

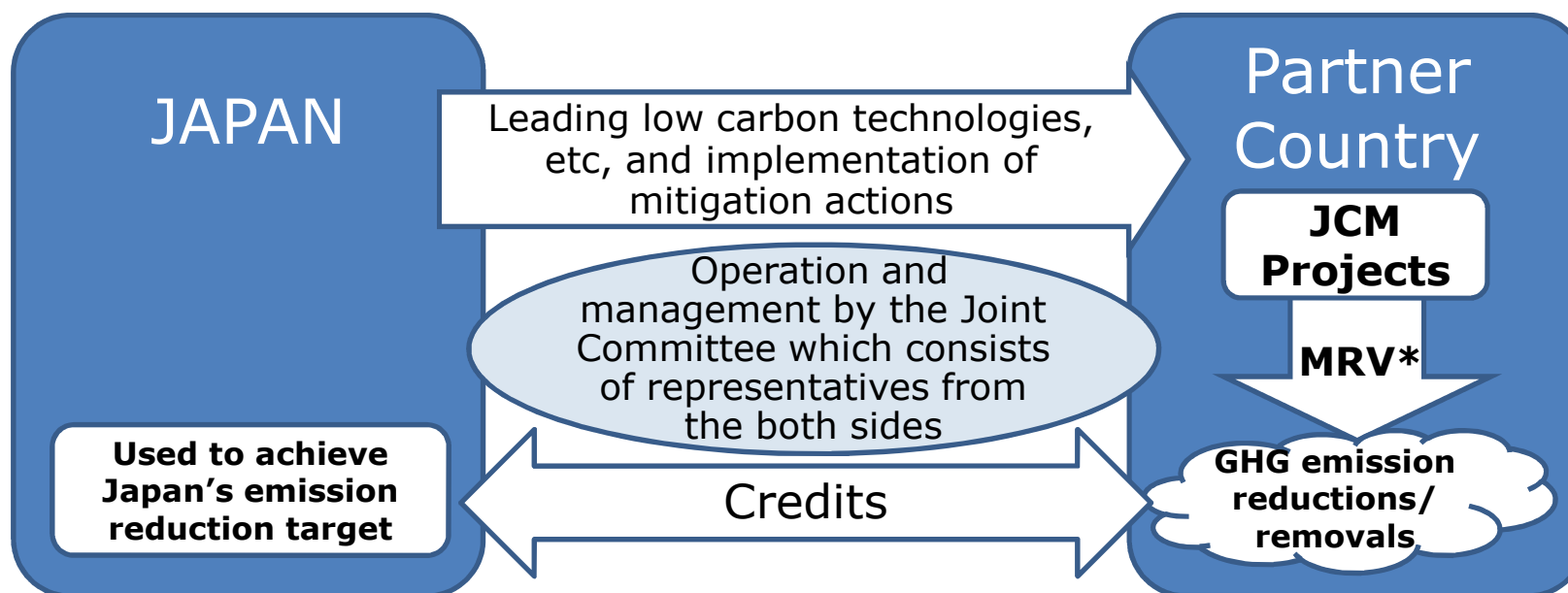
Recent Development of The Joint Crediting Mechanism (JCM)

July 2018
Government of Japan

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

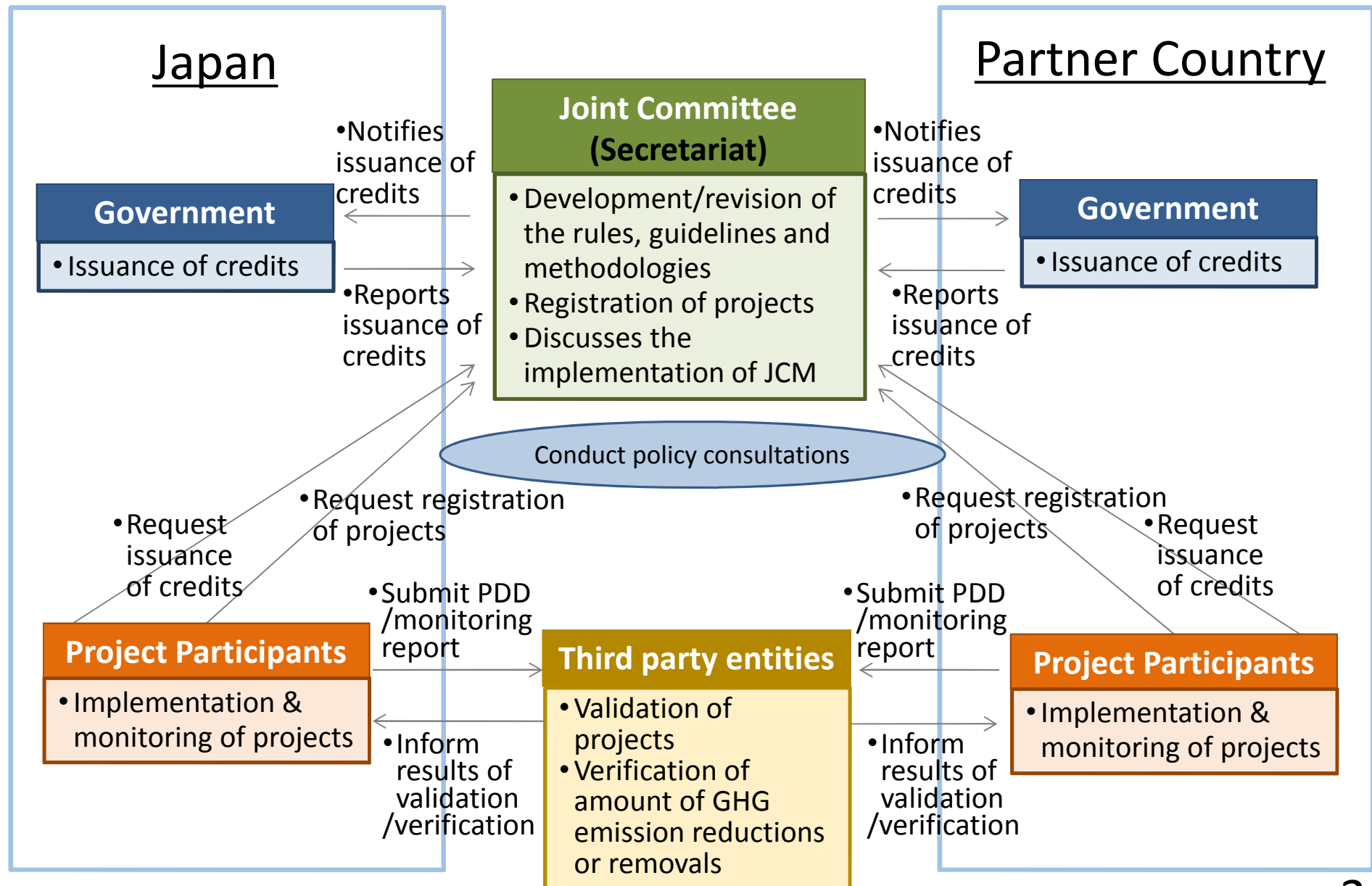
Basic Concept of the JCM

- 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



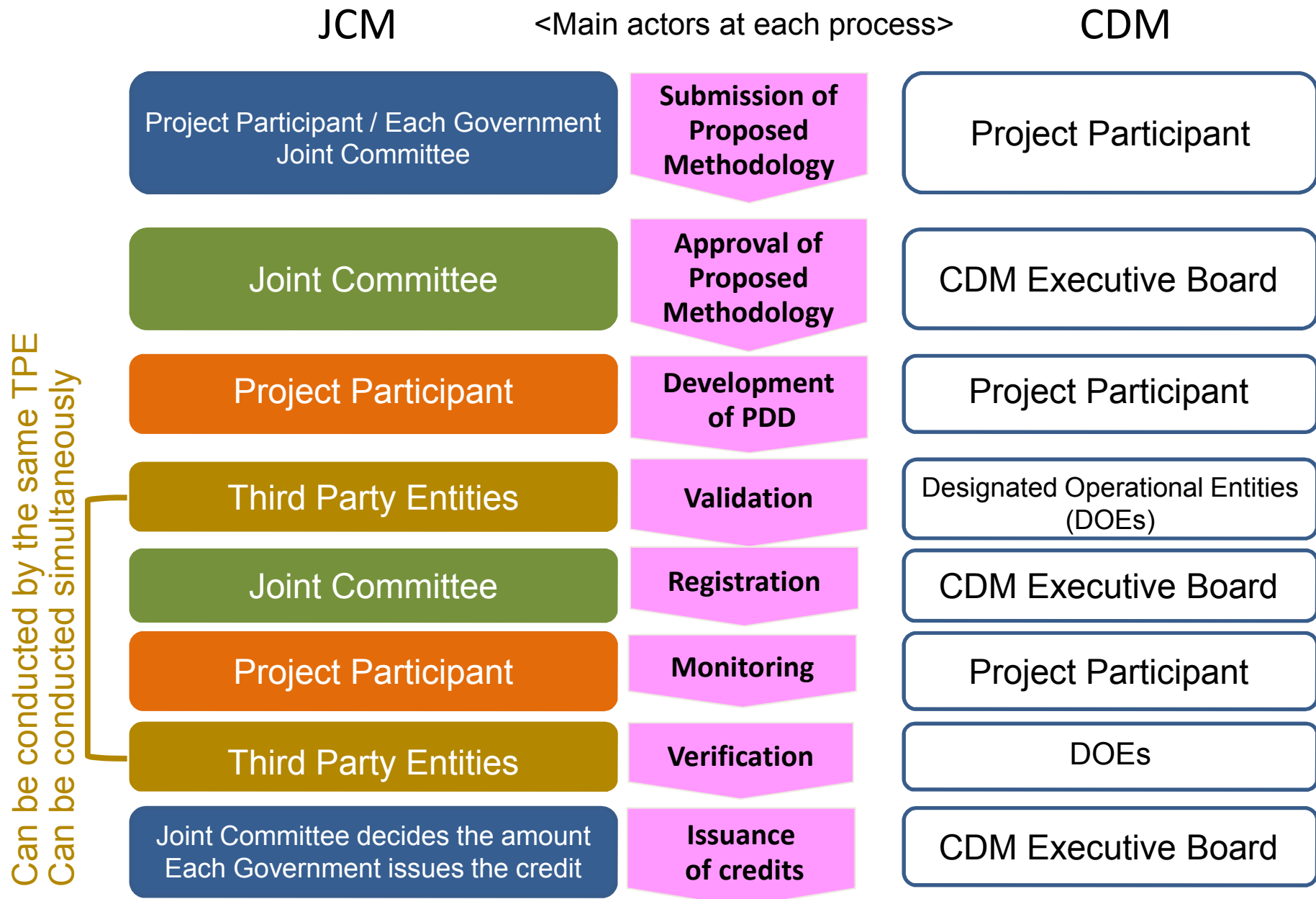
The role of the Joint Committee and each Government

