Recent Development of The Joint Crediting Mechanism (JCM)

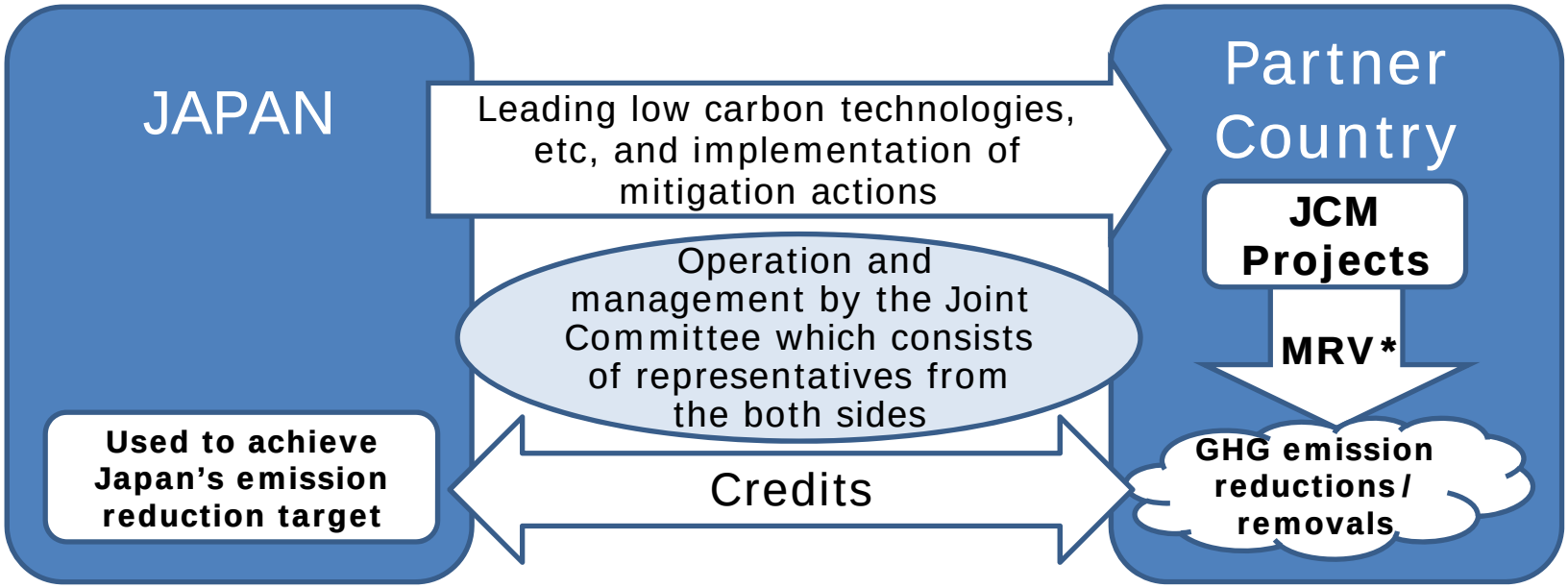
Aug 2019

Government of Japan

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

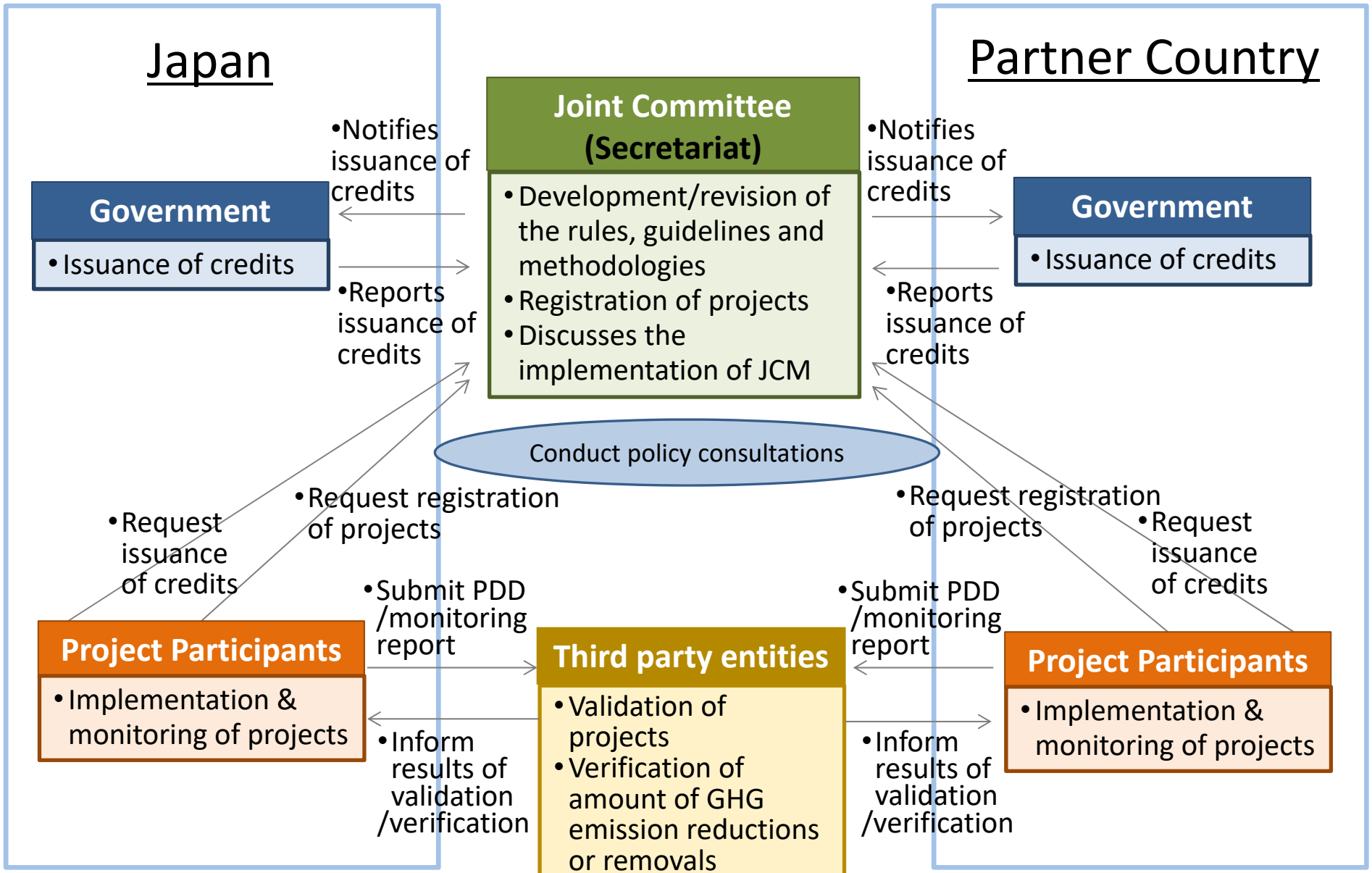
Basic Concept of the JCM

- 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

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.

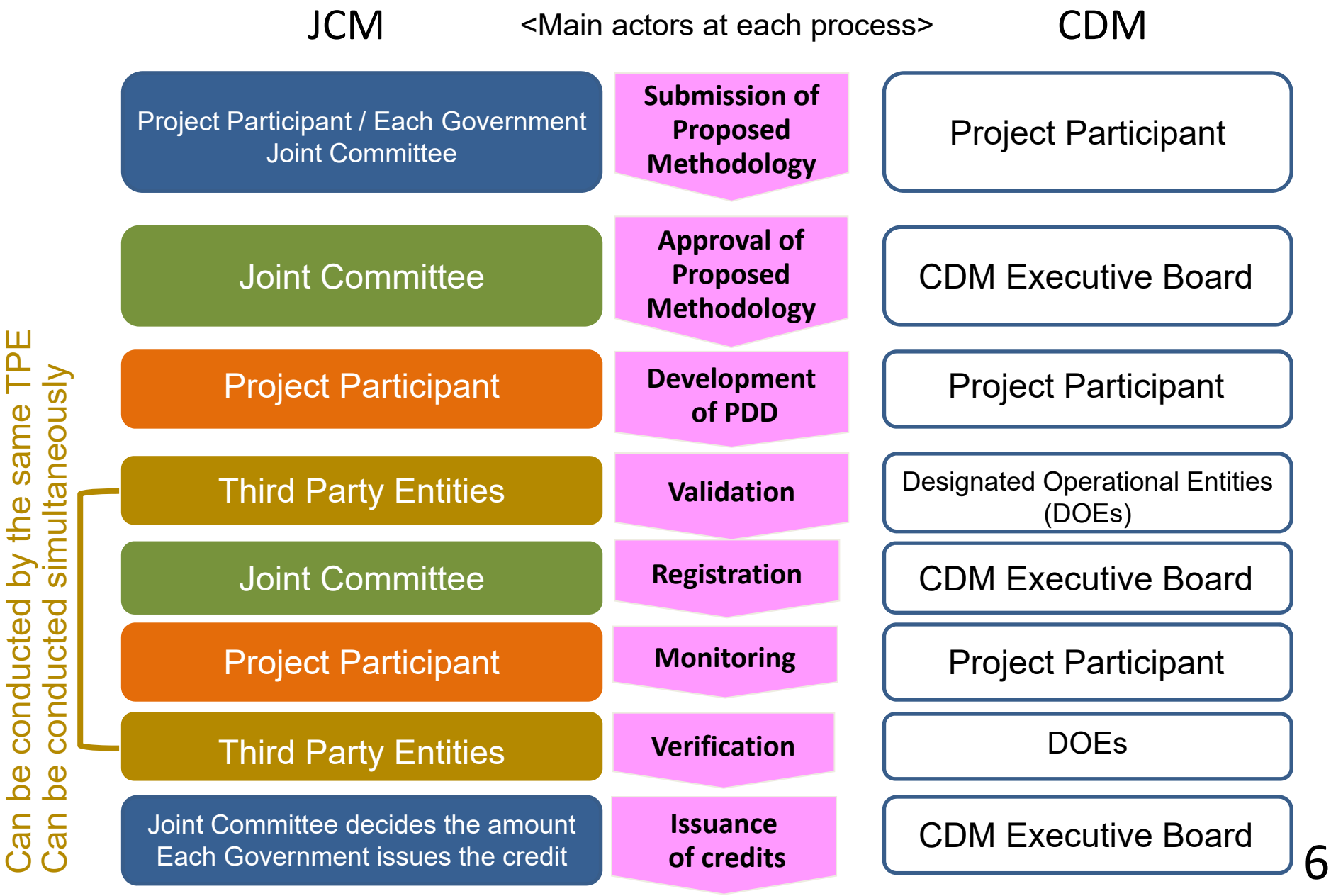
Features of the JCM

(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.

