

Recent Developments of The Joint Crediting Mechanism (JCM)

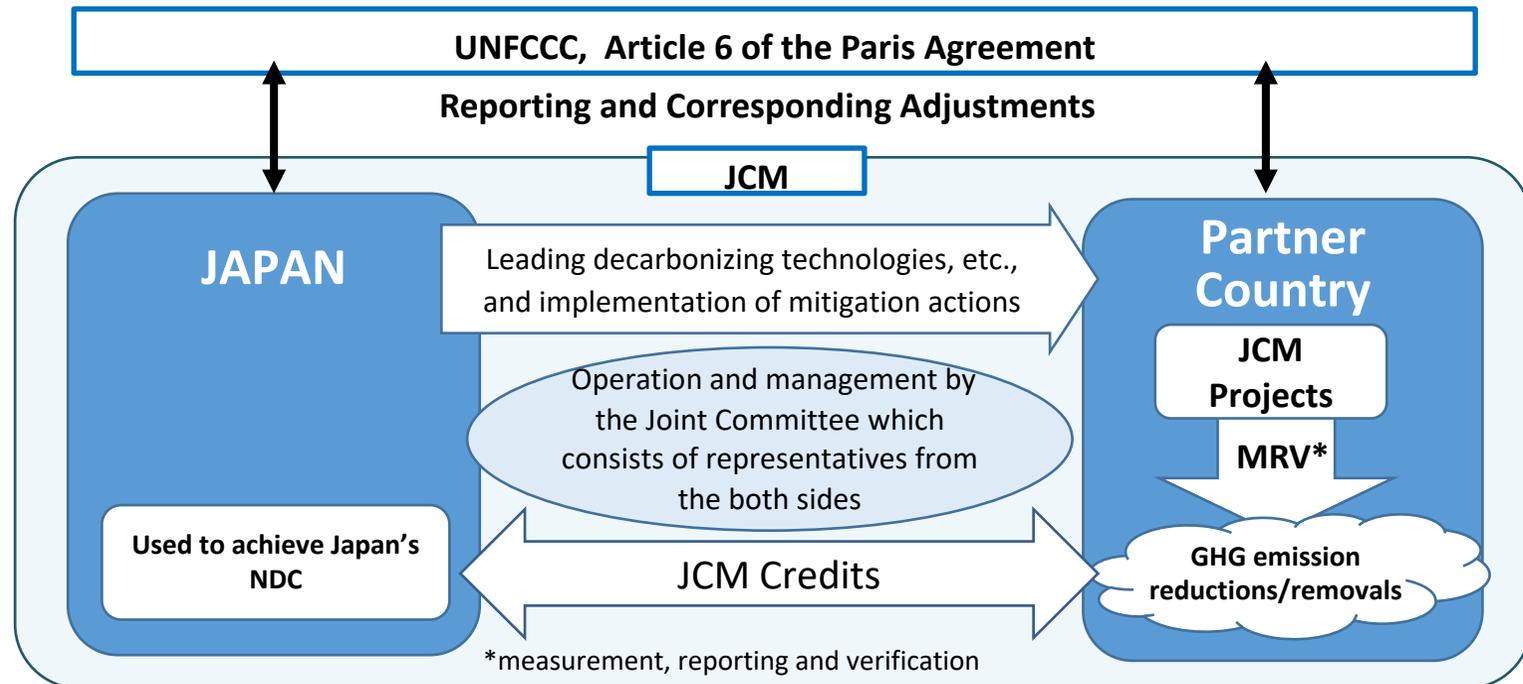
August 2022

Government of Japan

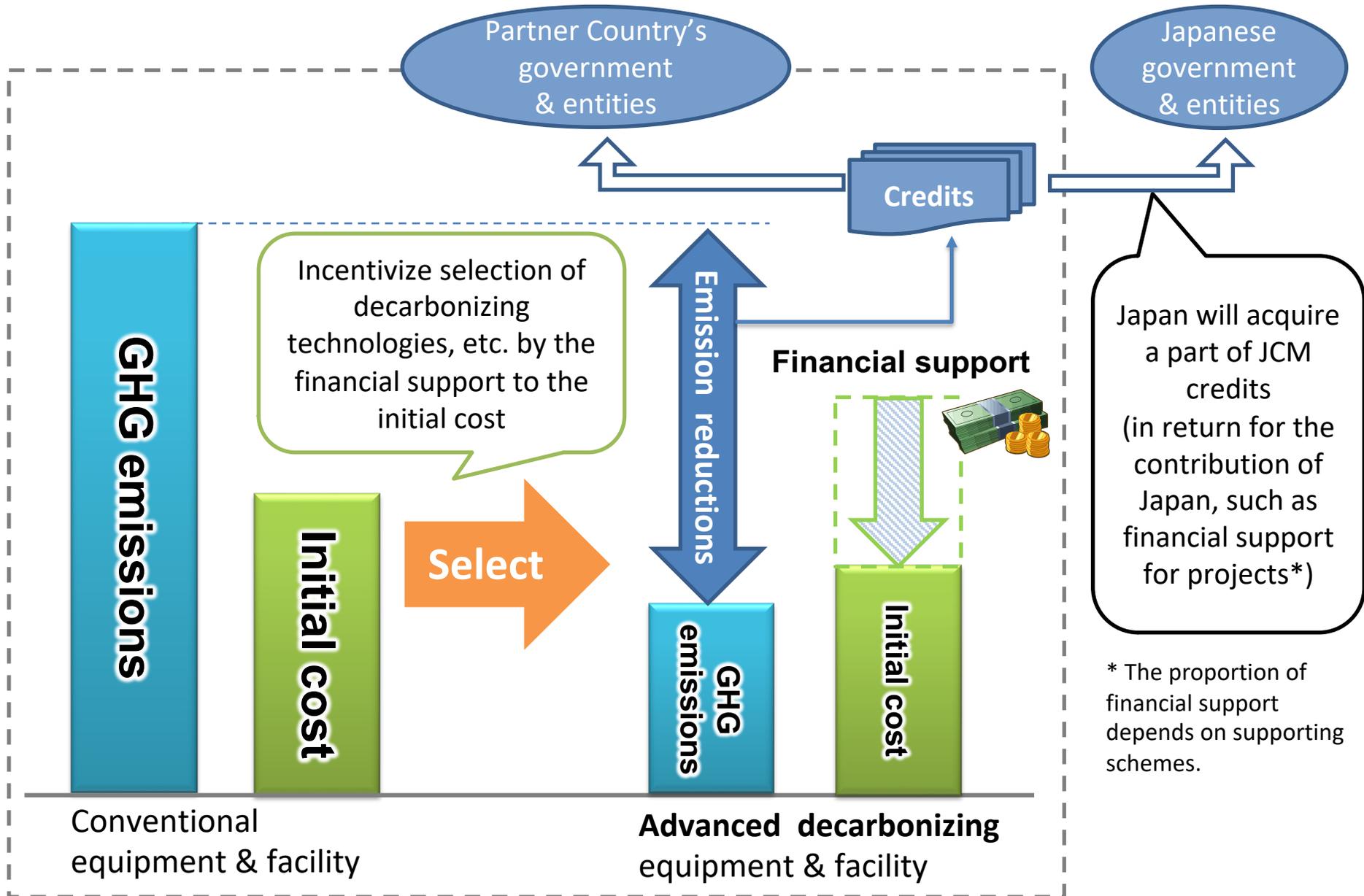
All ideas are subject to further consideration and discussion with partner countries