- 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

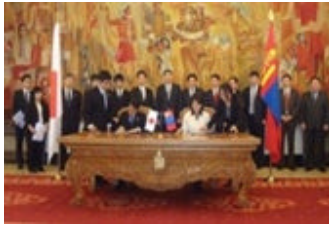
- (1) The JCM starts its operation as a non-tradable credit type mechanism.
- (2) Both Governments continue consultation for the transition to a tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.
- (3) The JCM aims for concrete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



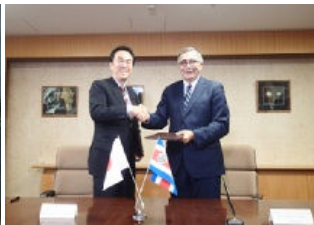
Viet Nam
Jul. 2, 2013
(Hanoi)



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)



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

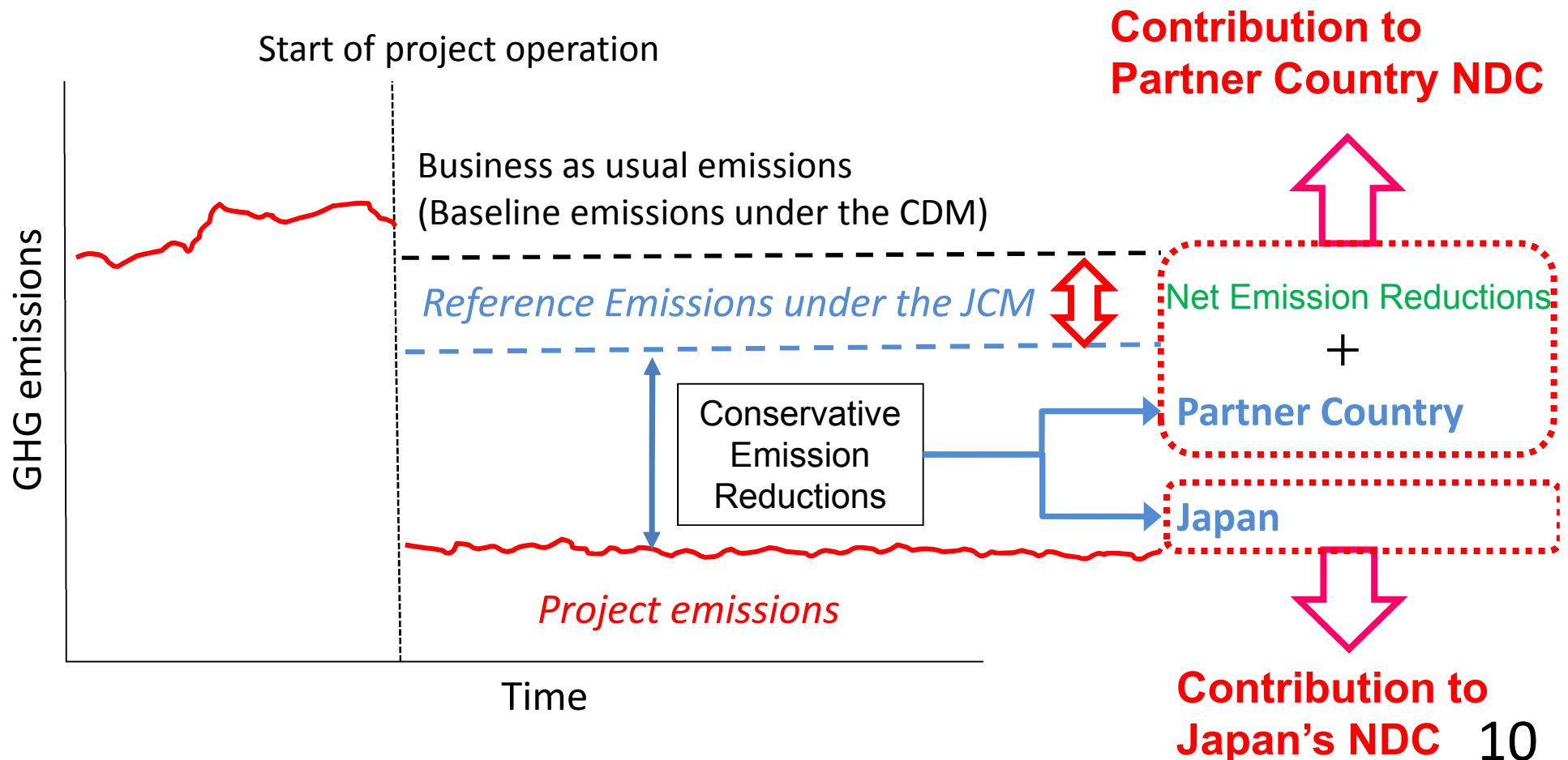
GHG emissions and removals

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-CO₂

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 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

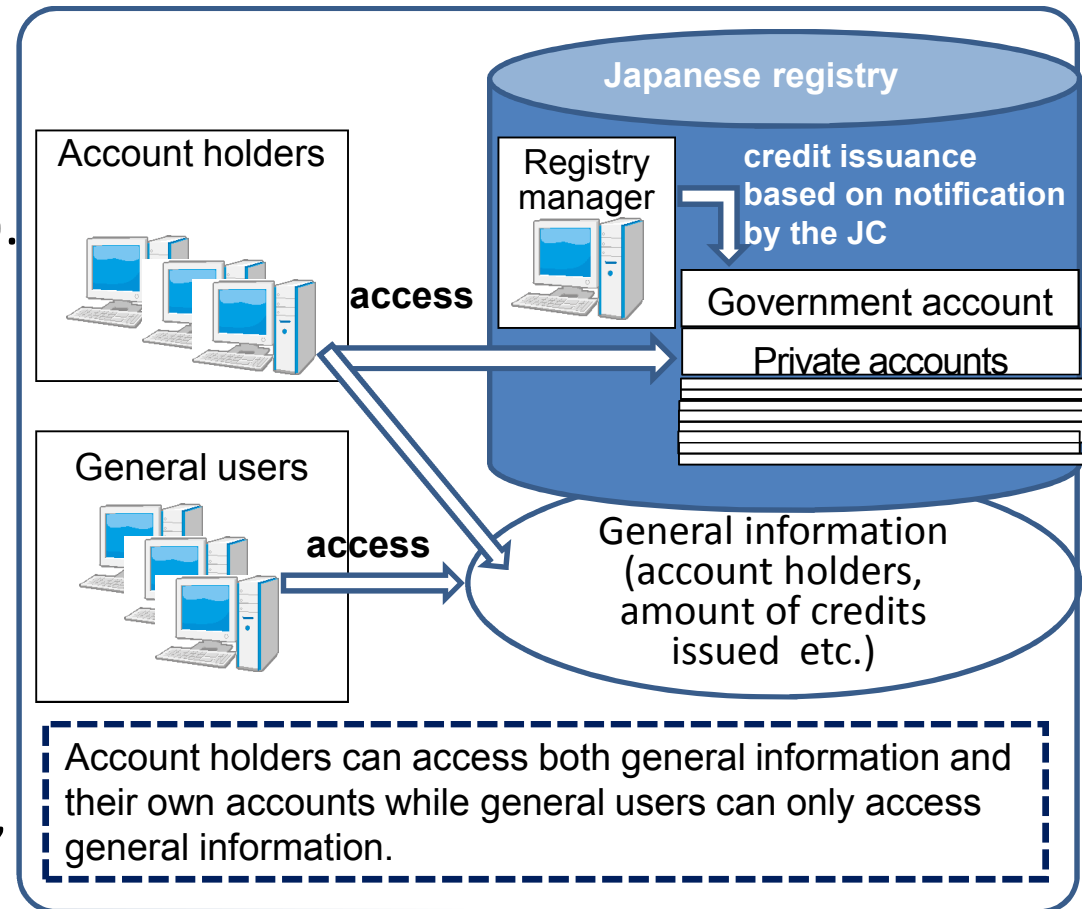
Kyoto Protocol units ^d (kt CO ₂ eq)										Other units ^{d,e} (kt CO ₂ eq)			
AAUs		ERUs		CERs		tCERs		lCERs		Units from market-based mechanisms under the Convention		Units from other market-based mechanisms	
20XX-3	20XX-2	20XX-3	Year X-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	20XX-2	20XX-3	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

