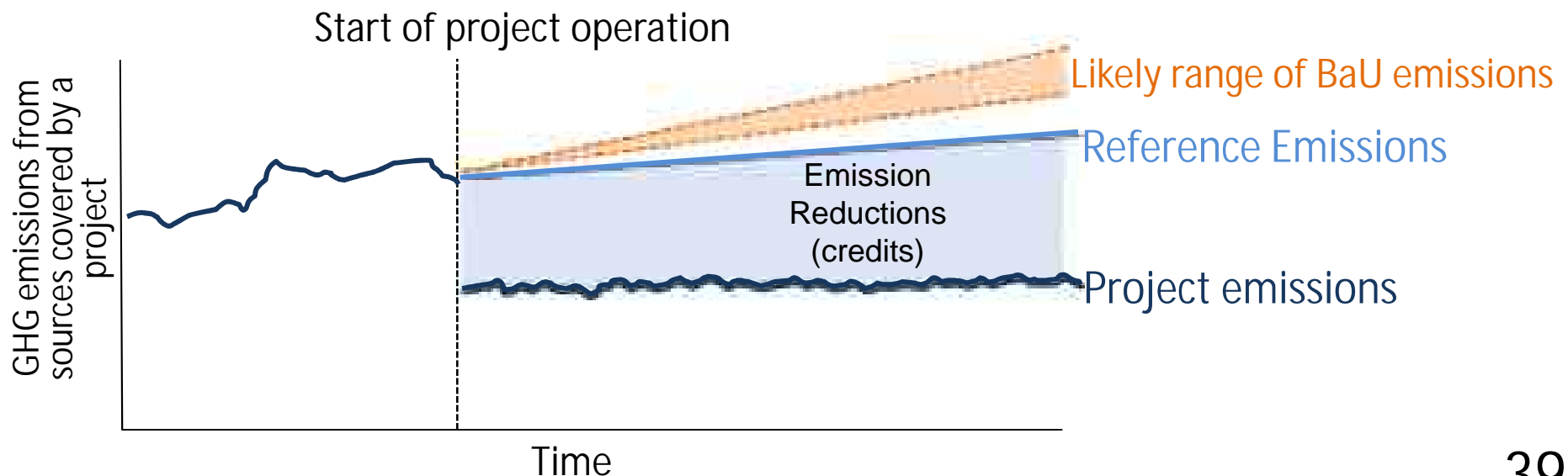
Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.

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)

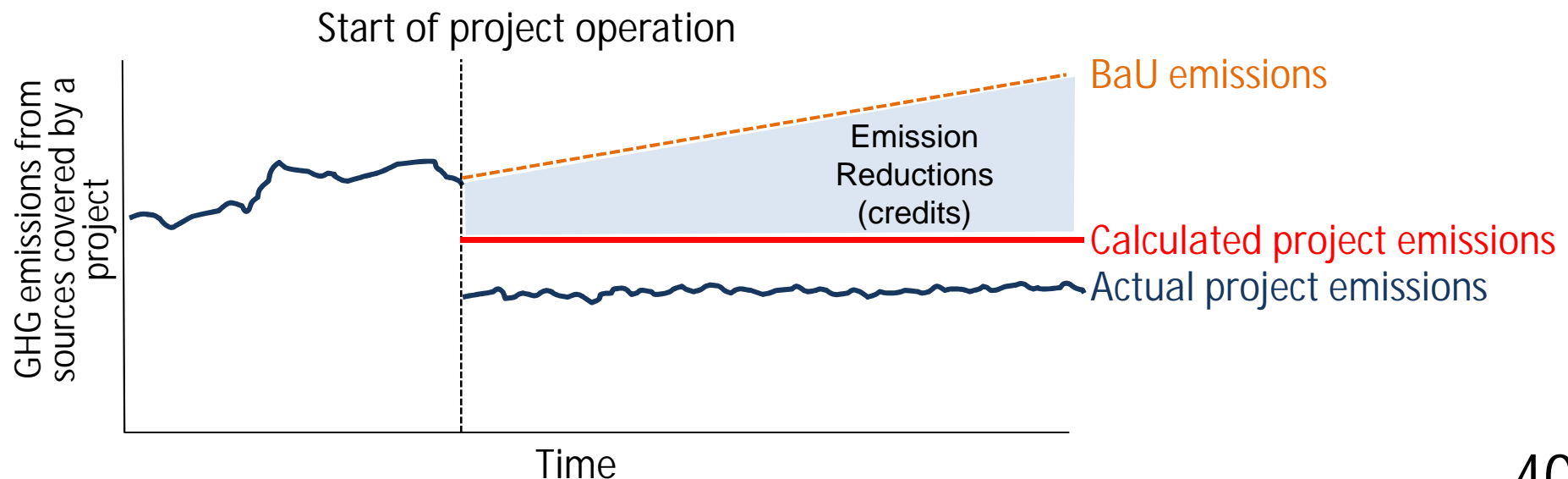
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the 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">• 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)	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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 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