Basic Concept of the JCM

- Facilitate diffusion of leading decarbonizing technologies and infrastructure, etc., through investment by Japanese entities, thereby contributing to GHG emission reductions or removals and sustainable development in partner countries.
- Contribute to the achievement of both countries' NDCs while ensuring the avoidance of double counting through corresponding adjustments.
- Implement the JCM consistent with the guidance on cooperative approaches, referred to in Article 6, paragraph 2 of the Paris Agreement.



Contribution from Japan (example)



JCM Partner Countries

- Japan 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)



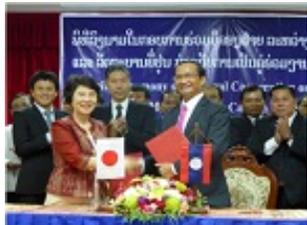
Kenya
Jun. 12, 2013
(Nairobi)



Maldives
Jun. 29, 2013
(Okinawa)



Viet Nam
Jul. 2, 2013
(Hanoi) *The photo at the time of extension in Oct 2021.



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)



Philippines
Jan. 12, 2017
(Manila)

Projects supported by the JCM financing programmes

Renewable Energy



Solar power, FARMLAND Co., Ltd., Chile



Floating Solar PV, TSB Co., Ltd., Thailand



Hydro Power Plant, Toyo Energy Farm Co., Ltd., Indonesia



Biomass Co-Generation System, Fuji-Foods Coporation, Thailand



Binary Power Generation Project at Geothermal Power Plant, MHI, Ltd., Philippines

Energy efficiency [Consumer sector]



High-efficiency refrigerator, Mayekawa MFG, Indonesia



Energy saving at convenience stores, Panasonic, Indonesia



High-efficiency air-conditioning system, Hitachi, Daikin, Vietnam

Energy efficiency [Industrial sector]

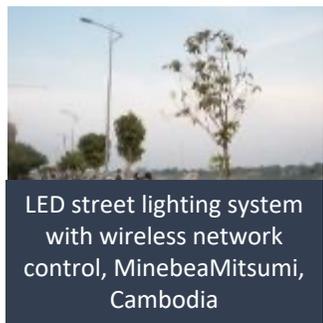


Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia



Energy-saving of mobile communications base transceiver stations, KDDI Corp. Indonesia

Energy efficiency [Urban sector]



LED street lighting system with wireless network control, MinebeaMitsumi, Cambodia



Amorphous transformers in power distribution, Hitachi Materials, Vietnam

Waste



Power Generation with Methane Gas Recovery System, NTTDATA, Mexico



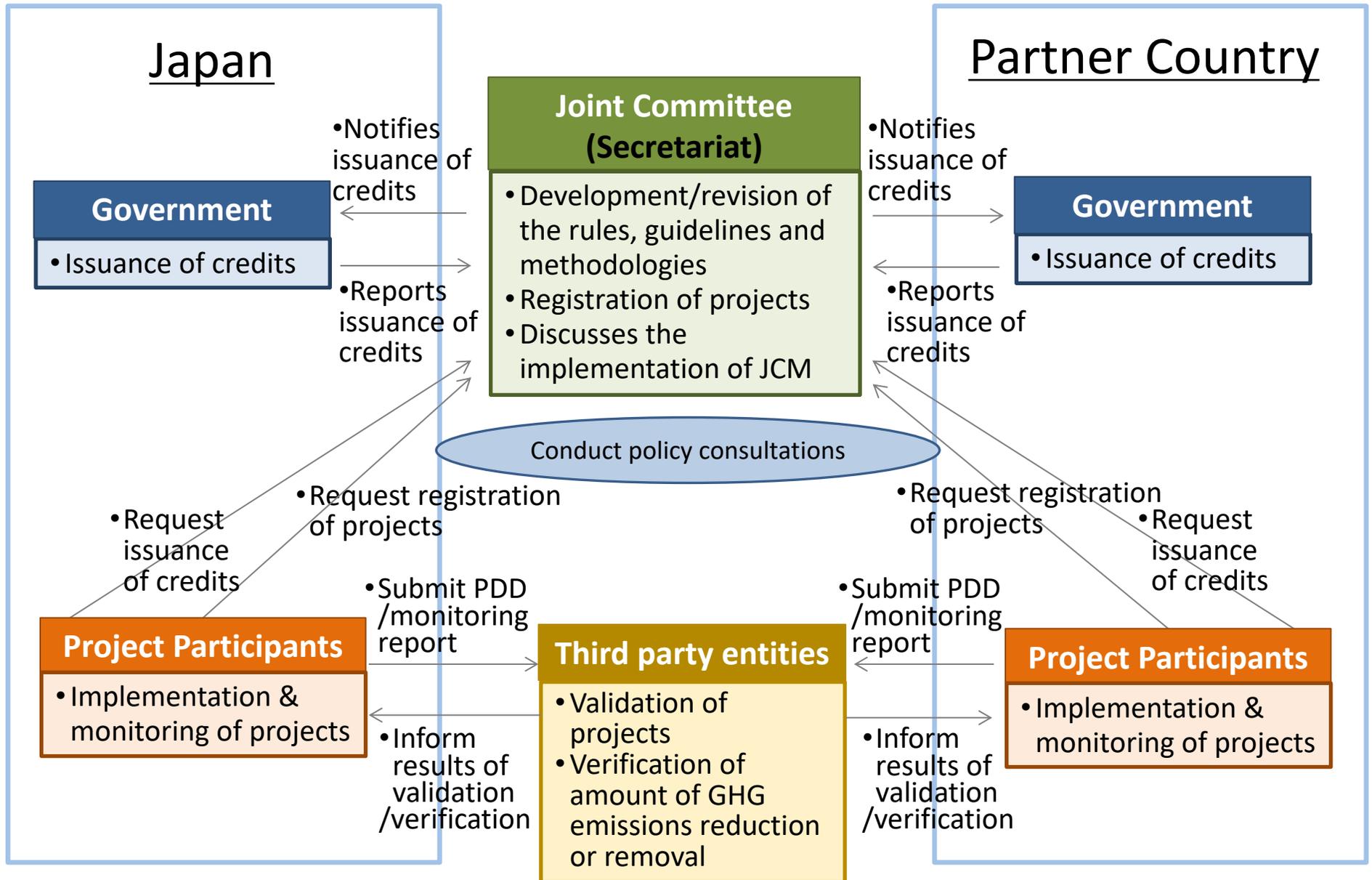
Waste to Energy Plant, JFE engineering, Myanmar