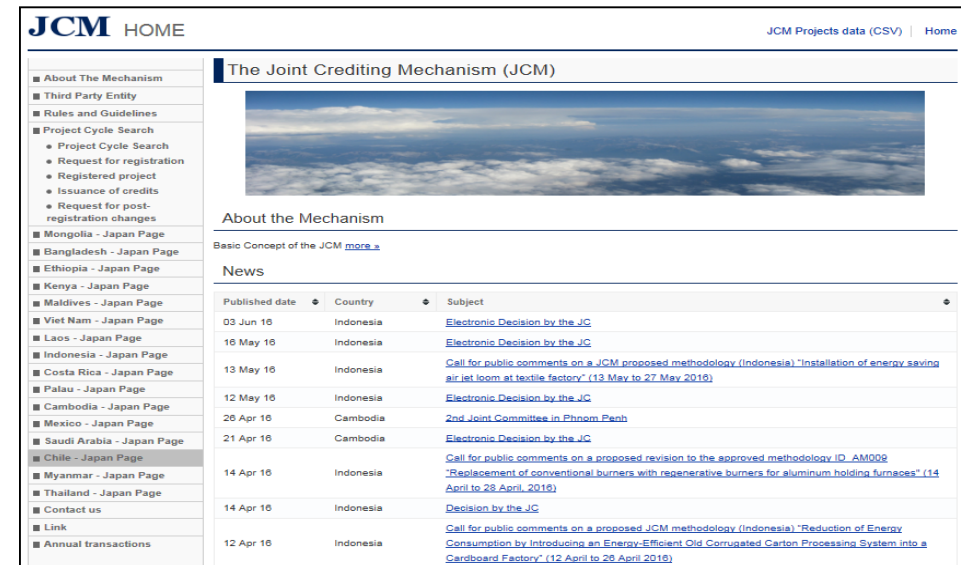


Image of the general information page



Image of the individual JCM Partner countries-Japan page

Progress of the JCM in each partner country as of July 18 2018

Partner countries	Start from	No. of JC	No. of registered projects	No. of approved methodologies	Pipeline (JCM Financing Programme & Demonstration Projects in FY 2013-2018)
Mongolia	Jan 2013	5	5	3	8
Bangladesh	Mar 2013	4	1	3	5
Ethiopia	May 2013	3		3	2
Kenya	Jun 2013	3		3	3
Maldives	Jun 2013	3	1	1	2
Viet Nam	Jul 2013	6	5	9	21
Lao PDR	Aug 2013	3	1	1	4
Indonesia	Aug 2013	8	13	16	33
Costa Rica	Dec 2013	2		3	2
Palau	Apr 2014	5	3	1	4
Cambodia	Apr 2014	4	1	2	6
Mexico	Jul 2014	2		1	5
Saudi Arabia	May 2015	2		1	1
Chile	May 2015	2		1	1
Myanmar	Sep 2015	2		1	6
Thailand	Nov 2015	4	4	7	26
Philippines	Jan 2017	1			8
Total	17	59	34	56	137

16

Registered Projects (1/4)

No.	Country	Project Title	Registration Date	Emission Reductions (Average)
MN001	Mongolia	Installation of High-Efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	30 Jun 15	92
MN002	Mongolia	Centralization of Heat Supply System by Installation of High-Efficiency Heat Only Boilers in Bornuur soum Project	30 Jun 15	206
MN003	Mongolia	Installation of 2.1MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb	26 May 17	2,106
MN004	Mongolia	10MW Solar Power Project in Darkhan City	26 May 17	11,221
MN005	Mongolia	A HIGH EFFICIENCY AND LOW LOSS POWER TRANSMISSION AND DISTRIBUTION SYSTEM IN MONGOLIA	16 Nov 17	467
BD002	Bangladesh	Installation of High Efficiency Centrifugal Chiller for Air Conditioning System in Clothing Tag Factory in Bangladesh	10 Jan 18	485
MV001	Maldives	Solar Power on Rooftop of School Building Project	15 Jul 18	129
VN001	Viet Nam	Eco-Driving by Utilizing Digital Tachograph System	04 Aug 15	292
VN002	Viet Nam	Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam	30 Nov 15	515

Registered Projects (2/4)

No.	Country	Project Title	Registration Date	Emission Reductions (Average)
VN003	Viet Nam	Low carbon hotel project in Vietnam: Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	15 May 16	272
VN004	Viet Nam	Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	15 May 16	610
VN005	Viet Nam	Introduction of High Efficiency Air-conditioning in Hotel	10 Oct 17	792
LA001	Laos	Lao PDR Energy Efficient Datacenter Project (LEED)	31 Jul 17	567
ID001	Indonesia	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller	31 Oct 14	114
ID002	Indonesia	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	29 Mar 15	120
ID003	Indonesia	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	29 Mar 15	21
ID004	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang, West Java	24 Mar 16	176
ID005	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)	24 Mar 16	145

Registered Projects (3/4)

No.	Country	Project Title	Registration Date	Emission Reductions (Average)
ID006	Indonesia	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	03 Jun 16	115
ID008	Indonesia	Introducing double-bundle modular electric heat pumps at AXIA SOUTH CIKARANG Tower 2	10 Feb 17	166
ID009	Indonesia	Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller	04 Dec 17	325
ID011	Indonesia	Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory in Bekasi, West Java	22 Dec 17	17,822
ID012	Indonesia	GHG emission reductions through utility facility operation optimization system for refineries in the Republic of Indonesia	10 Jul 18	20,000
ID013	Indonesia	Power generation by waste heat recovery in the PT Semen Indonesia (Persero) Tbk factory in Tuban	10 Jul 18	132,500
ID014	Indonesia	Energy saving by optimum operation at an oil refinery	10 Jul 18	1,275
ID016	Indonesia	Installation of Tribrid System to mobile communication's Base Transceiver Stations in Republic of Indonesia	10 Jul 18	359

Registered Projects (4/4)

No.	Country	Project Title	Registration Date	Emission Reductions (Average)
PW001	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States	21 Apr 15	227
PW002	Palau	Small Scale Solar Power Plants for Schools in Island States	12 Jul 16	108
PW003	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States II	12 Jul 16	315
KH001	Cambodia	Introduction of Ultra-lightweight Solar Panels for Power Generation at International School	12 Mar 18	99
TH001	Thailand	GHG emission reductions through utility facility operation optimization system for refineries in the Republic of Indonesia	21 Aug 17	440
TH002	Thailand	Power generation by waste heat recovery in the PT Semen Indonesia (Persero) Tbk factory in Tuban	20 Apr 18	253
TH003	Thailand	Energy saving by optimum operation at an oil refinery	20 Apr 18	3,327
TH004	Thailand	Installation of Tribrid System to mobile communication's Base Transceiver Stations in Republic of Indonesia	20 Apr 18	324

Approved Methodologies (1/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
MN_AM001	Mongolia	Energy distribution	Installation of energy-saving transmission lines in the Mongolian Grid	20 Feb 14	Hitachi, Ltd.
MN_AM002	Mongolia	Energy industries	Replacement and Installation of High Efficiency Heat Only Boiler (HOB) for Hot Water Supply Systems	28 Jan 15	Suuri-Keikaku CO., LTD., Climate Experts LTD.
MN_AM003	Mongolia	Energy industries	Installation of Solar PV System	30 Jan 17	Institute for Global Environmental Strategies
BD_AM001	Bangladesh	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	15 Mar 18	Nippon Koei Co., Ltd.
BD_AM002	Bangladesh	Energy industries	Installation of Solar PV System	16 Oct 17	Institute for Global Environmental Strategies
BD_AM003	Bangladesh	Energy demand	Energy efficiency improvement through the introduction of energy efficient air jet looms in textile industry	16 Oct 17	Toyota Tsusho Corporation; Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
ET_AM001	Ethiopia	Energy industries	Electrification of communities using Micro hydropower generation	03 Apr 16	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
ET_AM002	Ethiopia	Energy industries	Electrification by photovoltaic power generation in Ethiopia	21 Mar 17	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
ET_AM003	Ethiopia	Energy industries	Introduction of Biomass Combined Heat and Power Plant	21 Mar 17	Pacific Consultants Co., Ltd.

Approved Methodologies (2/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
KE_AM001	Kenya	Energy industries	Electrification of communities using Micro hydropower generation	03 Feb 16	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
KE_AM002	Kenya	Energy industries	Installation of Solar PV System	23 Mar 17	Pacific Consultants Co., Ltd.
KE_AM003	Kenya	Energy industries	Installation of Run-of-river Small Hydropower Generation Plant	23 Mar 17	Pacific Consultants Co., Ltd.
MV_AM001	Maldives	Energy industries	Displacement of Grid and Captive Genset Electricity by Solar PV System	25 Mar 15	Pacific Consultants Co., Ltd.
VN_AM001	Viet Nam	Transport	Eco-Driving by Utilizing Digital Tachograph System	20 Oct 16	Nippon Express Co., Ltd, Nittsu Research Institute and Consulting, Inc., Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
VN_AM002	Viet Nam	Energy demand	Introduction of Room Air Conditioners Equipped with Inverters	10 Oct 17	Joint Committee
VN_AM003	Viet Nam	Energy demand	Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	10 Oct 17	Joint Committee
VN_AM004	Viet Nam	Waste handling and disposal	Anaerobic digestion of organic waste for biogas utilization within wholesale markets	10 Oct 17	Joint Committee
VN_AM005	Viet Nam	Energy distribution	Installation of energy efficient transformers in a power distribution grid	03 Sep 15	YUKO-KEISO Co., Ltd., Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.

Approved Methodologies (3/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
VN_AM006	Viet Nam	Energy demand	Introduction of air conditioning system equipped with inverters	10 Oct 17	Joint Committee
VN_AM007	Viet Nam	Energy industries	Installation of Solar PV System	10 Oct 17	Institute for Global Environmental Strategies
VN_AM008	Viet Nam	Energy demand	Installation of LED lighting equipment to fishing boats	10 Oct 17	Stanley Electric Co., Ltd.
VN_AM009	Viet Nam	Energy demand	Installation of Container Formation Facility at Lead Acid Battery Factory	10 Oct 17	Hitachi Chemical Co., Ltd.
LA_AM001	Laos	Energy demand	Installation and operation of energy-efficient data center (DC) in the Lao PDR	14 Oct 16	Toyota Tsusho Corporation; Internet Initiative Japan Inc.; Mitsubishi UFJ Morgan Stanley Securities Co., Ltd
ID_AM001	Indonesia	Energy industries	Power Generation by Waste Heat Recovery in Cement Industry	19 May 14	JFE Engineering Corporation
ID_AM002	Indonesia	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	10 Nov 15	Nippon Koei Co., Ltd.
ID_AM003	Indonesia	Energy demand	Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Food Industry Cold Storage and Frozen Food Processing Plant	10 Nov 15	EX Research Institute Limited
ID_AM004	Indonesia	Energy demand	Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store	10 Nov 15	myclimate Japan Co., Ltd.