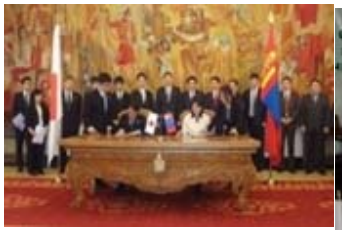
(3) The JCM aims for concrete contributions to assisting adaptation efforts of developing countries after the JCM is converted to the tradable credit type mechanism.

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.



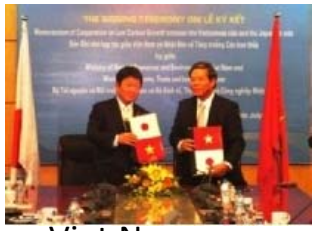
Mongolia
Jan. 8, 2013
（Ulaanbaatar）

Bangladesh
Mar. 19, 2013
(Dhaka)

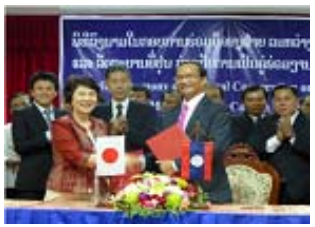
Ethiopia
May 27, 2013
(Addis Ababa)

Kenya
Jun. 12,2013
(Nairobi)

Maldives
Jun. 29, 2013
(Okinawa)

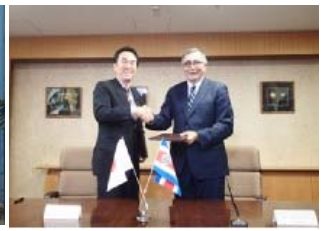


Viet Nam
Jul. 2, 2013
(Hanoi)



Lao PDR
Aug. 7, 2013
(Vientiane)

Indonesia
Aug. 26, 2013
(Jakarta)



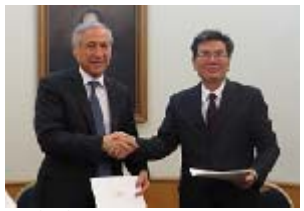
Costa Rica
Dec. 9, 2013
(Tokyo)

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)

PARIS2015
CONFÉRENCE DES NATIONS UNIES SUR LES CHANGEMENTS CLIMATIQUES
COP21·CMP11

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-CO_2eq. 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.

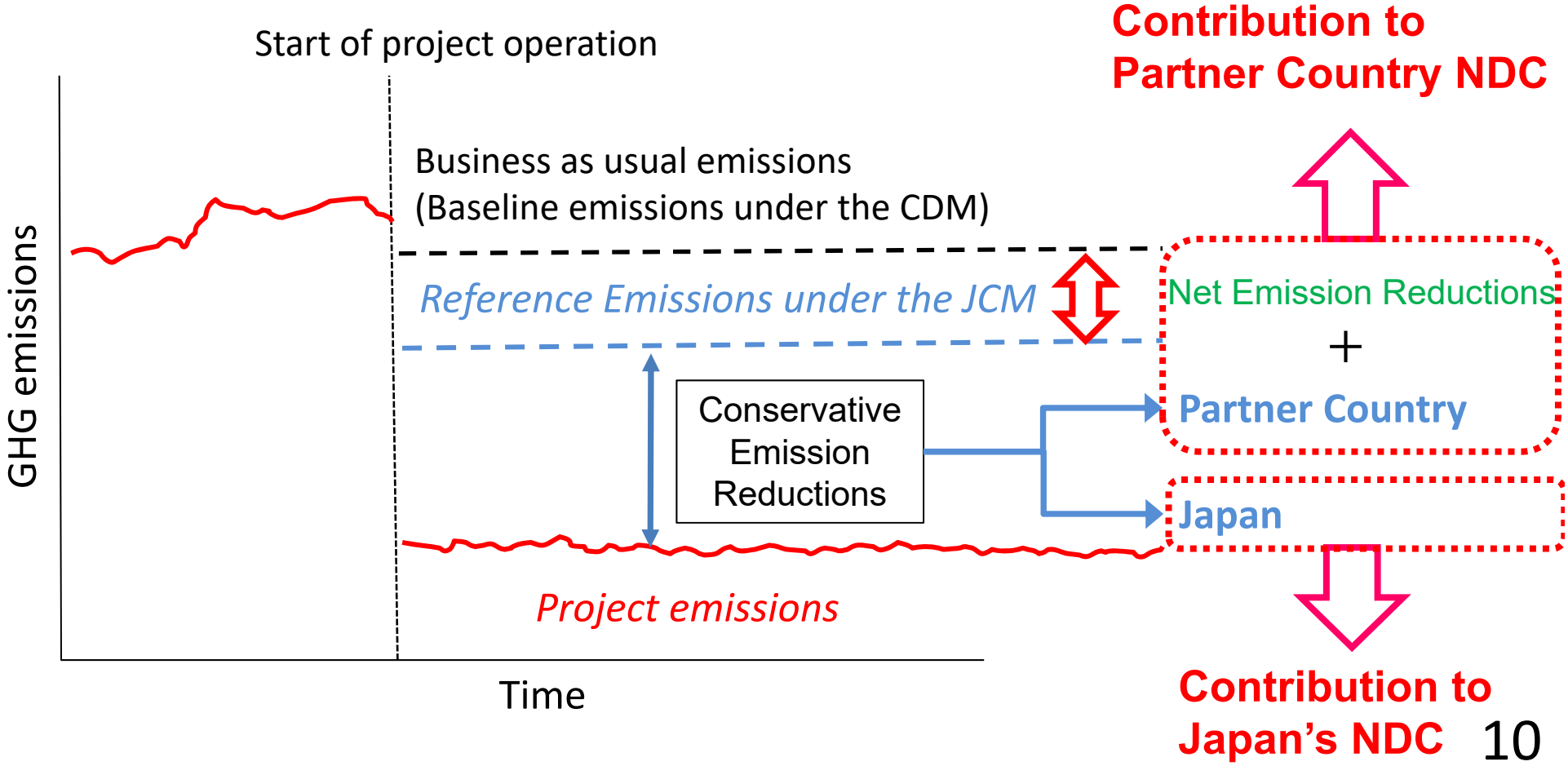
Reference information
GHG emissions and removals
JCM and other international contributions

○ 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_2.

JCM's Contribution to NDC

- JCM's conservative emission reduction calculation (reference emissions below BaU emissions) will ensure a net decrease and/or avoidance of GHG emissions.
- This part of emission reductions will automatically contribute to the achievement of NDC.



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 oversees 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

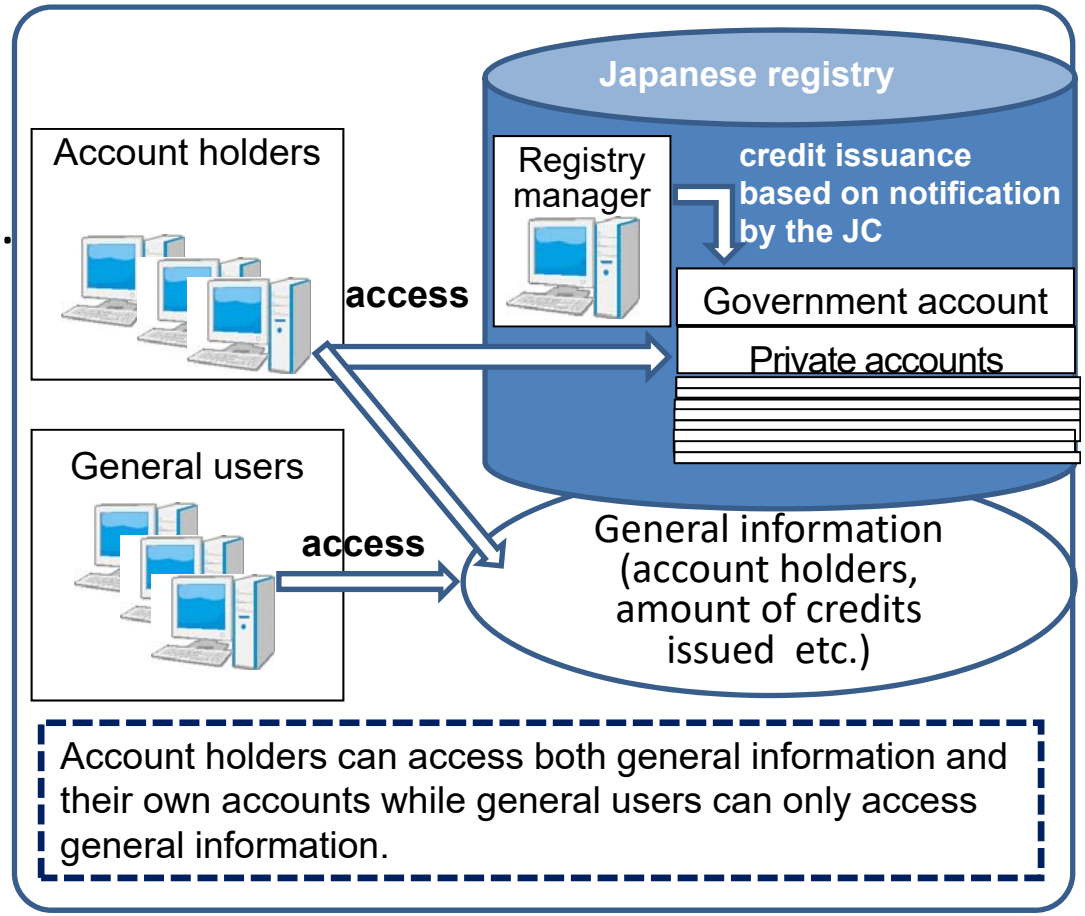
	Kyoto Protocol units[d] *(kt CO_2 eq)*										*Other units*[d,e] *(kt CO_2 eq)*			
	AAUs		*ERUs*		*CERs*		*tCERs*		*lCERs*		*Units from market-based mechanisms under the Convention*		*Units from other market-based mechanisms*	
	20XX-3	*20XX-2*	*20XX-3*	*Year X-2*	*20XX-3*	*20XX-2*	*20XX-3*	*20XX-2*	*20XX-3*	*20XX-2*	*20XX-3*	*20XX-2*	*20XX-3*	*20XX-2*
Quantity of units														
							20XX-3					20XX-2		
Total														