Transport



CNG-Diesel Hybrid Public Bus, Hokusan Co., Ltd., Indonesia

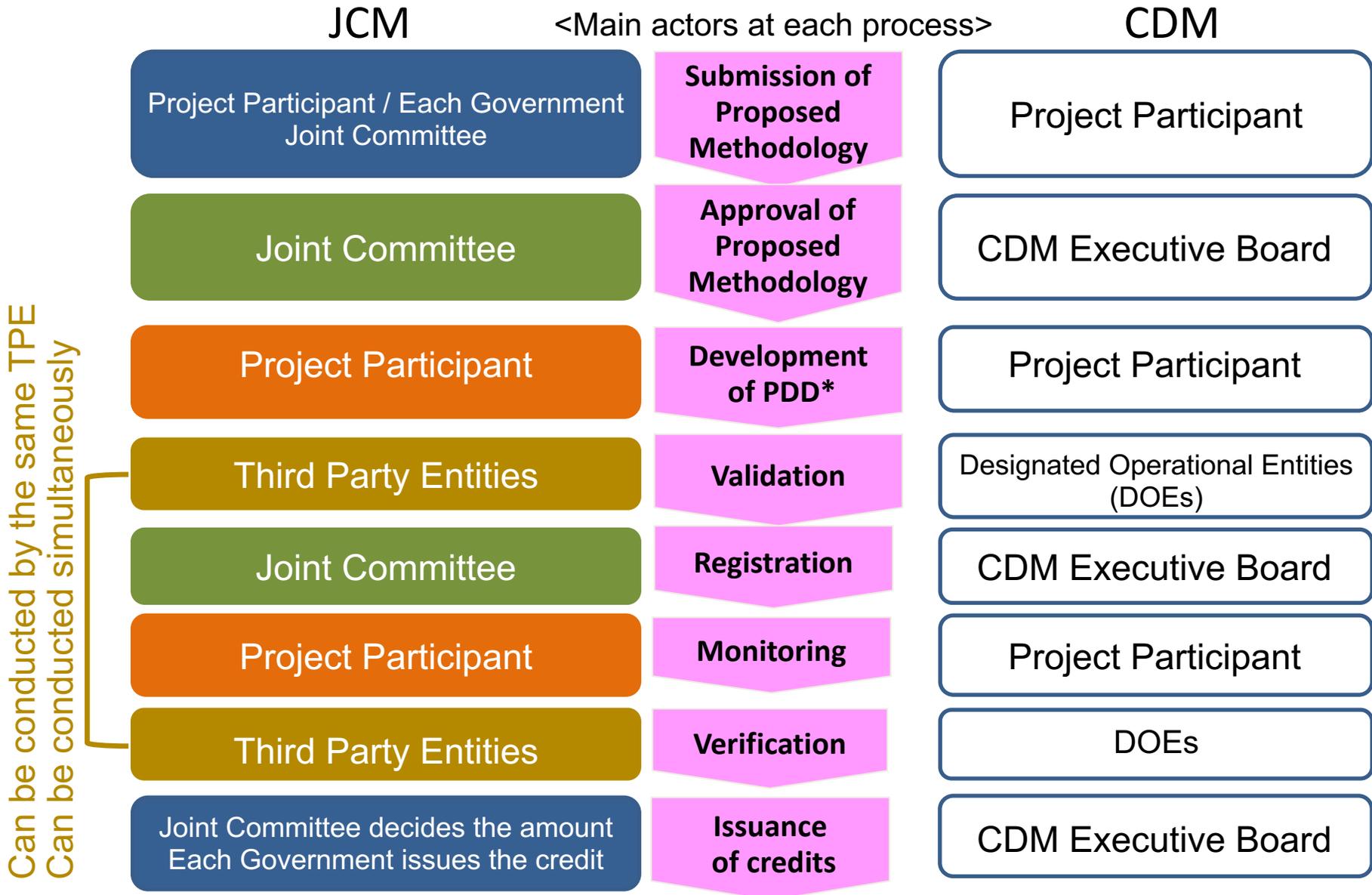
Scheme of the JCM



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 and the percentage of JCM credit allocation.
- Each Government establishes and maintains a registry.
- On the basis of notification for issuance of JCM credits by the JC, each Government issues the notified amount of JCM credits to its registry.

Project Cycle of the JCM and the CDM



*PDD: Project Design Document

Japan's Nationally Determined Contribution (NDC)

(Decided on October 22, 2021)

Japan's NDC

Japan aims to reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels, setting an ambitious target which is aligned with the long-term goal of achieving net-zero by 2050. Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.

Description about the JCM

Japan's Greenhouse Gas Emission Reduction Target

- Japan aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million t-CO₂ by fiscal year 2030 through public-private collaborations. Japan will appropriately count the acquired credits to achieve its NDC.

Information to facilitate clarity, transparency and understanding

- Japan will establish and implement the Joint Crediting Mechanism (JCM) in order to quantitatively evaluate contributions of Japan to greenhouse gas emission reductions and removals which are achieved through the diffusion of, among others, leading decarbonizing technologies, products, systems, services and infrastructures as well as through the implementation of measures in developing countries and others, and in order to use such contributions to achieve Japan's NDC. By doing so, through public-private collaborations, Japan aims to secure accumulated emission reductions and removals at the level of approximately 100 million t-CO₂ by fiscal year 2030. Japan will appropriately count the acquired credits to achieve its NDC.
- With regards to the JCM which Japan has initiated to establish, Japan secures environmental integrity and the avoidance of double-counting in line with the international rules including the Paris Agreement. Also, based on its experience in the JCM, Japan intends to lead international discussions, thereby contributing to the development of appropriate international rules for the use of market mechanism.

Position of the JCM in the Plan for Global Warming Countermeasures

*Cabinet Decision, October 2021

Description about the JCM

- Japan will establish and implement the Joint Crediting Mechanism (JCM) in order to quantitatively evaluate contributions of Japan to greenhouse gas emission reductions and removals which are achieved through the diffusion of, among others, leading decarbonizing technologies, products, systems, services and infrastructures as well as through the implementation of measures in developing countries and others, and in order to use such contributions to achieve Japan's NDC. By doing so, **through public-private collaborations. Japan aims to secure accumulated emission reductions and removals at the level of approximately 100 million t-CO2 by fiscal year 2030.** Japan will appropriately count the acquired credits to achieve its 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 emissions reductions realized overseas towards national emissions reduction targets.
- The amount of emissions reduction and removal acquired by Japan under the JCM will be appropriately counted as Japan's reduction in accordance with the Paris Agreement.
- At COP26 in Glasgow last November, the rules for Article 6 of the Paris Agreement were adopted.