Approved Methodologies (4/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
ID_ AM005	Indonesia	Energy demand	Installation of LED Lighting for Grocery Store	10 Nov 15	myclimate Japan Co., Ltd.
ID_ AM006	Indonesia	Energy demand	GHG emission reductions through optimization of refinery plant operation in Indonesia	04 Dec 17	Yokogawa Electric Corporation
ID_ AM007	Indonesia	Energy demand	GHG emission reductions through optimization of boiler operation in Indonesia	18 May 15	Azbil Corporation
ID_ AM008	Indonesia	Energy demand	Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air conditioning load inside the store	10 Nov 15	myclimate Japan Co., Ltd.
ID_ AM009	Indonesia	Energy demand	Replacement of conventional burners with regenerative burners for aluminum holding furnaces	10 Feb 17	Toyotsu Machinery Corporation, Mizuho Information & Research Institute, Inc.
ID_ AM010	Indonesia	Energy demand	Introducing double-bundle modular electric heat pumps to a new building	06 Aug 15	Toyota Tsusho Corporation
ID_ AM011	Indonesia	Energy demand	Installation of energy saving air jet loom at textile factory	10 Feb 17	Toray Industries Inc.
ID_ AM012	Indonesia	Energy demand	Reduction of Energy Consumption by Introducing an Energy-Efficient Old Corrugated Carton Processing System into a Cardboard Factory	10 Feb 17	Nomura Research Institute, Ltd.
ID_ AM013	Indonesia	Energy industries	Installation of Solar PV System	04 Dec 17	Institute for Global Environmental Strategies

Approved Methodologies (5/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
ID_ AM014	Indonesia	Energy industries	Installation of Tribrid Systems to mobile communication's Base Transceiver Stations	04 Dec 17	KDDI corporation
ID_ AM015	Indonesia	Energy demand	Energy Saving by Introduction of High Efficiency Once-through Boiler	10 Jul 18	Nippon Koei Co., Ltd.
ID_ AM016	Indonesia	Energy industries	Installation of gas engine cogeneration system to supply electricity and heat to facility	10 Jul 18	Institute for Global Environmental Strategies
CR_ AM001	Costa Rica	Energy industries	Installation of Solar PV System	08 Sep 17	Institute for Global Environmental Strategies
CR_ AM002	Costa Rica	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	12 Mar 18	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, INC.
CR_ AM003	Costa Rica	Energy demand	Installation of Electric Heat Pump Type Water Heater for Hot Water Supply Systems	12 Mar 18	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, INC.
PW_ AM001	Palau	Energy industries	Displacement of Grid and Captive Genset Electricity by a Small-scale Solar PV System	20 Feb 15	Pacific Consultants Co., Ltd.
KH_ AM001	Cambodia	Energy demand	Installation of LED street lighting system with wireless network control	26 Apr 16	Minebea Co., Ltd. & Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
KH_ AM002	Cambodia	Energy industries	Installation of Solar PV System	04 Feb 17	Institute for Global Environmental Strategies

Approved Methodologies (6/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
MX_AM001	Mexico	Energy industries	Installation of Solar PV System	29 Dec 17	Institute for Global Environmental Strategies
SA_AM001	Saudi Arabia	Energy demand	Introduction of High Efficiency Electrolyzer in Chlor-Alkali Processing Plant	18 Oct 17	Thyssenkrupp Uhde Chlorine Engineers (Japan) Ltd.; Kanematsu Corporation
CL_AM001	Chile	Energy industries	Installation of Solar PV System	19 Dec 17	Institute for Global Environmental Strategies
MM_AM001	Myanmar	Energy industries	Power generation and avoidance of landfill gas emissions through combustion of municipal solid waste (MSW)	25 Jun 18	JFE Engineering Corporation
TH_AM001	Thailand	Energy industries	Installation of Solar PV System	23 Aug 16	Pacific Consultants Co., Ltd.
TH_AM002	Thailand	Energy demand	Energy Saving by Introduction of Multi-stage Oil-Free Air Compressor	21 Aug 17	Sony Corporate Services (Japan) Corporation
TH_AM003	Thailand	Energy demand	Energy Saving by Introduction of High Efficiency Centrifugal Chiller	21 Aug 17	Sony Corporate Services (Japan) Corporation
TH_AM004	Thailand	Energy demand	Installation of energy saving air jet loom at textile factory	21 Aug 17	Toray Industries Inc.
TH_AM005	Thailand	Energy industries	Energy Saving by Introduction of High Efficiency Non-Inverter Type Centrifugal Chiller	21 Aug 17	Nippon Koei Co., Ltd

Approved Methodologies (7/7)

No.	Country	Sectoral Scope	Methodology Title	Date of Approval	Methodology Proponent
TH_AM006	Thailand	Energy demand / Manufacturing industries	Installation of Displacement Ventilation Air Conditioning Unit in the Cleanroom of Semiconductor Manufacturing Factory	21 Aug 17	Sony Semiconductor Manufacturing Corporation
TH_AM007	Thailand	Energy industries	Power Generation by Waste Heat Recovery in Cement Industry	20 Apr 18	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

Programmes by Government of Japan

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

JCM Promotion Scheme by METI

JCM Demonstration Projects (Budget for FY2018: 1.3 billion yen)

- 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

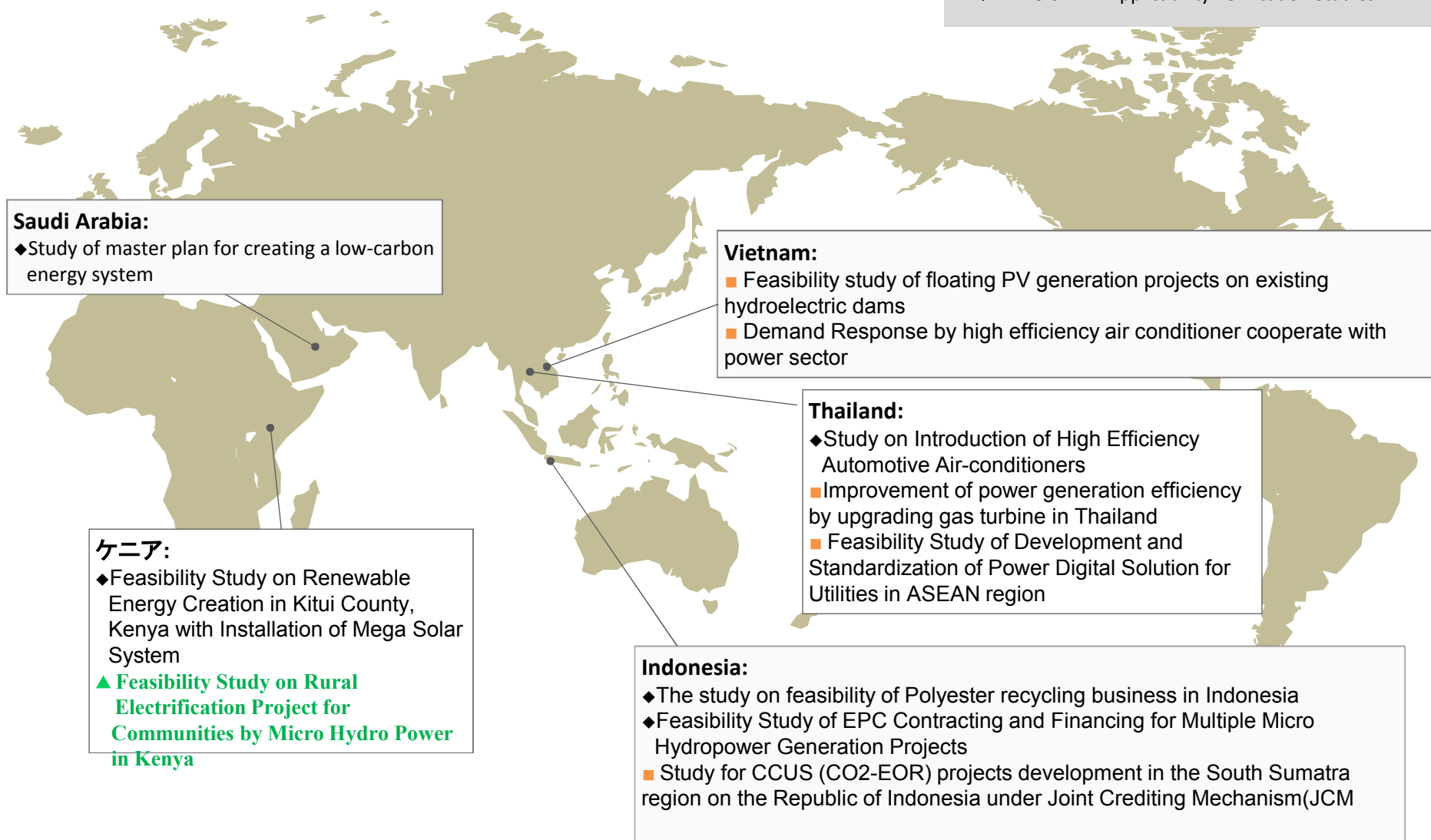
- By applying MRV methodology to the facility with low-carbon technologies that have already been installed or will certainly be installed in any JCM partner country; 1) to obtain verification by third party entity under the JCM; and 2) to conduct review and feedback on efficiency and applicability of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