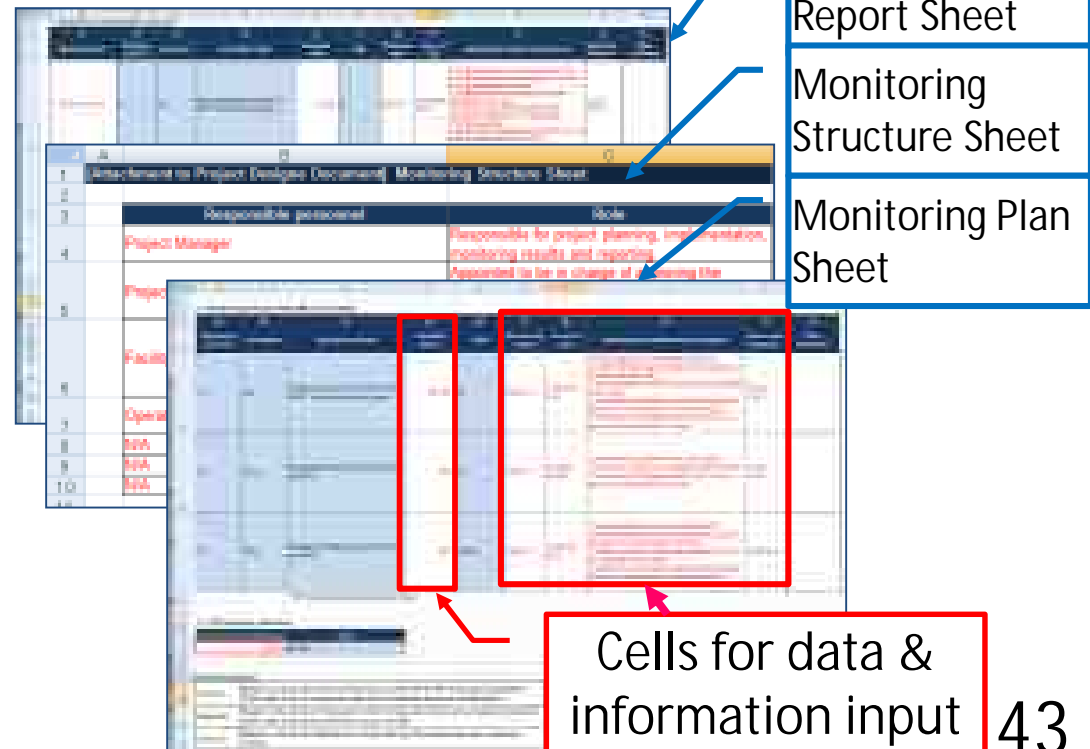
(Subject to further consideration and discussion with partner countries)