Implementation of the Article 6 rules into domestic rules

➤ Establishment of the **JCM Promotion and Utilization Council** consisting of five relevant Ministries* (January 17,2022)

*Ministry of the Environment; Ministry of Economy, Trade and Industry; Ministry of Foreign Affairs; Ministry of Agriculture, Forestry and Fisheries and Ministry of Land, Infrastructure, Transport and Tourism

The Council's duties include:

1. the authorization of JCM credits as a Party to the Paris Agreement,
2. the determination of a method to apply corresponding adjustments to prevent double counting,
3. the revision of the Guidelines for the Implementation of the JCM.

➤ Formulation of **the procedures on the authorization and corresponding adjustments** (April 7, 2022)

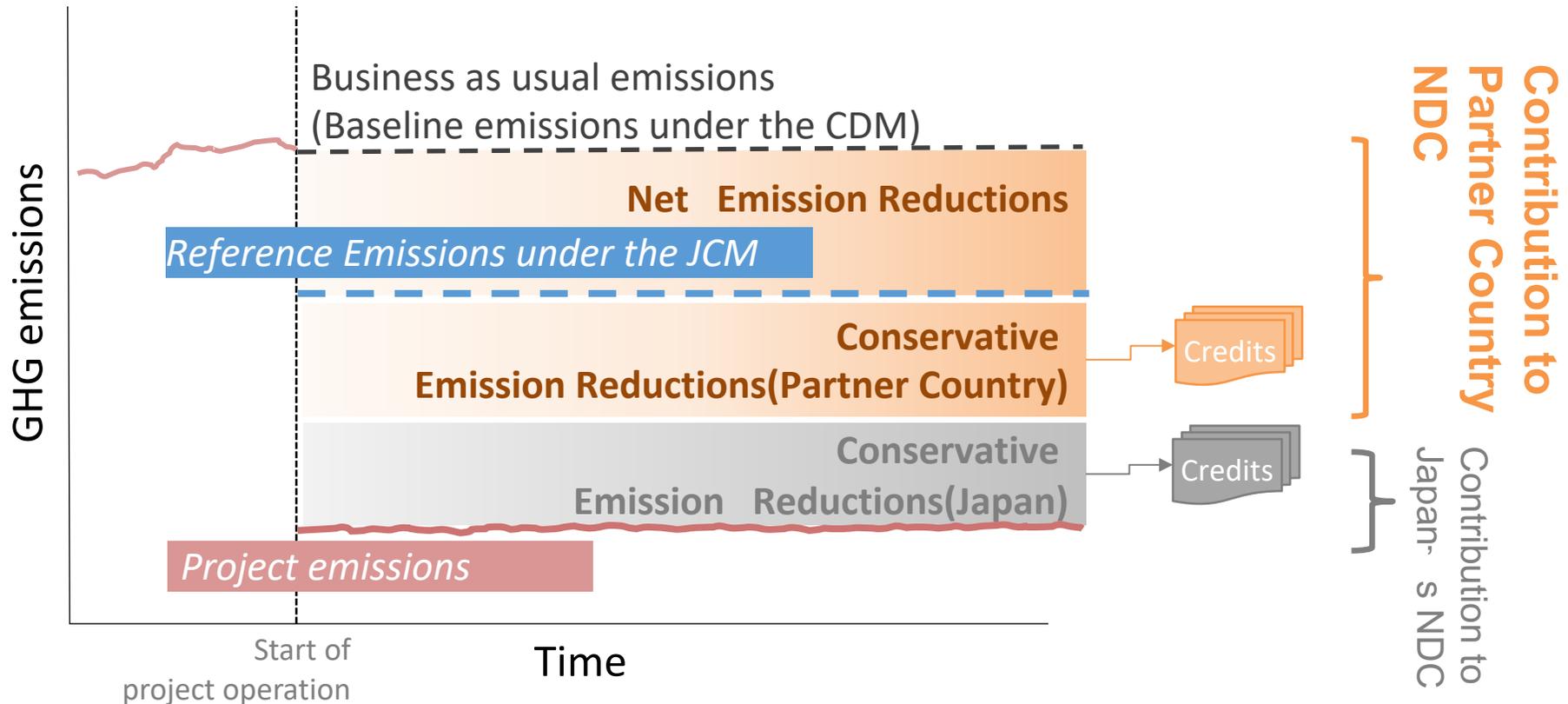
- Establishment “Procedures for Authorization as a Party to the Paris Agreement regarding the Joint Crediting Mechanism (JCM)” and “Procedures for Corresponding Adjustments regarding the Joint Crediting Mechanism.”

➤ **Expansion of JCM Partner Countries** (June 7, 2022)

- The Grand-design and Implementation Plan/Follow-ups of the New Capitalism (Cabinet Decision on June 7, 2022) stipulates “For the expansion the JCM, the government accelerates consultations with relevant countries, aiming to increase the JCM partner countries up to around 30 by 2025.”

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.



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 and projects
 - issuance of JCM credits
 - 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

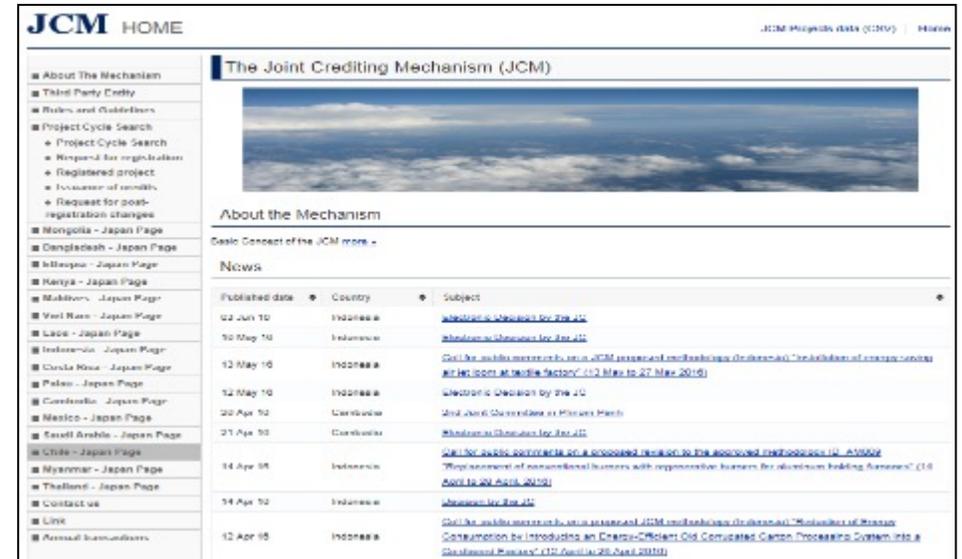


Image of the general information page



Image of the individual JCM Partner countries-Japan page

Japan's support for the JCM partner countries

Overview of Japan's support for the JCM partner countries

Ministry	Programme	Type of support	Note
Ministry of the Environment	JCM Model Project*	Subsidy	See slide 17
	F-gas Recovery and Destruction Model Project*	Subsidy	See slide 18
	Japan Fund for the JCM (JF JCM) - managed by ADB	Grant (Sovereign) / Interest Buy-down (Non-sovereign)	See slide 19
	JCM support programme by UNIDO*	Grant for projects, technical cooperation	New programme from FY2022 See slide 20
	Project development/capacity building/MRV support	Technical cooperation	See slide 22
Ministry of Economy, Trade and Industry	JCM Feasibility Study	Technical cooperation	See slide 23
	JCM Demonstration Projects	Government-commissioned project	See slide 23
Forestry Agency	Field studies for JCM REDD+	Government-commissioned project	---

* These programmes can support projects implemented by government-owned companies but not those implemented by the government itself.