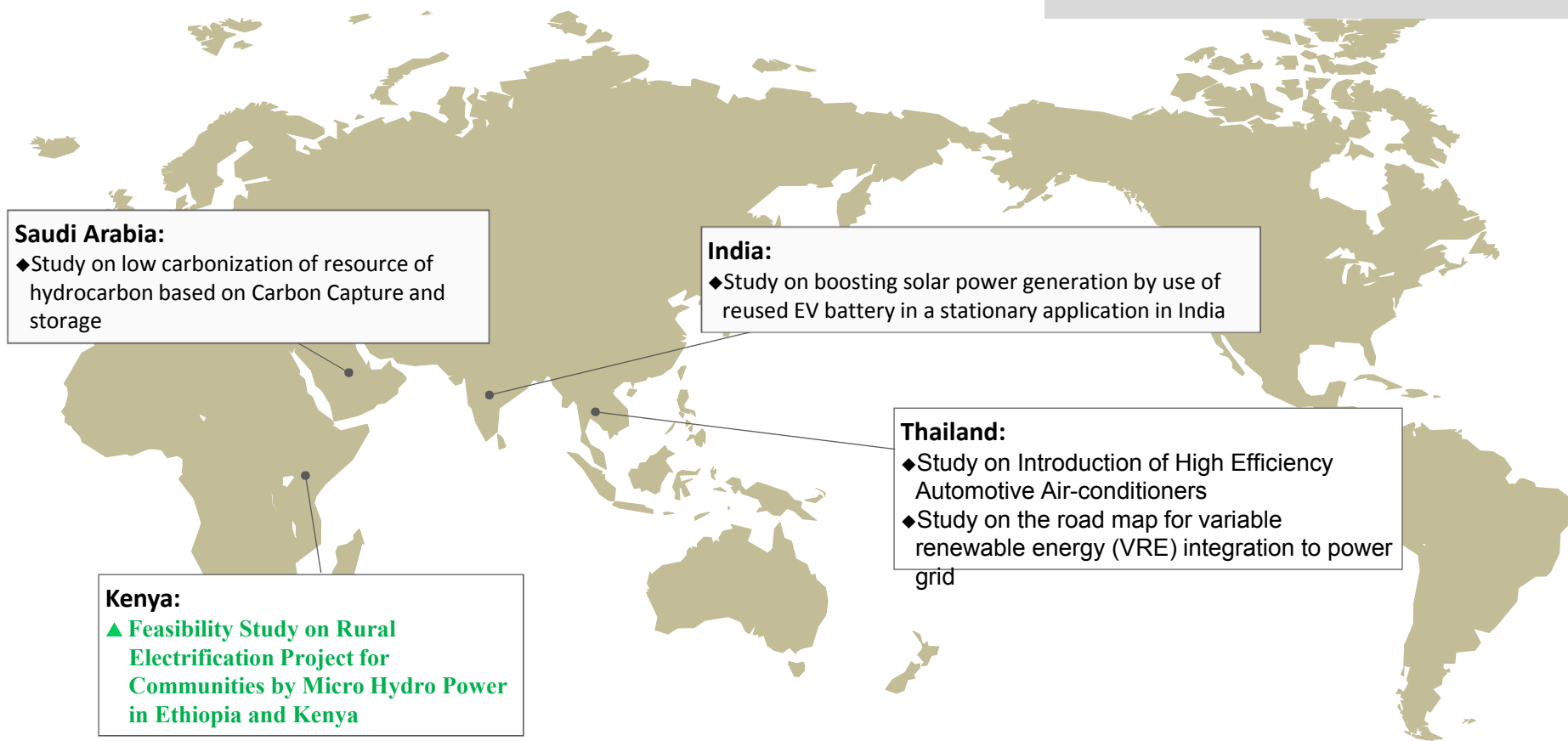
JCM Feasibility Studies, MRV Applicability and Verification Studies by METI & NEDO in FY2017

- ◆→ 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 FY2018

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



JCM Demonstration Projects by METI* (as of June 2018)

* Including NEDO and UNIDO

Mongolia:

- **High efficiency and low loss power transmission and distribution system (Hitachi)**
※since FY2013

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

Kenya, Ethiopia:

- **Rural Electrification Project for Communities by Micro Hydro Power in Ethiopia and Kenya (NTT Data Institute of Management consulting, Inc.)** ※since FY2012

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

※implemented by UNIDO (covering Kenya and Ethiopia)

Vietnam:

- **Energy saving by inverter air conditioner optimum operation at National Hospital (Mitsubishi Electric)** ※Jan 2014 - Jun 2017

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)**
※Jan 2014 - Feb 2018

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

- **Energy Saving and Work Efficiency Improvement Project by special LED Equipment with new technology, COB(Stanley Electric)**
※ Jan 2015 - Feb 2018

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

Lao PDR:

- **Lao PDR Energy efficient data center(LEED) (Toyota Tsusho Corporation, Internet Initiative Japan)** ※since FY2014

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

Indonesia:

- **Energy saving by optimum operation at Oil factory (Yokogawa Electric)**
※since FY2013

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

- **Utility facility operation optimization technology into Oil factory (Yokogawa)**
※since FY2013

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

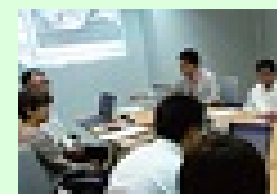
- **The low carbonization of mobile communication's BTS (Base Transceiver Station) by the Introduction of "TRIBRID system" (KDDI)** ※since FY2015
- Energy management system for BTS "TRIBRID system" will be installed at 22 locations in Off-grid and Poor-grid area.

Total: **10 projects** (6 countries)
Underlined one project in Mongolia, two projects in Vietnam, one project in Lao PDR were registered as JCM projects.

JCM Project Development & Outreach Programme by MOEJ

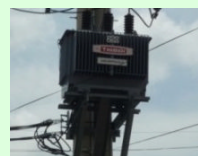
JCM Project development

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



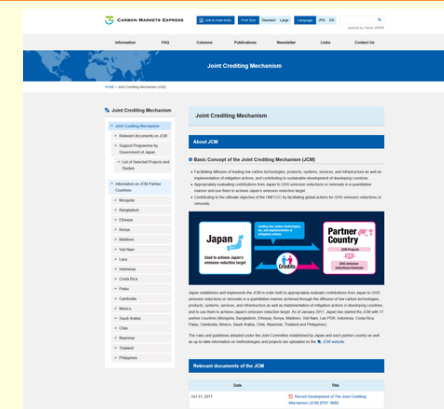
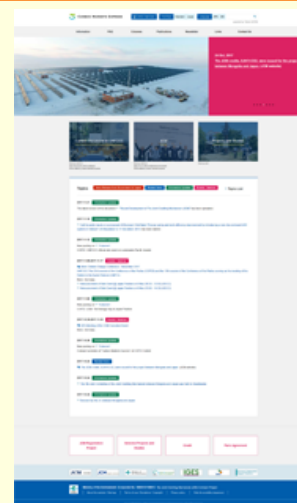
Types of Feasibility Studies (FS)

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



Outreach

- **Carbon Markets Express website** provides information on the latest updates on the JCM and on the relevant programme such as JCM promotion schemes by the Government of Japan.
<<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

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JCM Model Projects by MOE

The budget for projects starting from FY 2018 is **6.9 billion JPY (approx. USD 69million)** in total by FY2020

(1 USD = 100 JPY)

Finance part of an investment cost
(less than half)

Government of Japan

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

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

International consortiums
(which include Japanese entities)



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

Budget for FY2018

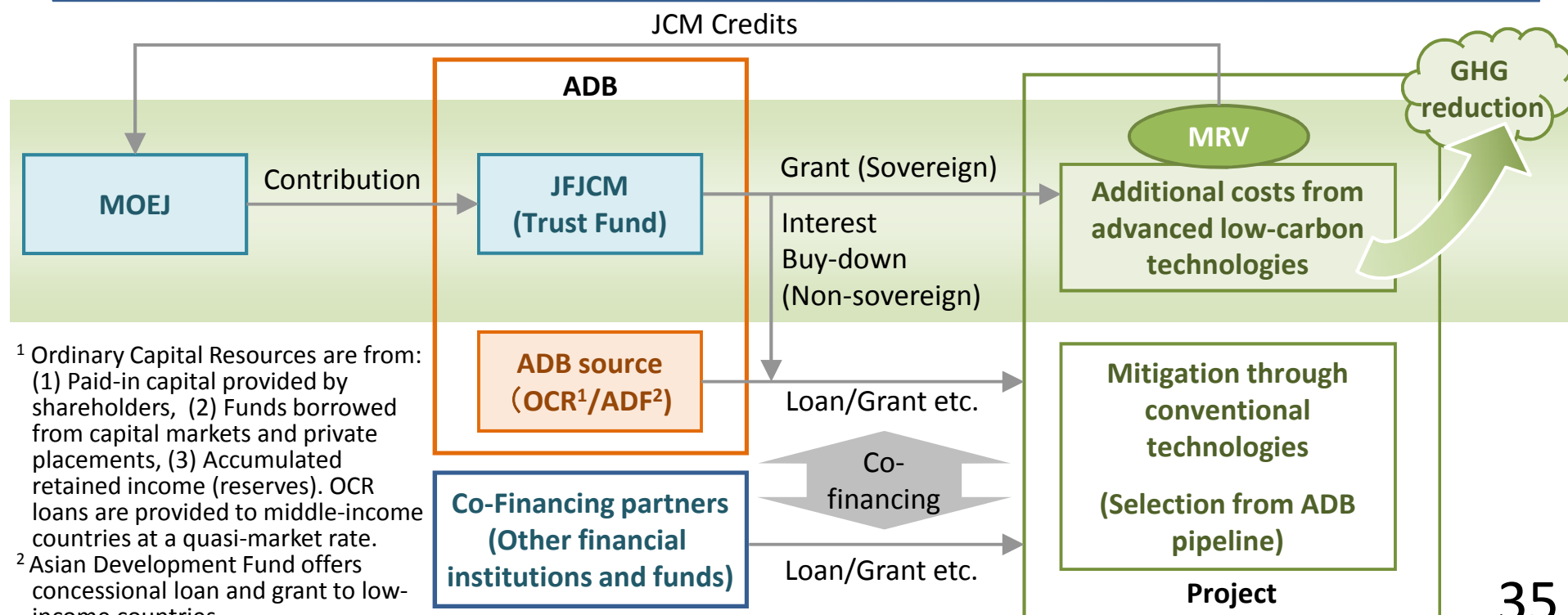
JPY 1 billion (approx. USD 10 million)