- The JCM is one of various approaches based on Decision 1/CP.18, jointly developed and implemented by Japan and partner countries, and Japan intends to contribute to elaborating the framework for such approaches under the UNFCCC.
- Japan 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

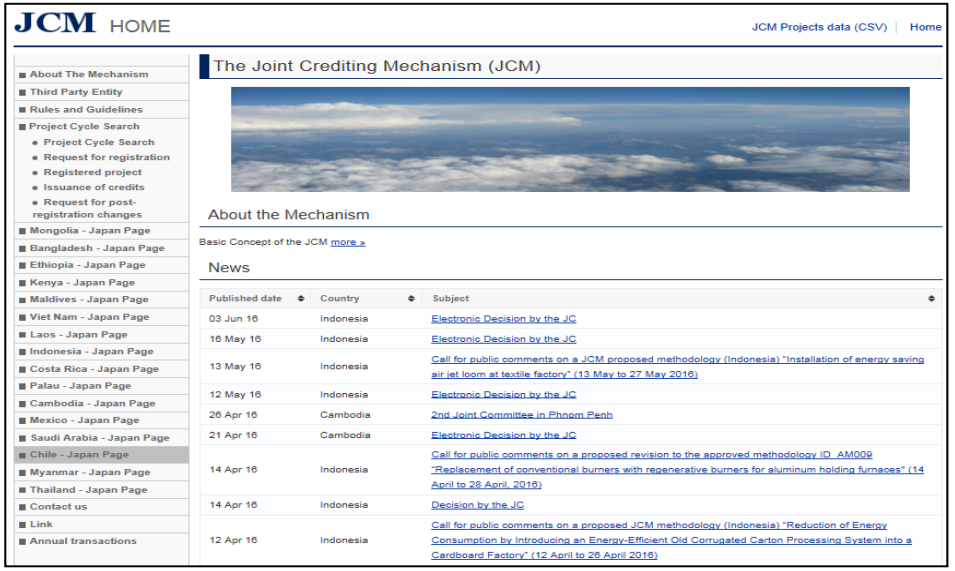


Image of the general information page

Image of the individual JCM Partner countries-Japan page

Progress of the JCM in each partner country as of Aug 2 2019

Partner countries	Start from	No. of JC	No. of registered projects	No. of approved methodologies	Pipeline (JCM Financing Programme & Demonstration Projects in FY 2013-2019)
Mongolia	Jan 2013	6	5	3	10
Bangladesh	Mar 2013	4	3	3	6
Ethiopia	May 2013	3		3	
Kenya	Jun 2013	3		3	3
Maldives	Jun 2013	4	1	1	2
Viet Nam	Jul 2013	8	14	15	26
Lao PDR	Aug 2013	4	1	3	5
Indonesia	Aug 2013	8	17	19	34
Costa Rica	Dec 2013	2		3	2
Palau	Apr 2014	5	3	1	5
Cambodia	Apr 2014	4	1	2	5
Mexico	Jul 2014	2		1	7
Saudi Arabia	May 2015	2	1	1	1
Chile	May 2015	2		1	2
Myanmar	Sep 2015	2		1	7
Thailand	Nov 2015	4	6	9	32
Philippines	Jan 2017	1			11
Total	17	64	52	69	158

Programmes by Government of Japan

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

JCM Promotion Scheme by METI

JCM Demonstration Projects

■JCM Demonstration Projects are implemented by NEDO (New Energy and Industrial Technology Development Organization), which demonstrate and verify the effectiveness of advanced low carbon technology with technical assistance and its GHG emission reduction effect in line with JCM rules and guidelines.

■Coverage of project cost: Cost of the Demonstration and verification of the projects

e.g. Cost of design, production, transfer, installation of equipment, technical adviser, JCM related procedure etc.

■Eligibility for the JCM Demonstration Projects:

- To utilize the advanced Japanese technologies utmost and be deployed widely.
- To aim at Larger GHG emission reduction effect is expected through the diffusion of the technology introduced and demonstrated through the projects ,
- To consist the Project Participants of entities from both countries, only the Japanese entities can apply for the Projects. The projects shall be completed within 3 years.

JCM Feasibility Study (FS)

■The study is to develop the strategic projects which contributes to achieve the GHG emission reduction at the global level through the optimization of the advanced low carbon technology and activate the low carbon business in line with JCM.

MRV Application Study

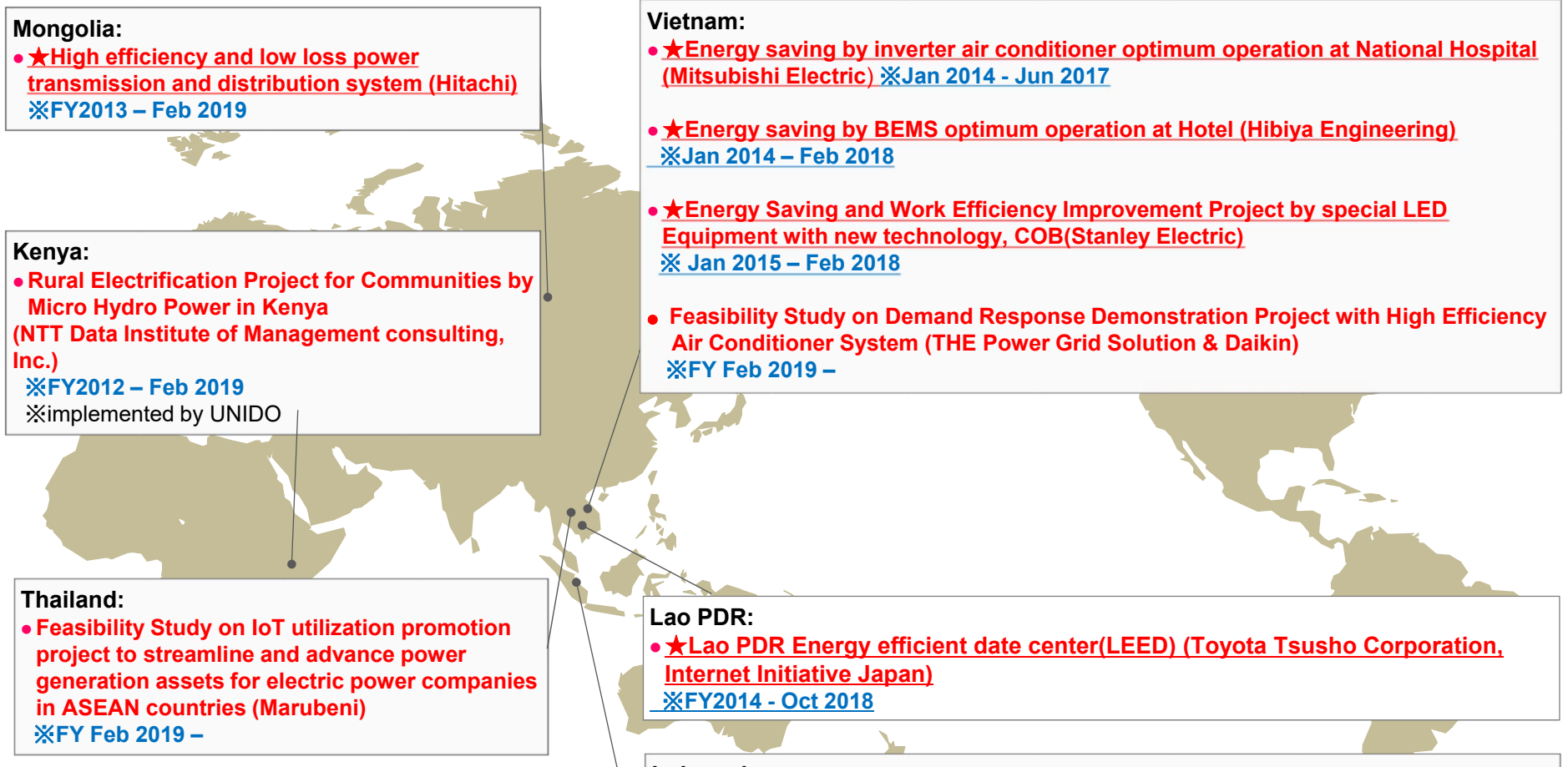
■ By applying MRV methodology to the facility with low-carbon technologies that have already been installed or will certainly be installed in any JCM partner country; 1) to obtain verification by third party entity under the JCM; and 2) to conduct review and feedback on efficiency and applicability of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

Capacity Building Programmes

■Dispatching technical experts to and inviting officials from host countries in order to solve the problems they face to disseminate low carbon technology, etc.