JCM Model Projects by MOEJ

Budget for projects starting from FY 2022 is approx. **17.1 billion JPY** (approx. **USD 158 million**) in total by FY2024 (1 USD = 108 JPY)

Government of Japan

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

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

Conduct MRV and expected to deliver 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 financing is awarded and finishing installation within three years.

JCM F-gas Recovery and Destruction Model Project by MOEJ

【Budget for FY 2022】

60 million JPY (approx.)

0.56million USD) (1 USD = 108 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 financing is awarded, start implementation of recovery/destruction within three years
- Aim for the registration as JCM project and issuance credits

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

Budget for FY2022

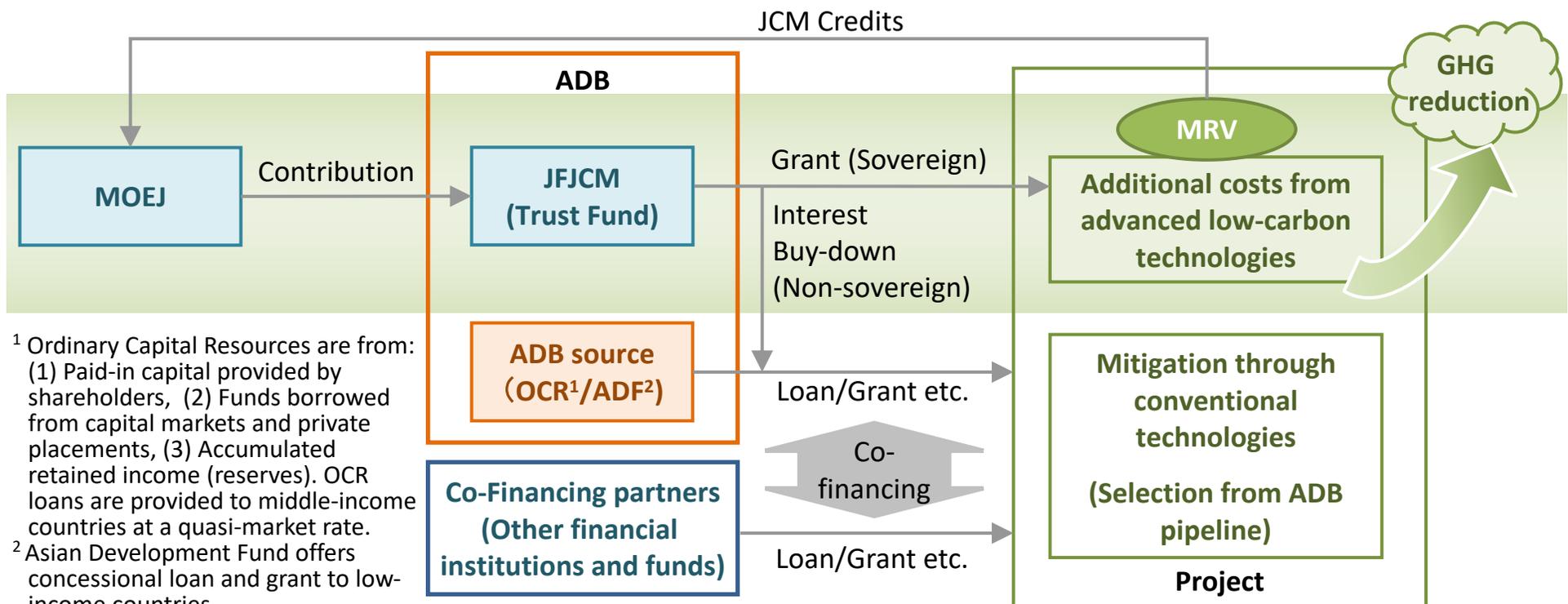
JPY 1 billion (approx. USD 9.3 million)

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

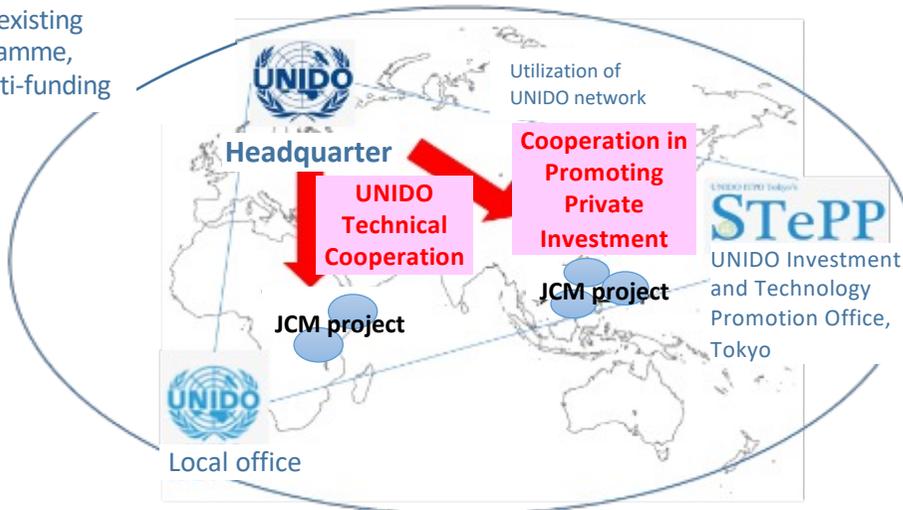


Collaboration with UNIDO by the JCM

- Signed **Joint Declaration** on Environmental Cooperation in order to support the JCM.(Nov.10.2020)
- The UNIDO-MOEJ Project to support JCM related activities, including financial support for deploying the decarbonizing technologies in Africa and Asia.
 - UNIDO Technical Cooperation
 - Cooperation in Promoting Private Investment



Linkage with existing UNIDO programme, including multi-funding



- Aiming to facilitate close cooperation between UNIDO and MOEJ on
- **climate change**
 - **the circular economy**
 - **fluorocarbon life cycle management**
 - **the reduction of industrial pollution**
 - **the elimination and reduction of persistent organic pollutants**
 - **life cycle management of mercury**