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



JCM F-gas Recovery and Destruction Model Project by MOE

【Draft budget for FY 2018】
40 million JPY (approx. 0.4
million USD) (1 USD = 100 JPY)

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

Government of Japan

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 (FY2013~2018) as of July 27, 2018

Thailand: 26 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
- 1.5MW Solar PV and EMS in Paint Factory
- Heat Recovery Heat Pump
- 27MW Solar PV
- Air-conditioning Control System
- Energy Saving Equipment in Port
- 25MW Solar PV in Industrial Park
- 1.0MW 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
- Co-generation in Fiber Factory
- 3.4MW Solar PV

Mongolia: 7 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

Viet Nam: 18 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
- Amorphous transformers 4
- Energy Saving Equipment in Brewery Factory
- High Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Raw Water Intake Pumps
- Amorphous transformers*
- Air-conditioning in Lens Factory
- 320kW Solar PV in Shopping Mall
- Air-conditioning Control System
- High Efficiency Water Pumps
- Amorphous transformers 3

Bangladesh: 5 projects

- Centrifugal Chiller
- 320kW PV-diesel Hybrid System
- Centrifugal Chiller*
- Loom at Weaving Factory
- 50MW Solar PV Power Plant

Saudi Arabia: 1 projects

- Electrolyzer in Chlorine Production Plant

Ethiopia: 1 projects

- Biomass CHP Plant

Kenya: 2 projects

- 6MW Hydropower Generation
- 1MW Solar PV at Salt Factory

Myanmar: 6 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

Maldives: 2 projects

- 190kW Solar Power on School Rooftop*
- Smart Micro-Grid System

Laos: 3 projects

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

Mexico: 5 projects

- 4.8MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 64MW Wind Farm
- 20MW Solar PV
- 30MW Solar PV

Cambodia: 6 projects

- LED Street Lighting
- Solar PV & Centrifugal Chiller
- Battambang Wastewater Treatment Project
- 200kW Solar PV at International School*
- Inverters for Distribution Pumps
- 1.5MW Solar PV

Palau: 4 projects

- 370kW Solar PV for Commercial Facilities*
- 150kW Solar PV for School*
- 440kW Solar PV for Commercial Facilities II*
- 0.4MW Solar PV for Supermarket

Costa Rica: 2 projects

- 5MW Solar PV
- Chiller and Heat Recovery System

Chile: 1 project

- 1MW Rooftop Solar PV

Philippines: 8 projects

- 15MW Hydro Power Plant
- 1.53MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV
- 4MW Solar PV
- 4MW Hydro Power Plant
- 1MW Rooftop Solar PV
- 2.5MW Rice Husk Power Generation
- 0.16MW Micro Hydro Power Plant

Indonesia: 30 projects

- Centrifugal Chiller at Textile Factory*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 20kW 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
- Centrifugal Chiller and Air-conditioning Control System
- 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
- 0.5MW Solar PV
- 10MW Hydro Power Plant
- CNG-Diesel Hybrid Public Bus
- LED Lighting to Sales Stores
- Gas Co-generation system
- 2.8MW Solar PV

- Model Project in FY 2013 (7 projects in 3 countries)
- Model Project in FY 2014 (12 projects in 5 countries)
- ADB Project in FY 2014 (1 project in 1 country)
- Model Project in FY 2015 (33 projects in 10 countries)
- Model Project in FY 2016 (35 projects in 10 countries)
- REDD+ Model Project (2 projects in 2 countries)
- Model Project in FY 2017 (19 projects in 8 countries)
- ADB Project in FY 2017 (1 Project in 1 country)
- Model Project in FY2018 (17 Projects in 9 countries)
- * Other 1 project in Malaysia

Total 127 projects in 17 partner countries

Underlined projects have started operation (73 projects, including 1 partially started projects)
Projects with * have been registered as JCM projects (27 projects)

FY2018 Cities joining the city to city collaboration program by MOEJ

1. **Quezon City (Philippines) – Osaka city**
 - Energy saving technologies, Solar PV system installation and retrofit of waste collection truck
2. **Bangkok and Laem Chabang (Thailand) – Yokohama city**
 - CO2 emission reduction and to become “Smart Ports”
3. **Davao city (Philippines) – Kitakyushu city**
 - Support for a development of local climate change action plan
4. **Phnom Penh city (Cambodia) – Kitakyushu city**
 - Low carbonization in transportation and green production fields
5. **Jakarta city (Indonesia) – Kawasaki City**
 - Green Building and Green Power Optimization
6. **Semarang city (Indonesia) – Toyama city**
 - Introduction of energy saving equipment in industry sector
7. **Yangon city (Myanmar) – Kawasaki city**
 - Utilization of energy and energy saving in wholesale market
8. **Batam city (Indonesia) – Kawasaki city**
 - Green Building and optimization of renewable energy utilization in Industrial Parks
9. **Ho Chi Minh (Vietnam) – Osaka city**
 - Promoting energy efficiency equipment in water supply system
10. **Bali City (Indonesia) – Toyama city**
 - Support on Tourism Future City
11. **Ayeyarwady Region , Sagaing Region (Myanmar) – Fukushima city**
 - Feasibility of low-carbon industrial area and promotion of activities
12. **Chiangmai Province (Thailand) – Kitakyushu city**
 - Project to accelerate low carbonization in newly industrial estate
13. **Hai Phong city (Vietnam) – Kitakyushu city**
 - Low carbonization project through Eco Park in Vietnam
14. **Mandalay (Myanmar) – Kitakyushu city**
 - To realize low carbonization in Mandalay region in the field of Waste & Energy