Demonstration Projects by METI* (as of August 2019)

* Including NEDO and UNIDO



Mongolia:
- ★High efficiency and low loss power transmission and distribution system (Hitachi)
  ※FY2013 – Feb 2019

Kenya:
- Rural Electrification Project for Communities by Micro Hydro Power in Kenya
  (NTT Data Institute of Management consulting, Inc.)
  ※FY2012 – Feb 2019
  ※implemented by UNIDO

Thailand:
- Feasibility Study on IoT utilization promotion project to streamline and advance power generation assets for electric power companies in ASEAN countries (Marubeni)
  ※FY Feb 2019 –

Vietnam:
- ★Energy saving by inverter air conditioner optimum operation at National Hospital (Mitsubishi Electric) ※Jan 2014 - Jun 2017
- ★Energy saving by BEMS optimum operation at Hotel (Hibiya Engineering)
  ※Jan 2014 – Feb 2018
- ★Energy Saving and Work Efficiency Improvement Project by special LED Equipment with new technology, COB(Stanley Electric)
  ※ Jan 2015 – Feb 2018
- Feasibility Study on Demand Response Demonstration Project with High Efficiency Air Conditioner System (THE Power Grid Solution & Daikin)
  ※FY Feb 2019 –

Lao PDR:
- ★Lao PDR Energy efficient date center(LEED) (Toyota Tsusho Corporation, Internet Initiative Japan)
  ※FY2014 - Oct 2018

Indonesia:
- Operation Optimization in Utility Facility (Azbil)
  ※FY2013 – Dec 2018
- Energy Saving by Optimum Operation at Oil Refinery（Yokogawa）
  ※FY2013 – Feb 2019
- The low carbonization of mobile communication's BTS (Base Transceiver Station) by the Introduction of "TRIBRID system" (KDDI)
  ※FY2015 – Feb 2019

Total：11 projects（6 countries）

- Underlined one project in Mongolia, three projects in Vietnam, one project in Lao PDR, three projects in Indonesia were registered as JCM projects.
- Projects with "★" are those which JCM credits have been issued.

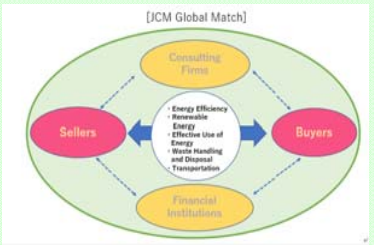
JCM Project Development & Outreach Programme by MOEJ

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.
- To **enhance overall capacity for JCM implementation** through facilitating understanding on the JCM rules & guidelines, and MRV methodologies by organizing workshops, seminars, training courses and site visits.



- **JCM Business Matching Site "JCM Global Match"** provides business matching opportunities for sellers and buyers of low and zero carbon technology for the JCM project.
  https://gec.force.com/JCMGlobalMatch/

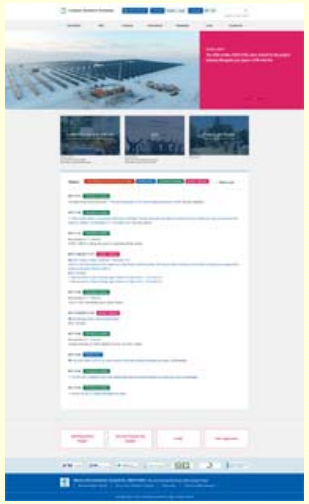


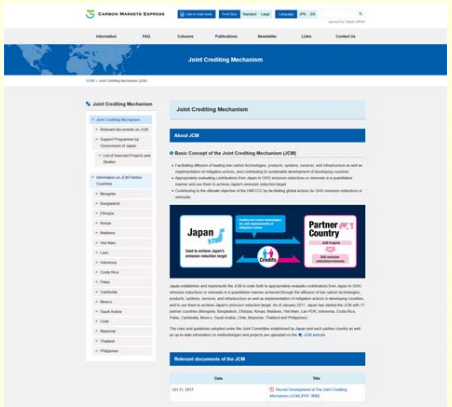
Outreach

- **Carbon Markets Express website** provides information on the latest updates on the JCM and relevant programmes such as JCM promotion schemes by the Government of Japan.
  https://www.carbon-markets.go.jp/eng/
- **E-mail Newsletter** and up-to-date information are distributed regularly. To register, access:

(for JP) https://www.carbon-markets.go.jp/newsletter/

(for EN) https://www.carbon-markets.go.jp/eng/en_newsletter/





CARBON MARKETS EXPRESS

JCM Model Projects by MOE

Budget for projects starting from FY 2019 is 9.9 billion JPY (approx. USD 99 million) in total by FY2021

(1 USD = 100 JPY)

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

Government of Japan

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

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

International consortiums
(which include Japanese entities)

- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO_2 from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects : starting installation after the adoption of the financing and finishing installation within three years.

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

Budget for FY2019

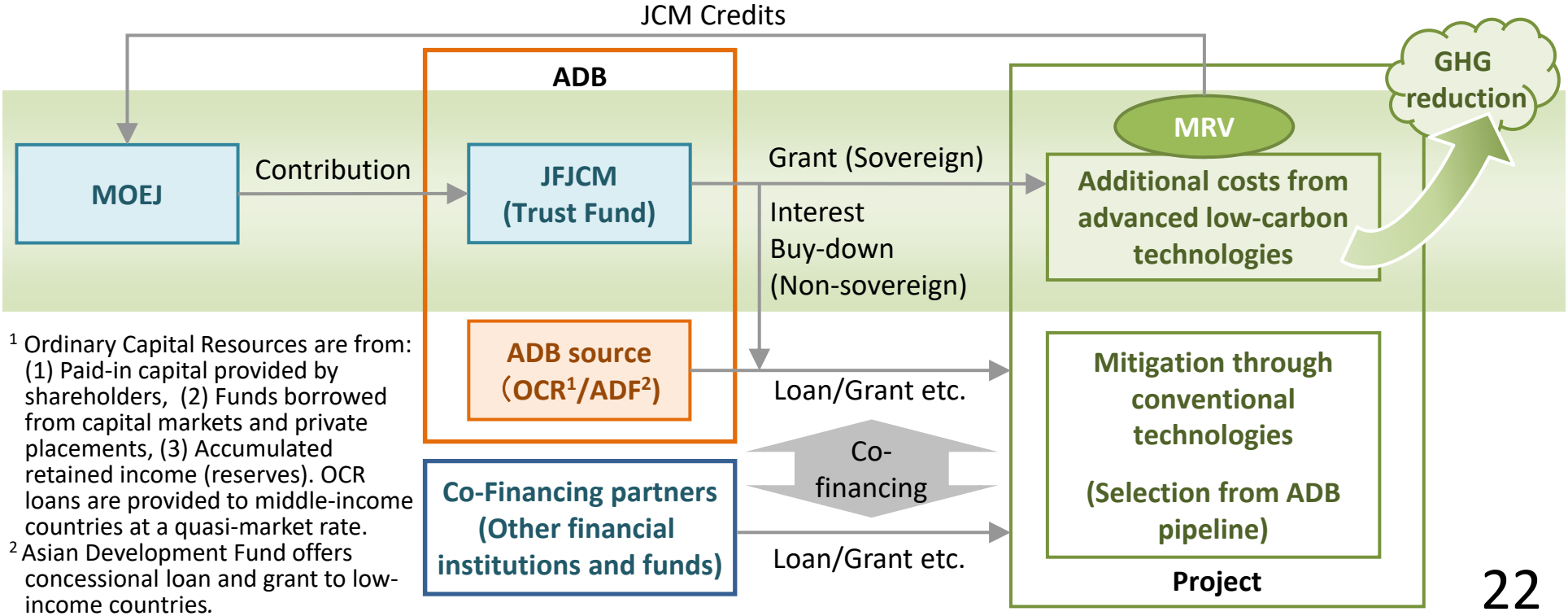
•JPY 1 billion (approx. USD 10 million)

Scheme

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



[1] 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.

[2] Asian Development Fund offers concessional loan and grant to low-income countries.

JCM F-gas Recovery and Destruction Model Project by MOE

【Budget for FY 2019】
41 million JPY (approx. 0.41 million USD) (1 USD = 100 JPY)

Government of Japan

Finance part of the cost in flat-rate (up to 40 million JPY/year)

Conduct MRV to estimate GHG emission reductions.
At least half or ratio of financial support to project cost (larger ratio will be applied) of JCM credits issued are expected to be delivered to the government of Japan

International consortiums (which include Japanese entities)

Manufacturers of equipment which uses F-gas	Users of equipment which uses F-gas	Entities for recovery and transportation of used F-gas (recycling or scrap entities)	Entities for destruction of used F-gas (may use existing facility for destruction)

Purpose

To recover and destroy F-gas (GHG except for energy-related CO2, etc) from used equipment instead of releasing to air, and reduce emissions

Scope of Financing

- Establish scheme for recovery and destruction
- Install facilities/equipment for recovery/destruction
- Implementation of recovery, transportation, destruction and monitoring