Comprehensive Set of Assistances from Upper Stream to Lower Stream



JCM Financing Programme by MOEJ (FY2013~2022) as of August, 2022

Total 218 projects (17 partner countries) (● Model Project: 207 projects (including Eco Lease: 5 projects), ■ ADB: 5 projects, ◆ REDD+: 2 projects, ▲ F-gas: 4 projects)
124 underlined projects have been started operation. **65 projects with *** have been registered as JCM projects. Other 1 project in Malaysia

Cambodia: 6 projects

- LED Street Lighting*
- 200kW Solar PV at International School*
- Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps
- Solar PV & Biomass Power Plant
- 0.9MW Solar PV

Myanmar: 8 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
- 7.3MW Solar PV
- 8.8MW Waste Heat Recovery in Cement Plant
- Brewing Systems and Biogas Boiler to Brewery Factory

Bangladesh: 5 projects

- Centrifugal Chiller
- Loom at Weaving Factory*
- 315kW PV-diesel Hybrid System*
- Centrifugal Chiller*
- High Efficiency Transmission Line

Maldives: 3 projects

- 186kW Solar Power on School Rooftop*
- Smart Micro-Grid System
- Greater Male Waste to Energy Project

Saudi Arabia: 2 projects

- Electrololyzer in Chlorine Production Plant
- 400MW Solar PV

Ethiopia: 1 project

- 120MW Solar PV

Kenya: 3 projects

- 1MW Solar PV at Salt Factory*
- 3.1MW Solar PV
- 2.3MW Solar PV

Laos: 6 projects

- ◆ REDD+ through controlling slush-and-burn
- Amorphous transformers
- 14MW Floating Solar PV
- 11MW Solar PV*
- 14MW Solar PV
- 19MW Solar PV

Thailand: 51 projects

- Energy Saving at Convenience Store
- 1MW Solar PV on Factory Rooftop*
- Upgrading Air-saving Loom*
- Centrifugal Chiller & Compressor*
- Centrifugal Chiller in Tire Factory
- Co-generation in Motorcycle Factory*
- Air Conditioning System & Chiller*
- Refrigeration System*
- Ion Exchange Membrane Electrololyzer
- Chilled Water Supply System
- LED Lighting to Sales Stores
- 2MW Solar PV1
- 12MW Waste Heat Recovery in Cement Plant*
- Co-generation System PV
- 3.4MW Solar PV*
- Refrigerator and Evaporator
- Heat Recovery Heat Pump*
- 30MW Solar PV*
- 5MW Floating Solar PV*
- Boiler System in Rubber Belt Plant
- Air-conditioning Control System
- Biomass Co-generation System
- Co-generation in Fiber Factory
- Biomass Boiler
- 25MW Solar PV in Industrial Park
- 3.4MW Solar PV
- 0.8MW Solar PV and Centrifugal Chiller
- ▲ F-gas Recovery and Destruction Scheme
- 37MW Solar PV and Melting Furnace
- Heat Exchanger in Fiber Factory
- 8.1MW Solar PV
- Centrifugal Chiller to Machinery Factory
- 5MW Solar PV
- 2.6MW Solar PV
- 2MW Solar PV2
- 2.7MW Solar PV with Blockchain Technology
- 32MW Solar PV and Floating Solar PV
- 23MW Solar PV
- Once-through Boiler in Garment Factory
- 35MW Solar PV and Storage Battery
- 2MW Solar PV3
- Boiler, Chiller and PV
- 1.85MW Solar PV (Eco Lease)
- 0.13MW Solar PV (Eco Lease)
- Gas Co-generation System & 22MW Solar PV
- ORC Waste Heat Recovery
- 4.3MW Solar PV
- 2.9MW Solar PV
- 1MW Solar PV
- Methane Avoidance and Biomass Boiler in Fruit Processing Factory
- 1.6MW Solar PV (Eco Lease)

Mongolia: 8 projects

- Heat Only Boiler (HOB)**
- 2.1MW Solar PV in Farm*
- 10MW Solar PV*
- 8.3MW Solar PV in Farm*
- 15MW Solar PV
- Upscaling Renewable Energy Sector
- Fuel Conversion by Introduction of LPG Boilers
- Improving Access to Health Services

Viet Nam: 41 projects

- Digital Tachographs*
- Amorphous transformers1*
- Air-conditioning in Hotel1*
- Electricity Kiln
- Air-conditioning in Lens Factory*
- Container Formation Facility*
- Amorphous transformers 2*
- 320kW Solar PV in Shopping Mall*
- Air-conditioning Control System
- High Efficiency Water Pumps*
- Energy saving Equipment in Lens Factory*
- Amorphous transformers 3*
- Amorphous transformers 4
- Energy Saving Equipment in Wire Production Factory*
- Energy Saving Equipment in Brewery Factory
- High Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Raw Water Intake Pumps
- ▲ F-gas Recovery and Dedicated Destruction Scheme
- Biomass Boiler to Chemical Factory
- 57MW solar PV
- Air-Conditioning System and Air Cooled Chillers
- 49MW solar PV
- Once-through Boiler to Food Factory
- Biomass Boiler
- Biomass Co-generation System
- Air-conditioning in Hotel2
- 2MW Solar PV
- Waste to Energy
- LED Lighting to Office Building
- 9MW Solar PV
- 10MW Rice Husk Power Plant
- 12MW Solar PV
- 9.8MW Solar PV
- 5.8MW Solar PV
- 2.5MW Solar PV
- Chiller and LED
- ▲ F-gas Recovery and Mixed Combustion Scheme
- 20MW Biomass Power Plant
- 16MW Mini Hydro Power Plant
- 7.9MW Solar PV
- 0.4MW Solar PV (Eco Lease)

Philippines: 18 projects

- 1.53MW Rooftop Solar PV*
- 1MW Rooftop Solar PV
- 4MW Solar PV*
- 1.2MW Rooftop Solar PV*
- 18MW Solar PV
- 0.16MW Micro Hydro Power Plant
- 33MW Wind Power
- 2MW Solar PV (Eco Lease)
- 60MW Solar PV
- Biogas Power Generation and Fuel Conversion
- 29MW Binary Geothermal Power Generation
- 20MW Flash Geothermal Power Plant
- Air Conditioning System
- ▲ F-gas Recovery and Destruction Scheme
- 28MW Binary Geothermal Power Generation
- 14.5MW Mini Hydro Power Plant
- 9MW Solar PV
- 0.8MW Solar PV (Eco Lease)

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*

Chile: 9 projects

- 1MW Rooftop Solar PV*
- 3.4MW Rice Husk Power Generation
- 3MW Solar PV1
- 3MW Solar PV2
- 34MW Solar PV
- 9MW Solar PV1
- 9MW Solar PV2
- 3MW Solar PV3
- 6MW Solar PV

Mexico: 5 projects

- 1.2MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 20MW Solar PV
- 30MW Solar PV1
- Energy Efficient Distillation System