Reference: Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

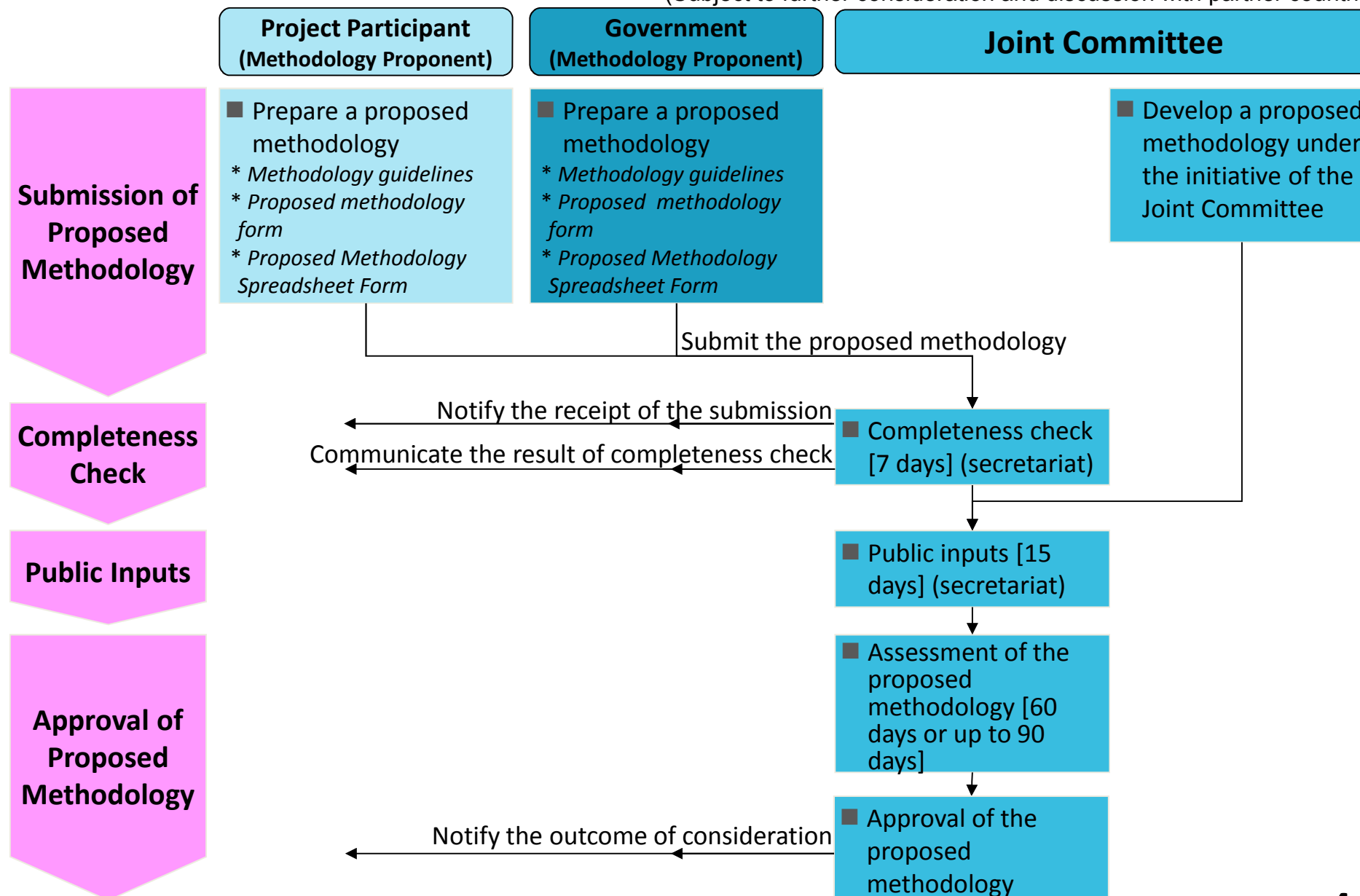
Necessary documents for the JCM

(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

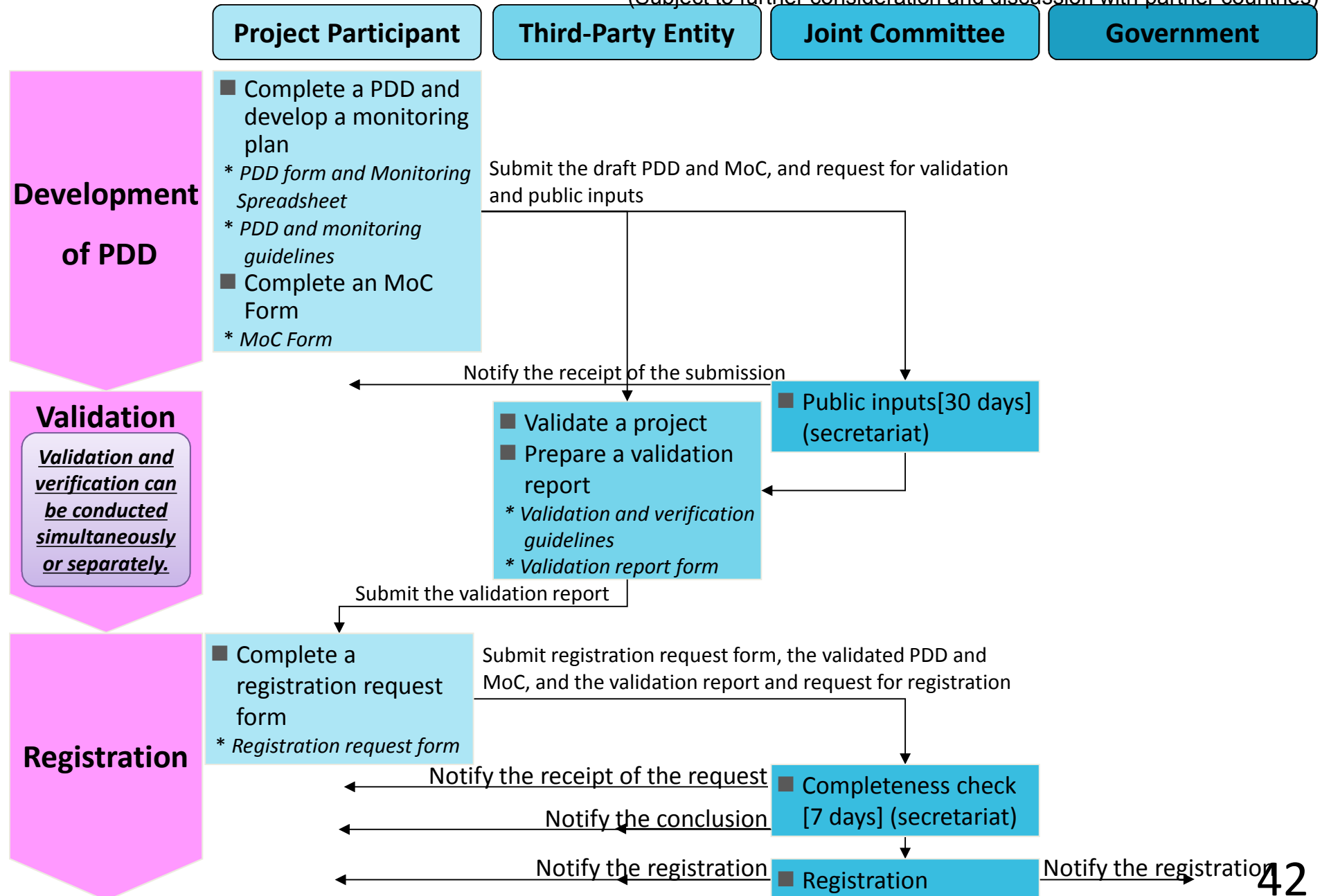
(Subject to further consideration and discussion with partner countries)



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

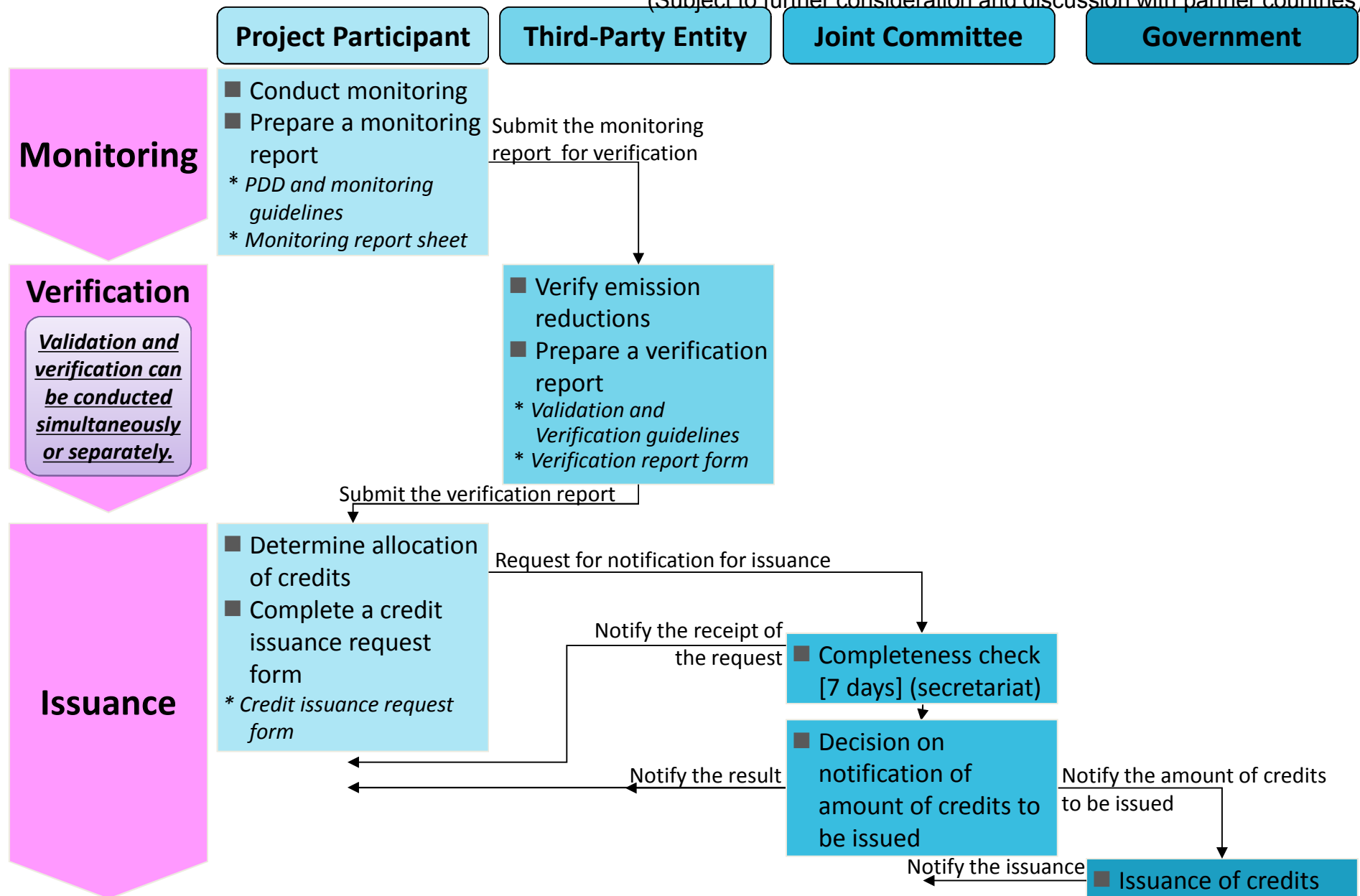
Registration & Issuance Procedure of the JCM (1/2)

(Subject to further consideration and discussion with partner countries)



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

(Subject to further consideration and discussion with partner countries)



Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with partner countries)

Members

- The Joint Committee (JC) consists of representatives from both Governments.
- Each Government designates members, which may not exceed [10].
- The JC has two Co-chairs to be appointed by each Government (one from the partner country and the other from Japan). Each Co-Chair can designate an alternate from members of the JC.

Decision making in the JC

- The JC meets no less than once a year and decision by the JC is adopted by consensus.
- The JC may adopt decisions by electronic means in the following procedure:
 - (a) The proposed decisions are distributed by the Co-Chairs to all members of the JC.
 - (b) The proposed decision is deemed as adopted when,
 - i) no member of the JC has provided negative assertion within [10] calendar days after distribution and both Co-Chairs have made affirmative assertion, or
 - ii) all members of the JC have made affirmative assertion.
- If a negative assertion is made by one of the JC members, the Co-Chairs take into account the opinion of the member and take appropriate actions.
- The JC may hold conference calls to assist making decisions by electronic means.

External assistance

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

Languages: English **Secretariat:** The secretariat services the JC.

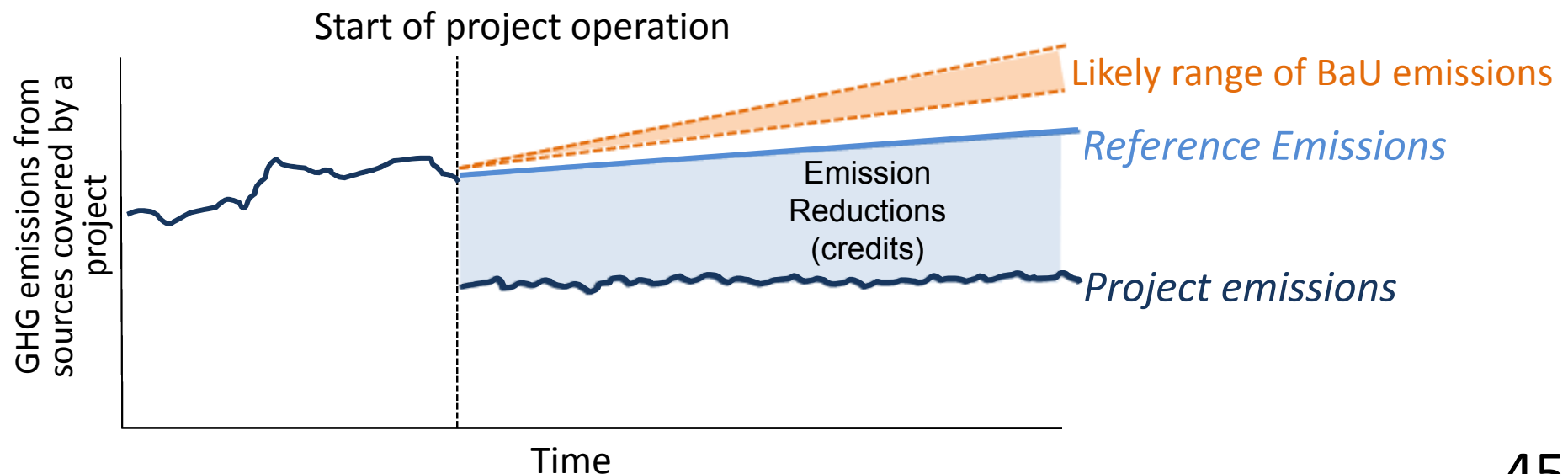
Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.