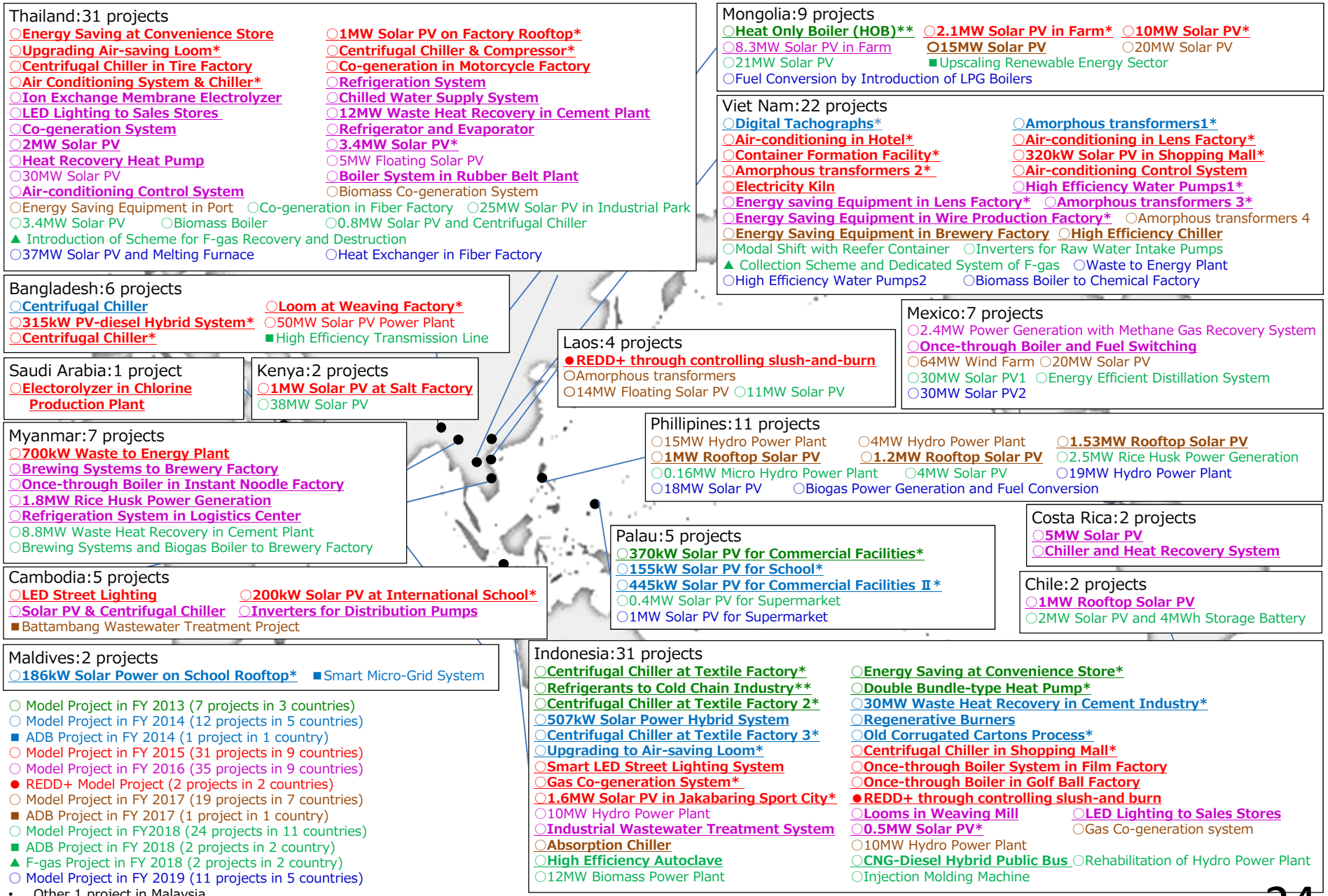
Project Period

Three years in maximum (Ex. 1st year for scheme, 2nd year for facilities, 3rd year for recovery/destruction)

Eligible Projects

- After the adoption of financing, start implementation of recovery/destruction within three years
- Aim for the registration as JCM project and issuance credits

JCM Financing Programme by MOEJ (FY2013～2019) as of Aug 2, 2019



Thailand:31 projects

- ○Energy Saving at Convenience Store
- ○Upgrading Air-saving Loom*
- ○Centrifugal Chiller in Tire Factory
- ○Air Conditioning System & Chiller*
- ○Ion Exchange Membrane Electrolyzer
- ○LED Lighting to Sales Stores
- ○Co-generation System
- ○2MW Solar PV
- ○Heat Recovery Heat Pump
- ○30MW Solar PV
- ○Air-conditioning Control System
- ○1MW Solar PV on Factory Rooftop*
- ○Centrifugal Chiller & Compressor*
- ○Co-generation in Motorcycle Factory
- ○Refrigeration System
- ○Chilled Water Supply System
- ○12MW Waste Heat Recovery in Cement Plant
- ○Refrigerator and Evaporator
- ○3.4MW Solar PV*
- ○5MW Floating Solar PV
- ○Boiler System in Rubber Belt Plant
- ○Biomass Co-generation System
- ○Energy Saving Equipment in Port ○Co-generation in Fiber Factory ○25MW Solar PV in Industrial Park
- ○3.4MW Solar PV ○Biomass Boiler ○0.8MW Solar PV and Centrifugal Chiller
- ▲ Introduction of Scheme for F-gas Recovery and Destruction
- ○37MW Solar PV and Melting Furnace ○Heat Exchanger in Fiber Factory

Mongolia:9 projects

- ○Heat Only Boiler (HOB)** ○2.1MW Solar PV in Farm* ○10MW Solar PV*
- ○8.3MW Solar PV in Farm ○15MW Solar PV ○20MW Solar PV
- ○21MW Solar PV ■Upscaling Renewable Energy Sector
- ○Fuel Conversion by Introduction of LPG Boilers

Viet Nam:22 projects

- ○Digital Tachographs*
- ○Air-conditioning in Hotel*
- ○Container Formation Facility*
- ○Amorphous transformers 2*
- ○Electricity Kiln
- ○Energy saving Equipment in Lens Factory*
- ○Energy Saving Equipment in Wire Production Factory*
- ○Energy Saving Equipment in Brewery Factory
- ○Modal Shift with Reefer Container ○Inverters for Raw Water Intake Pumps
- ▲ Collection Scheme and Dedicated System of F-gas ○Waste to Energy Plant
- ○High Efficiency Water Pumps2 ○Biomass Boiler to Chemical Factory
- ○Amorphous transformers1*
- ○Air-conditioning in Lens Factory*
- ○320kW Solar PV in Shopping Mall*
- ○Air-conditioning Control System
- ○High Efficiency Water Pumps1*
- ○Amorphous transformers 3*
- ○Amorphous transformers 4
- ○High Efficiency Chiller

Bangladesh:6 projects

- ○Centrifugal Chiller
- ○315kW PV-diesel Hybrid System*
- ○Centrifugal Chiller*
- ○Loom at Weaving Factory*
- ○50MW Solar PV Power Plant
- ■High Efficiency Transmission Line

Laos:4 projects

- ●REDD+ through controlling slush-and-burn
- ○Amorphous transformers
- ○14MW Floating Solar PV ○11MW Solar PV

Mexico:7 projects

- ○2.4MW Power Generation with Methane Gas Recovery System
- ○Once-through Boiler and Fuel Switching
- ○64MW Wind Farm ○20MW Solar PV
- ○30MW Solar PV1 ○Energy Efficient Distillation System
- ○30MW Solar PV2

Saudi Arabia:1 project

- ○Electorolyzer in Chlorine Production Plant

Kenya:2 projects

- ○1MW Solar PV at Salt Factory
- ○38MW Solar PV

Phillipines:11 projects

- ○15MW Hydro Power Plant ○4MW Hydro Power Plant ○1.53MW Rooftop Solar PV
- ○1MW Rooftop Solar PV ○1.2MW Rooftop Solar PV ○2.5MW Rice Husk Power Generation
- ○0.16MW Micro Hydro Power Plant ○4MW Solar PV ○19MW Hydro Power Plant
- ○18MW Solar PV ○Biogas Power Generation and Fuel Conversion

Myanmar:7 projects

- ○700kW Waste to Energy Plant
- ○Brewing Systems to Brewery Factory
- ○Once-through Boiler in Instant Noodle Factory
- ○1.8MW Rice Husk Power Generation
- ○Refrigeration System in Logistics Center
- ○8.8MW Waste Heat Recovery in Cement Plant
- ○Brewing Systems and Biogas Boiler to Brewery Factory

Palau:5 projects

- ○370kW Solar PV for Commercial Facilities*
- ○155kW Solar PV for School*
- ○445kW Solar PV for Commercial Facilities Ⅱ*
- ○0.4MW Solar PV for Supermarket
- ○1MW Solar PV for Supermarket

Costa Rica:2 projects

- ○5MW Solar PV
- ○Chiller and Heat Recovery System

Cambodia:5 projects

- ○LED Street Lighting
- ○Solar PV & Centrifugal Chiller
- ○200kW Solar PV at International School*
- ○Inverters for Distribution Pumps
- ■Battambang Wastewater Treatment Project

Chile:2 projects

- ○1MW Rooftop Solar PV
- ○2MW Solar PV and 4MWh Storage Battery

Maldives:2 projects

- ○186kW Solar Power on School Rooftop* ■Smart Micro-Grid System

Indonesia:31 projects

- ○Centrifugal Chiller at Textile Factory*
- ○Refrigerants to Cold Chain Industry**
- ○Centrifugal Chiller at Textile Factory 2*
- ○507kW Solar Power Hybrid System
- ○Centrifugal Chiller at Textile Factory 3*
- ○Upgrading to Air-saving Loom*
- ○Smart LED Street Lighting System
- ○Gas Co-generation System*
- ○1.6MW Solar PV in Jakabaring Sport City*
- ○10MW Hydro Power Plant
- ○Industrial Wastewater Treatment System
- ○Absorption Chiller
- ○High Efficiency Autoclave
- ○12MW Biomass Power Plant
- ○Energy Saving at Convenience Store*
- ○Double Bundle-type Heat Pump*
- ○30MW Waste Heat Recovery in Cement Industry*
- ○Regenerative Burners
- ○Old Corrugated Cartons Process*
- ○Centrifugal Chiller in Shopping Mall*
- ○Once-through Boiler System in Film Factory
- ○Once-through Boiler in Golf Ball Factory
- ●REDD+ through controlling slush-and burn
- ○Looms in Weaving Mill ○LED Lighting to Sales Stores
- ○0.5MW Solar PV* ○Gas Co-generation system
- ○10MW Hydro Power Plant
- ○CNG-Diesel Hybrid Public Bus ○Rehabilitation of Hydro Power Plant
- ○Injection Molding Machine