- 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 Report Sheet

Monitoring Structure Sheet

Monitoring Plan Sheet

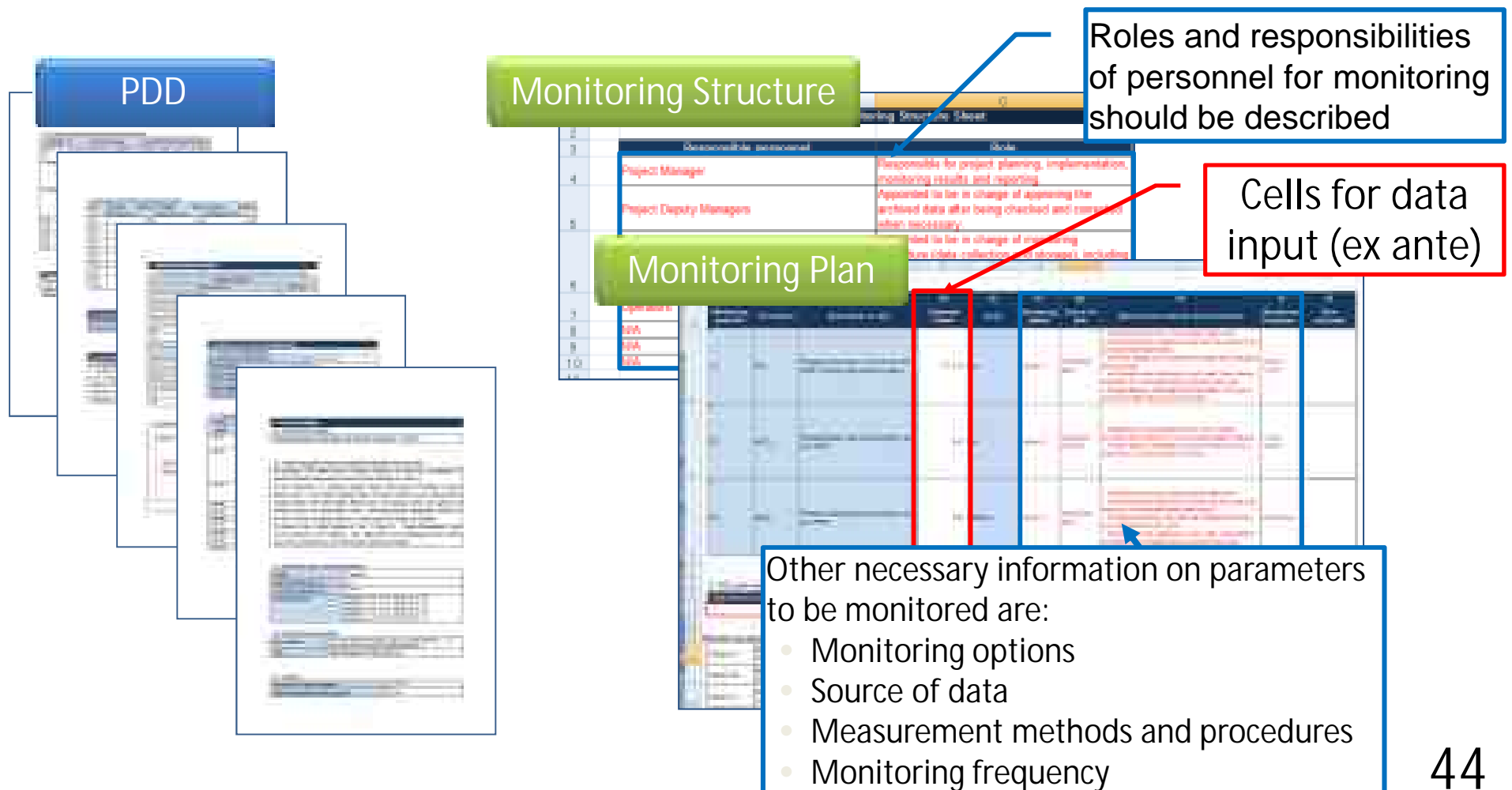
Cells for data & information input

Responsible personnel	Role
Project Manager	Responsible for project planning, implementation, monitoring results and reporting. Appointed in line with change of planning the
Project	
Facilities	
Operational	
NA	
NA	
NA	

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.



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.

The image shows a screenshot of a 'Monitoring Report' sheet. A green header bar at the top left contains the text 'Monitoring Report'. The main area is a grid with several columns and rows. A red box on the left side highlights a column, with an arrow pointing to it from a red-bordered box containing the text 'Monitoring period'. A red box at the top right highlights a column, with an arrow pointing to it from a red-bordered box containing the text 'Cells for data input (ex post)'. A blue box at the bottom right highlights a large section of the grid, with an arrow pointing to it from a blue-bordered box containing the text 'Other necessary information on monitored parameters are to be filled in:'. Below this text is a bulleted list: 'Monitoring options', 'Source of data', 'Measurement methods and procedures', and 'Monitoring frequency'. The grid itself contains various data entries, some of which are highlighted in red and blue.

Monitoring Report

Monitoring period

Cells for data input (ex post)

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

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