Record of the meeting: The full text of all decisions of the JC is made publicly available.

Basic Concept for Crediting under the JCM

(Subject to further consideration and discussion with partner countries)

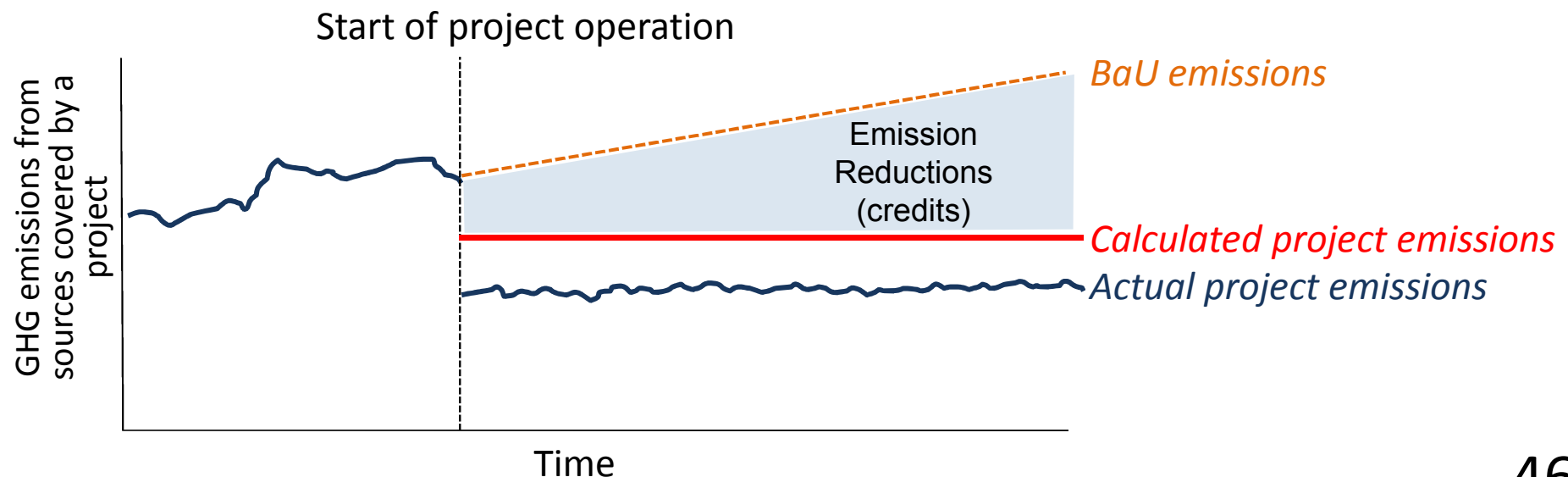
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the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



Addendum: ways to realize net reduction

(Subject to further consideration and discussion with partner countries)

- A net decrease and/or avoidance of GHG emissions can be realized in alternative way, instead of calculating the reference emissions below BaU emissions.
- Using conservative default values in parameters to calculate project emissions instead of measuring actual values will lead calculated project emissions larger than actual project emissions.
- This approach will also ensure a net decrease and/or avoidance of GHG emissions, as well as reduce burdens of monitoring.



JCM Methodology

■ Key Features of the JCM methodology

- The JCM methodologies are designed in such a way that project participants can use them easily and verifiers can verify the data easily.
- In order to reduce monitoring burden, default values are widely used in a conservative manner.
- Eligibility criteria clearly defined in the methodology can reduce the risks of rejection of the projects proposed by project participants.

Eligibility criteria	<ul style="list-style-type: none">• 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

<p>1. Title of methodology</p> <p>2. Objective</p> <p>3. Scope</p> <p>4. Methodology</p> <p>5. Monitoring and reporting</p> <p>6. Calculation of emissions</p> <p>7. Verification</p> <p>8. Other information</p>	<p>9. Monitoring and reporting</p> <p>10. Calculation of emissions</p> <p>11. Verification</p> <p>12. Other information</p>	<p>13. Monitoring and reporting</p> <p>14. Calculation of emissions</p> <p>15. Verification</p> <p>16. Other information</p>
<p>17. Monitoring and reporting</p> <p>18. Calculation of emissions</p> <p>19. Verification</p> <p>20. Other information</p>	<p>21. Monitoring and reporting</p> <p>22. Calculation of emissions</p> <p>23. Verification</p> <p>24. Other information</p>	<p>25. Monitoring and reporting</p> <p>26. Calculation of emissions</p> <p>27. Verification</p> <p>28. Other information</p>

Monitoring Spreadsheet

Monitoring and input data after project start										
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Monitoring point No.	Parameters	Description of data	Estimated values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments	
(1)	PO ₂	Project production volume at the HPP during the period of year y	20,000	kg	Option C	monitored data	Collecting electricity consumption data with verified calibrated weighing scale and reporting it to an spreadsheet monthly. Verification and calibration shall meet international standard on corresponding monitoring devices. Project deputy managers should check the input data with logbooks every 6 months.	once a month		
(2)	FFC _U	Project fossil fuel consumption by the HPP	500	kg	Option B	purchase records	Collecting the purchase amount from retailer invoices and reporting it to an spreadsheet monthly. Project deputy managers should check the input data with invoices every 6 months.	once a month		
(3)	PEC _U	Project electricity consumption by the HPP	500	Wh/y	Option C	monitored data	Collecting electricity consumption data with verified calibrated electricity monitoring devices and reporting it to an spreadsheet monthly. Verification and calibration shall meet international standard on corresponding monitoring devices.	continuous		
2. CO2 emission reductions										
CO2 emission reductions										
Units										
22,851 tCO2y										
Monitoring option										
Option A										
Based on public data which is measured by entities other than the project participants (Data used: publicly recognized data such as statistical data and specifications)										
Option B										
Based on the amount of transaction which is measured directly using metering instruments (Data used: commercial evidence such as invoices)										
Option C										
Based on the actual measurement using metering instruments (Data used: measured values)										

Monitoring Report Sheet

Monitoring Structure Sheet

Monitoring Plan Sheet

Cells for data & information input

PDD and Monitoring Plan

(Subject to further consideration and discussion with partner countries)

■ Developing a Project Design Document (PDD) and a Monitoring Plan

- A PDD form should be filled in with information of the proposed project.
- A Monitoring Plan consists of Monitoring Plan Sheet and Monitoring Structure Sheet, and it should be filled in as well.

PDD

Monitoring Structure

Monitoring Plan

Roles and responsibilities of personnel for monitoring should be described

Cells for data input (ex ante)

Other necessary information on parameters to be monitored are:

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

2.3. Summary of consent received and their considerations

Stakeholder	Consent received	Consideration of consent received
Owner	OK	From letters here to apply in the Energy saving measures, no other

2.4. Estimated measures implemented in each year

Year	Estimated measures (CO ₂ e)	Estimated measures (CO ₂ e)	Estimated measures (CO ₂ e)	Estimated measures (CO ₂ e)
2013	0.000	0.000	0.000	0.000
2014	0.000	0.000	0.000	0.000
2015	0.000	0.000	0.000	0.000
2016	0.000	0.000	0.000	0.000
2017	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000

2.5. Calculation of estimated emissions

2.6. Application of approved methodology

2.7. Project description

2.8. Location of project, including coordinates

2.9. Name of project participants

2.10. Other information

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

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

Possible Contents of the JCM PDD

A. Project description

(Subject to further consideration and discussion with partner countries)

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

B. Application of an approved JCM methodology(ies)

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

C. Calculation of emission reductions

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

D. Environmental impact assessment

E. Local Stakeholder consultation

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

F. References

Annex

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

Monitoring Report

(Subject to further consideration and discussion with partner countries)

■ Making a Monitoring Report

- A Monitoring Report should be made by filling cells for data input (ex post) in the Monitoring Report Sheet with monitored values.
- Project participants prepare supporting documents which include evidence for stated values in the cells for data input.

Monitoring Report

Monitoring period

Cells for data input (ex post)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Monitoring period	Monitoring point No.	Parameters	Description of data	Monitored Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
2	2013-2014	(1)	PO _y	Project production volume at the HPIF* during the period of year y	20,000	ty	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated weighing scale and inputting it to an spread sheet electrically - Verified scales are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices. - Project deputy managers double check the input data with logbooks every 6 months	once a month	
4	2013-2014	(2)	PFC _y	Project fossil fuel consumption by the HPIF	500	ty	Option B	purchase records	- Collecting the purchase amount from retailer invoices and inputting it to an spread sheet manually - Project deputy managers double check the input data with invoices every 6 months	once a month	
5	N/A	(3)	PEC _y	Project electricity consumption by the HPIF	500	#Wh/y	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting to an spread sheet electrically - Verified monitoring devices are installed and they are calibrated once a year. - Verification and calibration shall meet international standard on corresponding monitoring devices	continuous	
7	* HPIF refers to High-Performance Industrial Furnace.										
9	2. CO2 emission reductions										
10	CO2 emission reductions										
11	22,851										
12	tCO2/y										
14	(Monitoring option)										
15	Option A	Based on public data which is measured by entities other than the project used: publicly recognized data such as statistical data and specification									
16	Option B	Based on the amount of transaction which is measured directly using meter used: commercial evidence such as invoices									
17	Option C	Based on the actual measurement using metering instruments (Data used)									
18											

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

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