○ 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 (31 projects in 9 countries)
○ Model Project in FY 2016 (35 projects in 9 countries)
● REDD+ Model Project (2 projects in 2 countries)
○ Model Project in FY 2017 (19 projects in 7 countries)
■ ADB Project in FY 2017 (1 project in 1 country)
○ Model Project in FY2018 (24 projects in 11 countries)
■ ADB Project in FY 2018 (2 projects in 2 country)
▲ F-gas Project in FY 2018 (2 projects in 2 country)
○ Model Project in FY 2019 (11 projects in 5 countries)
• Other 1 project in Malaysia

Total 147 projects in 16 partner countries

Underlined projects have started operation (91 projects)
Projects with * have been registered as JCM projects (42 projects)

FY2019　Cities joining the city to city collaboration program by MOEJ

1. **Ho Chi Minh City (Vietnam) – Osaka City**
   City-to-City Collaboration Project between Ho Chi Minh City and Osaka City
2. **Bali City (Indonesia) – Toyama City**
   Support on Tourism Future City of Bali Province through City-to-City Collaboration
3. **Hlegu township,Yangon（Myanmar) – Kitakyushu City**
   Low carbonization in smart city development project in Yangon Region
4. **Iskandar Development Area(Malaysia) – Kitakyushu City**
   Promotion of Low Carbon Society in Iskandar Regional Area
5. **Bangkok and Laem Chabang (Thailand) – Yokohama City**
   ports in Thailand to reduce GHG emission by advancing modal shift and enhancing terminal efficiency
6. **Yangon city (Myanmar) – Kawasaki City**
   Support on Low Carbon Mega Food Park through City-to-City Collaboration
7. **Can Tho city（Vietnam） – Hiroshima pref. government**
   Biomass power generation project using milled rice husks for compressed solid fuel
8. **Sagaing Region（Myanmar） – Fukushima City**
   Promotion project of low-carbon regional development in Sagaing Region
9. **Rokan Hulu Regency（Indonesia） – Kawasaki City**
   Project to Promote Circular Economy for Palm Industry in Riau Province Region
10. **Kuala Lumpur City（Malaysia） – Tokyo Metropolitan Government**
    Project developing a policy framework for building energy efficiency through city to city collaboration between Kuala Lumpur Government and Tokyo Metropolitan Government

Reference:
Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

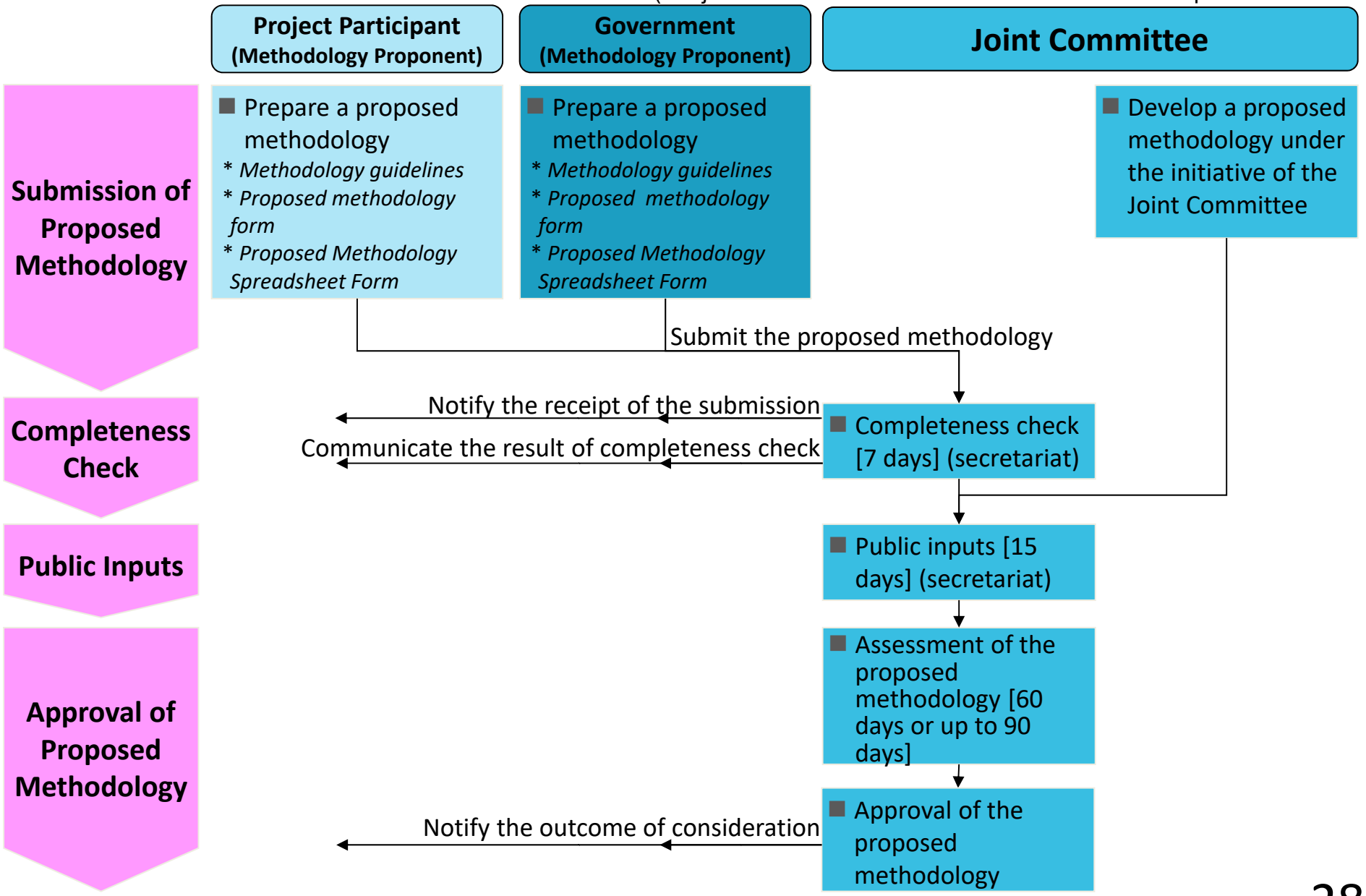
Necessary documents for the JCM

(Subject to further consideration and discussion with partner countries)

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

Methodology Development Procedure of the JCM

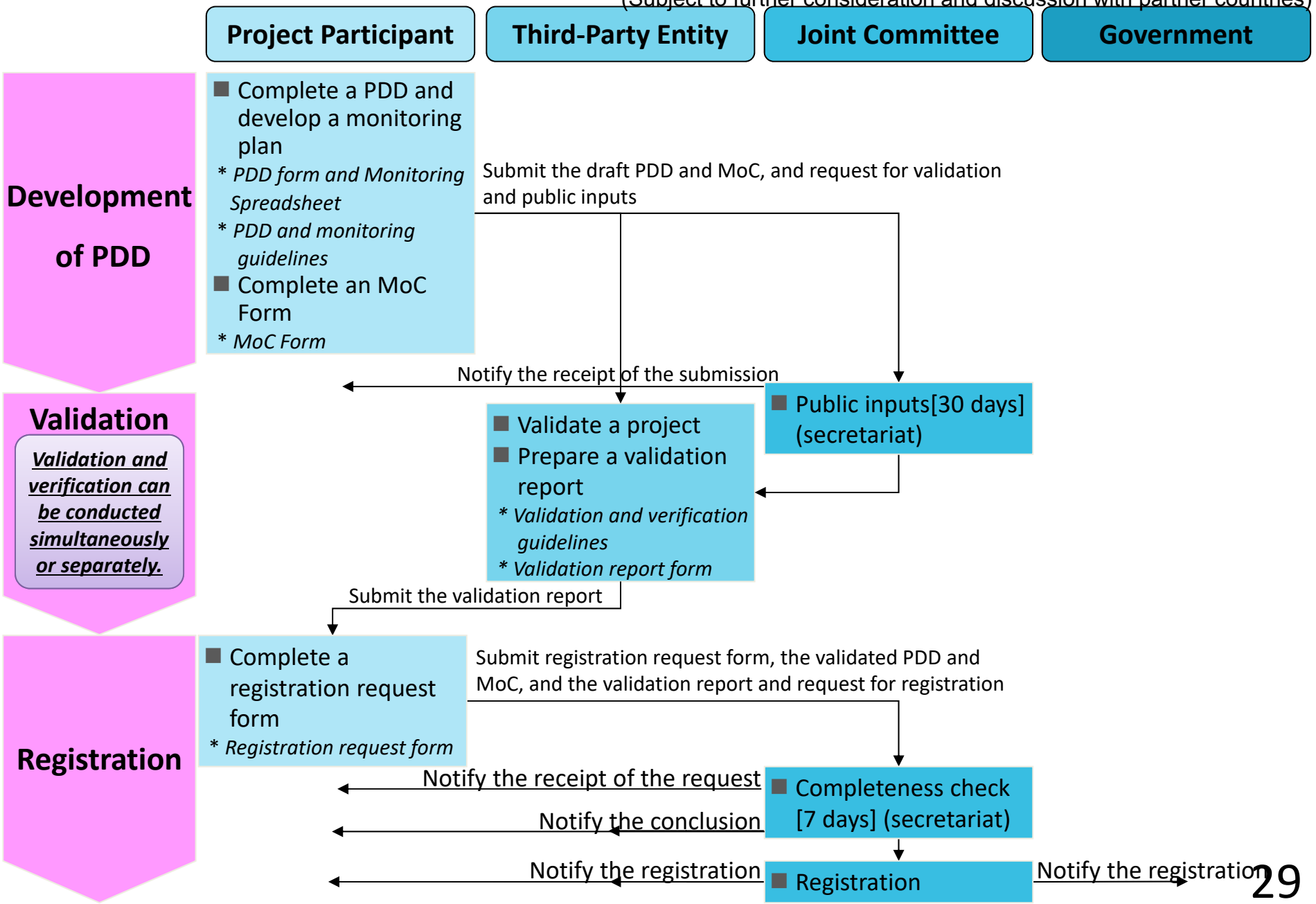
(Subject to further consideration and discussion with partner countries)



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

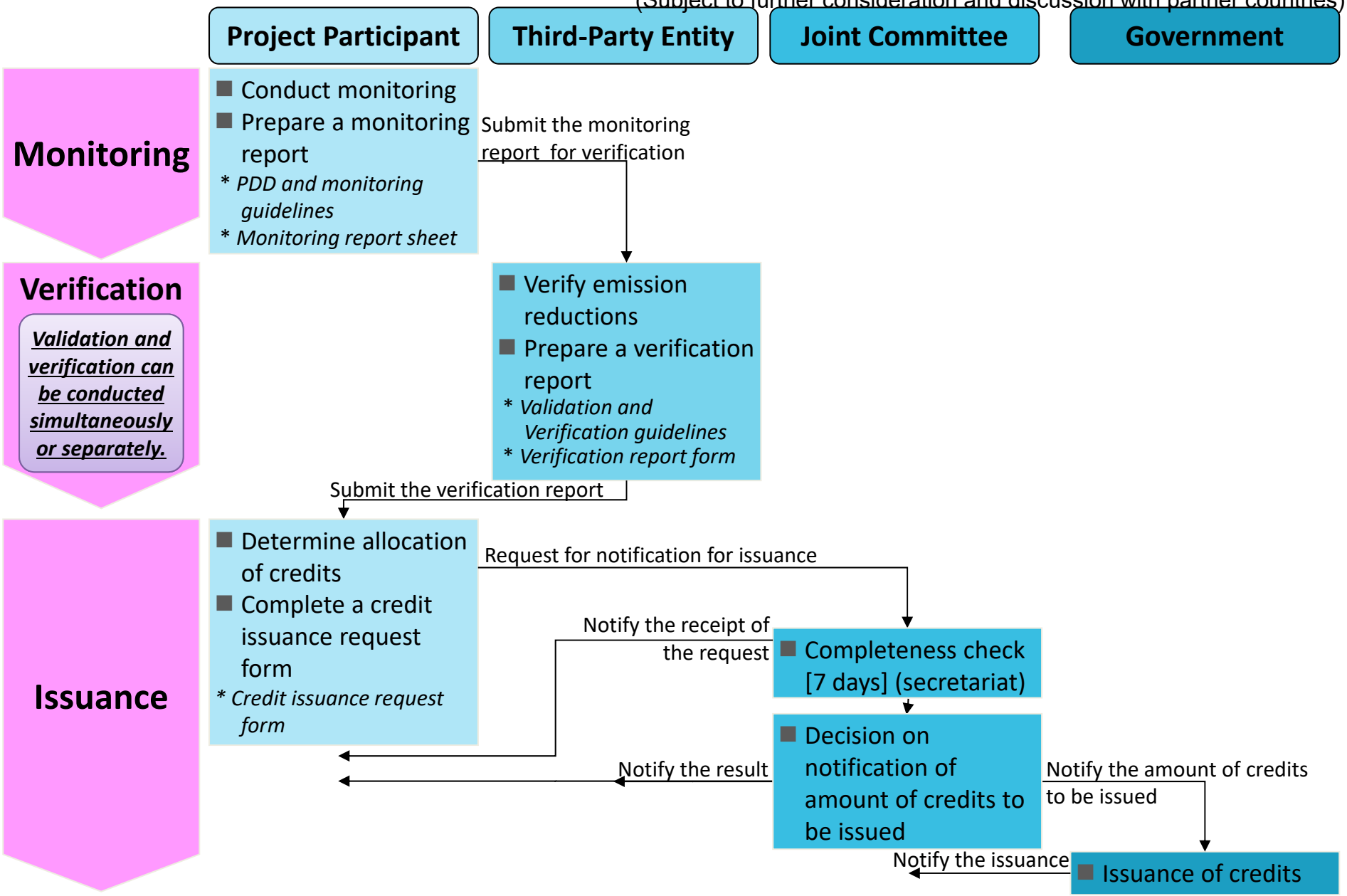
Registration & Issuance Procedure of the JCM (1/2)

(Subject to further consideration and discussion with partner countries)



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

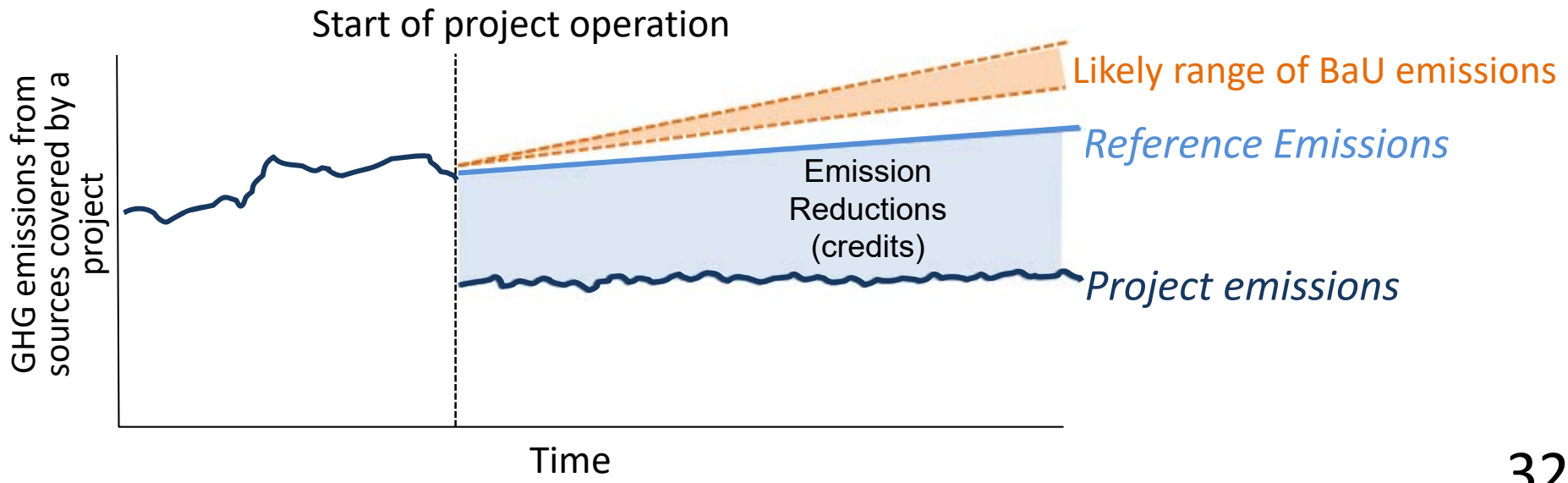
- The JC may establish panels and appoint external experts to assist part of its work.

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)

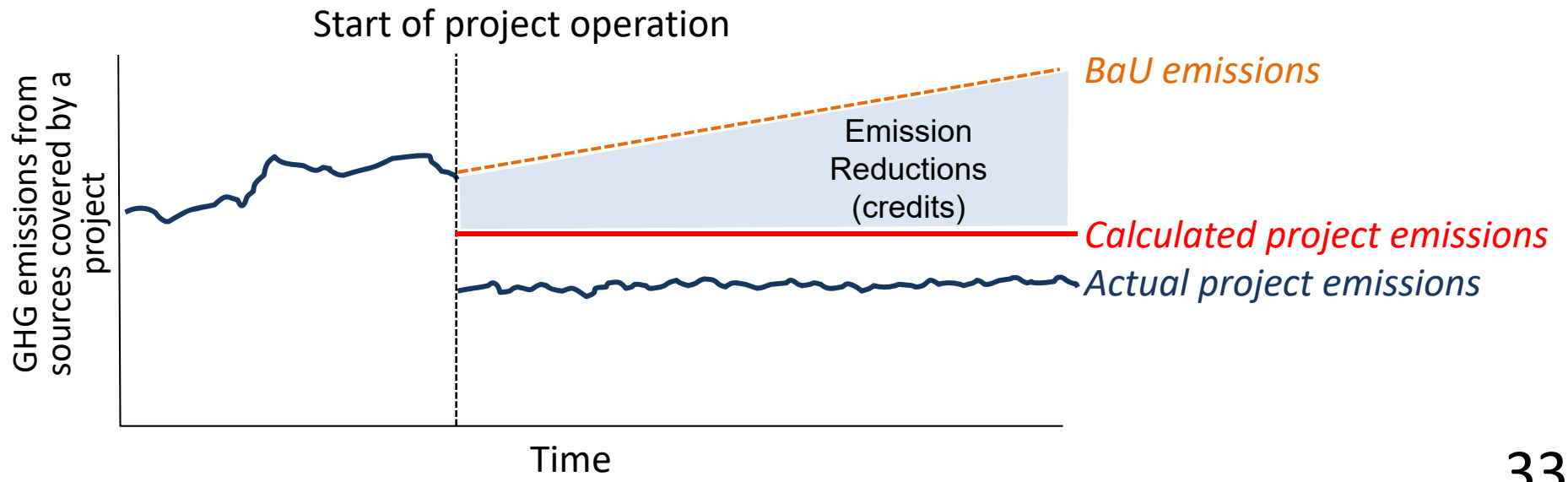
- In the JCM, emission reductions to be credited are defined as the difference between "reference emissions" and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the 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	• A “check list” will allow easy determination of eligibility of a proposed project under the JCM and applicability of JCM methodologies to the project.
Data (parameter)	• List of parameters will allow project participants to determine what data is necessary to calculate GHG emission reductions/removals with JCM methodologies. • Default values for specific country and sector are provided beforehand.
Calculation	• Premade spreadsheets will allow GHG emission reductions/removals to be calculated automatically by inputting relevant values for parameters, in accordance with methodologies.

Basic concept of Eligibility criteria in JCM methodology

(Subject to further consideration and discussion with 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.

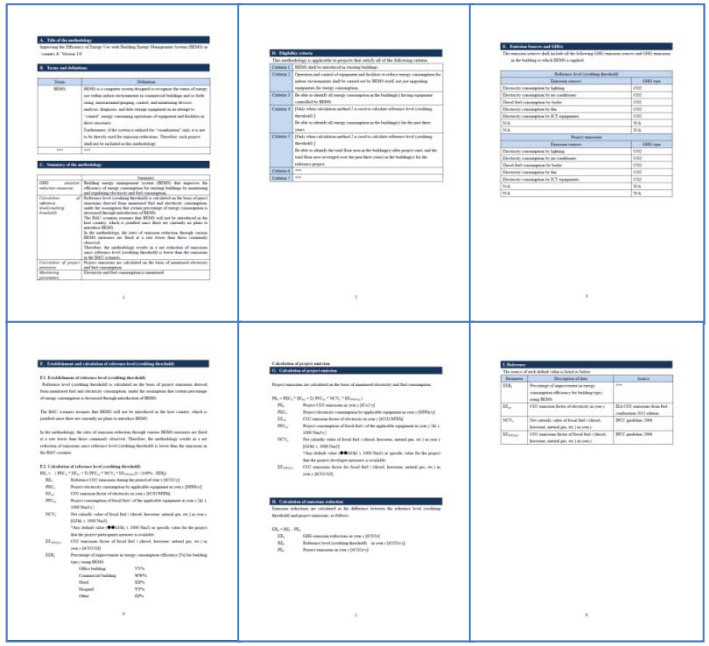
- Existence of historical data for *x* year(s)
- Electricity generation by *xx* (e.g. PV, wind turbine) connected to the grid
- Retrofit of the existing boiler

Overview of JCM Methodology, Monitoring Plan and Monitoring Report

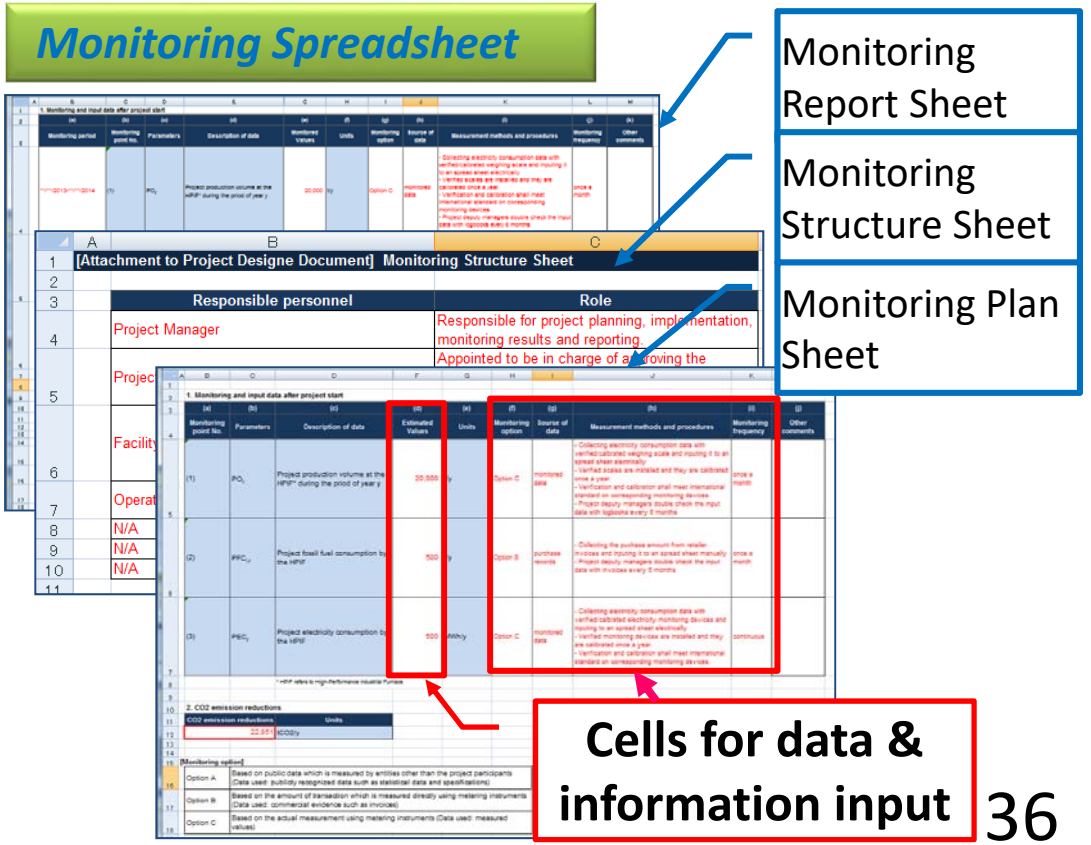
(Subject to further consideration and discussion with partner countries)

- 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



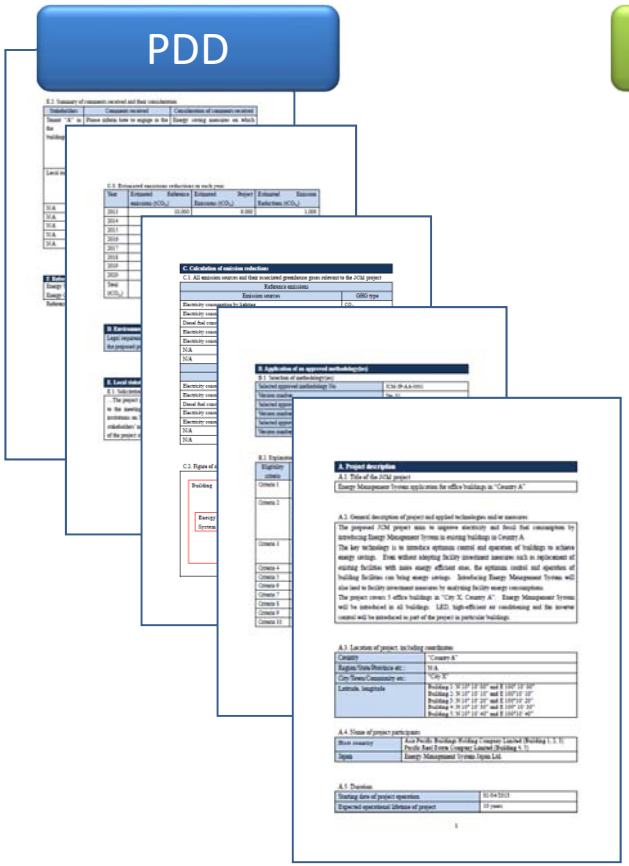
Monitoring Spreadsheet

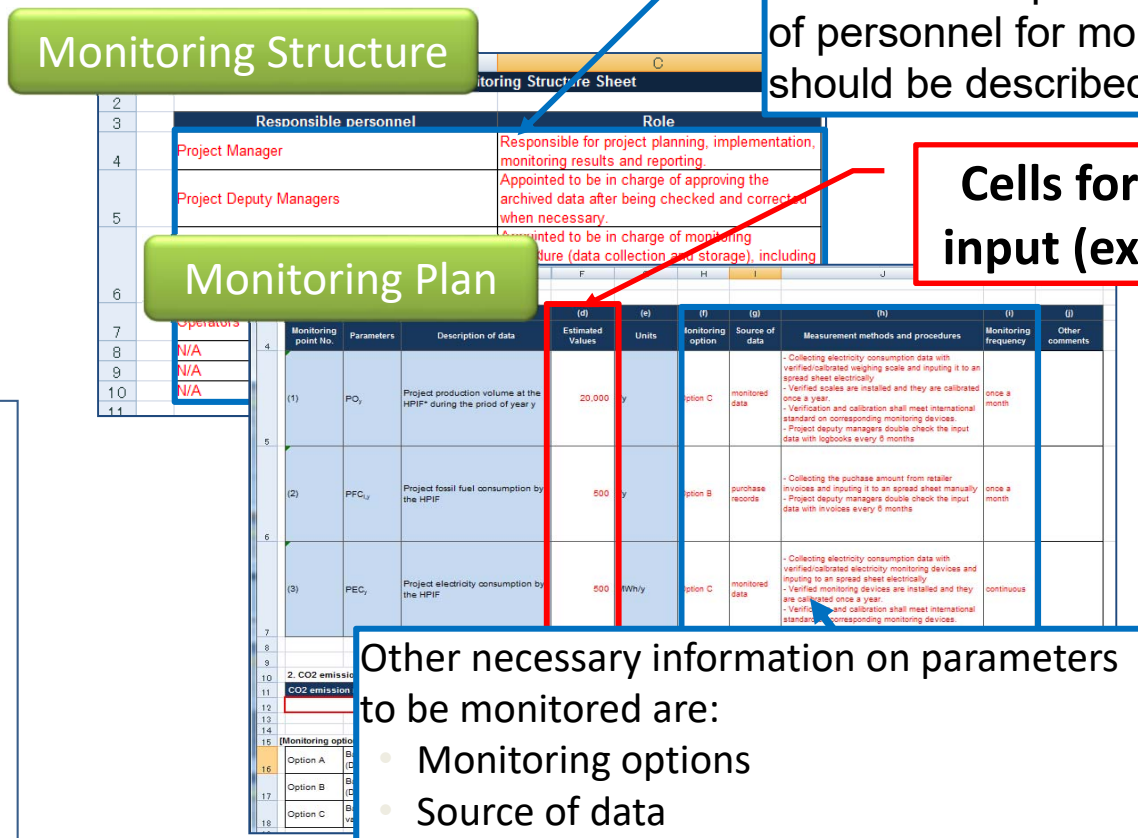


PDD and Monitoring Plan

(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.





Other necessary information on parameters to be monitored are:

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

Possible Contents of the JCM PDD

(Subject to further consideration and discussion with partner countries)

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

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

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

D. Environmental impact assessment

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

F. References

Annex

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

Monitoring Report

(Subject to further consideration and discussion with 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 Report

Monitoring period

Cells for data input (ex post)

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

* HPIF refers to High-Performance Industrial Furnace.

2. CO2 emission reductions

CO2 emission reductions	Units
22,851	tCO2/y

[Monitoring option]

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

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

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