Costa Rica: 2 projects

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

Indonesia: 45 projects

- Centrifugal Chiller at Textile Factory*
- Energy Saving at Convenience Store*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 500kW Solar PV and Storage Battery*
- 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 Plant1
- Looms in Weaving Mill*
- LED Lighting to Sales Stores
- Industrial Wastewater Treatment System
- 0.5MW Solar PV*
- Gas Co-generation system
- Absorption Chiller*
- High Efficiency Autoclave1
- CNG-Diesel Hybrid Public Bus
- Rehabilitation of Hydro Power Plant
- 12MW Biomass Power Plant
- Injection Molding Machine
- 2MW Mini Hydro Power Plant
- Boiler to Carton Box Factory
- 10MW Hydro Power Plant2
- 6MW Hydro Power Plant1
- 6MW Hydro Power Plant2
- 5MW Hydro Power Plant
- 4.2MW Solar PV
- 8MW Mini Hydro Power Plant
- Thermal Oil Heater System
- 3.3MW Rooftop Solar PV
- 6MW Hydro Power Plant3
- 2.3MW Hydro Power Plant
- High Efficiency Autoclave2
- Once-through Boiler in Chemical Factory
- 5MW Solar PV
- 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

Project development & outreach activities 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/s/>



Outreach

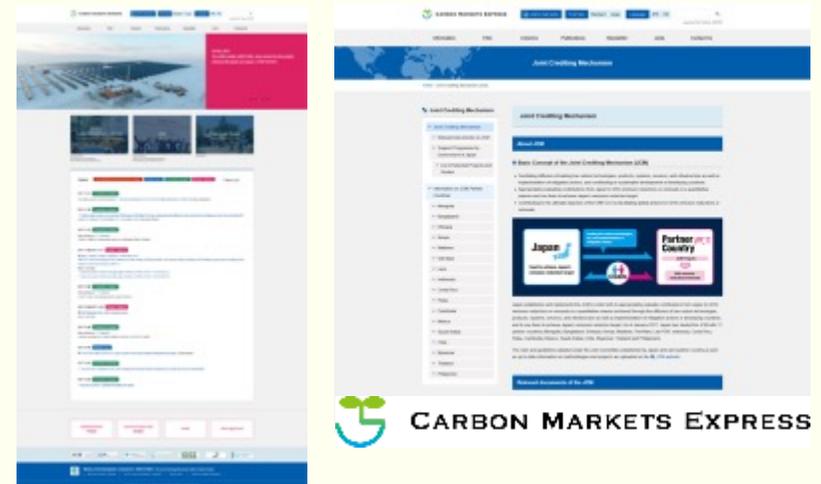
- **Carbon Markets Express website** provides information on the latest updates on the JCM and relevant programmes such as JCM promotion schemes by the Government of Japan.

<http://carbon-markets.env.go.jp/eng/index.html>

E-mail Newsletter and up-to-date information are distributed regularly. To register, access:

(for JP) <http://carbon-markets.env.go.jp/newsletter/index.html>

(for EN) http://carbon-markets.env.go.jp/eng/en_newsletter/index.html



METI's support for the JCM partner countries

- METI supports the introduction of **advanced decarbonizing technologies through Demonstration Projects** which contribute to the decarbonization of the JCM partner countries.
- The project cost burdened by Japanese side is **100% supported by Japanese government (METI/NEDO).**

Examples of past projects



Total: 11 projects in 6 countries (As of July 2022)

JCM Feasibility Study by METI



Scope:

- Consider basic elements of the demonstration (technology, project site, stakeholders, etc.)
- Establish the basis of JCM methodology for quantification of the GHG emission reduction
- Study the possibility of dissemination of the introduced technology

Project period:

Up to 1 year

Assumed technical areas: Energy efficiency with IoT, EMS, Renewable energy, CCS/CCUS, Hydrogen/Ammonia, etc.

JCM Demonstration Projects by NEDO (*)



Scope:

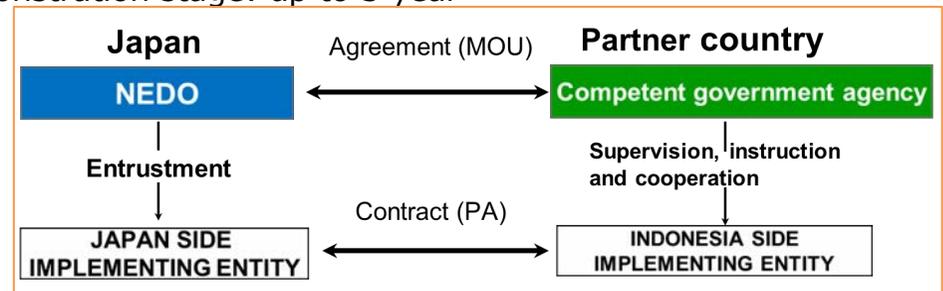
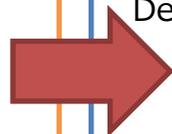
Demonstrate and verify the effectiveness of advanced decarbonizing technology:

- Introduction of relevant facilities and systems, and conduct demonstration
- Quantification of GHG emission reduction effectiveness
- JCM procedure toward issuance of JCM credits

Project period:

Pre-demonstration stage: up to 1 year

Demonstration stage: up to 3 year



* NEDO = New Energy and Industrial Technology Development Organization

Demonstration Projects by METI* (as of May 2022)

* 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:

- IoT utilization promotion project to streamline and advance power generation assets for electric power companies in ASEAN countries (Marubeni)
※FY Feb 2019 –
- Low-carbon Operation for Power Grid utilizing Optimized Performance Enabling Network for Volt/Var(Q) (OPENVQ)
※FY Feb 2020 –

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

Lao PDR:

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

Reference:
Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

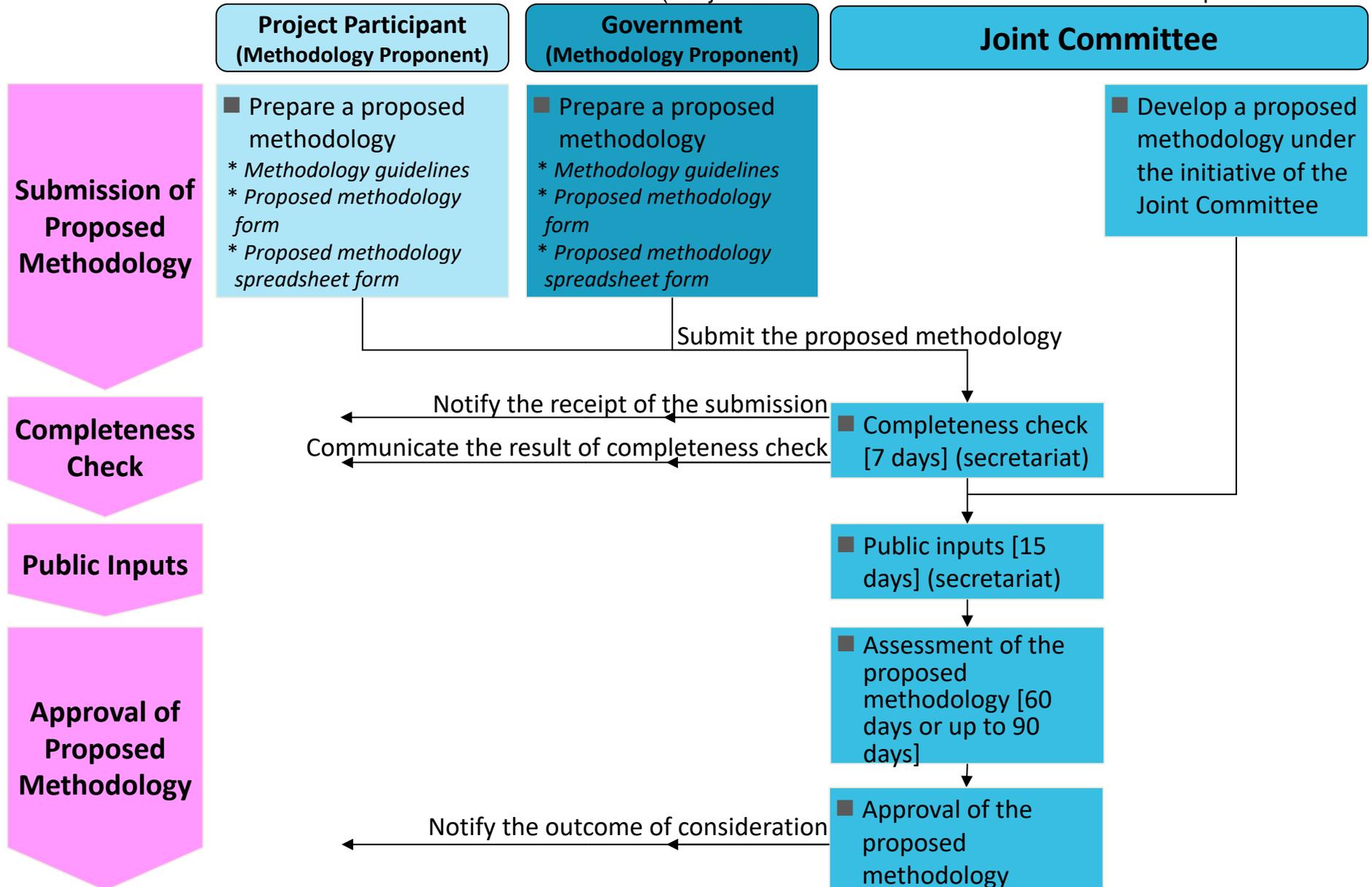
Necessary documents for the JCM

(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

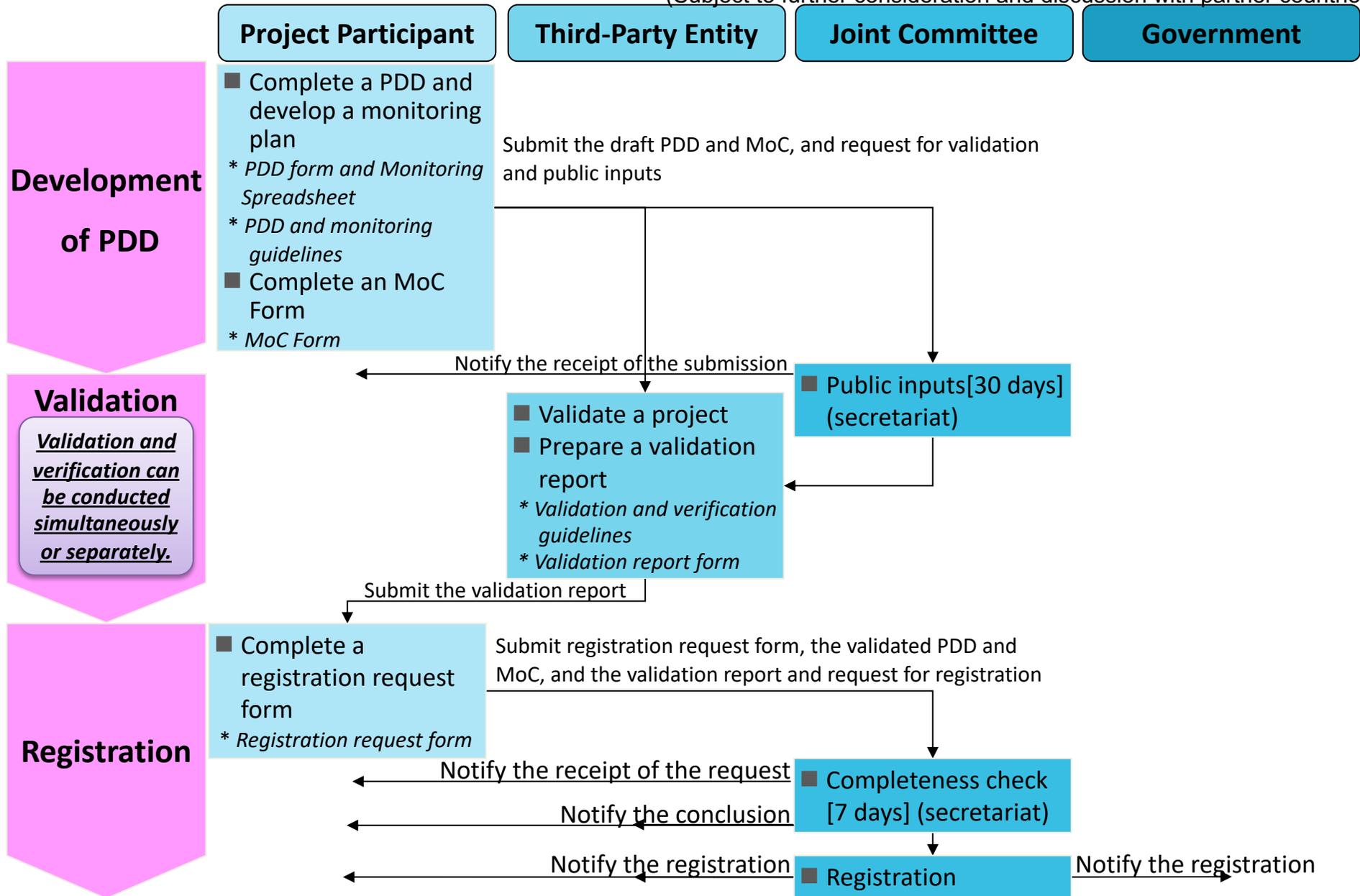
(Subject to further consideration and discussion with partner countries)



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)

Project Participant

Third-Party Entity

Joint Committee

Government

Monitoring

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

Submit the monitoring report for verification

Verification

Validation and verification can be conducted simultaneously or separately.

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

Submit the verification report

Issuance

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

Request for notification for issuance

Notify the receipt of the request

- Completeness check [7 days] (secretariat)

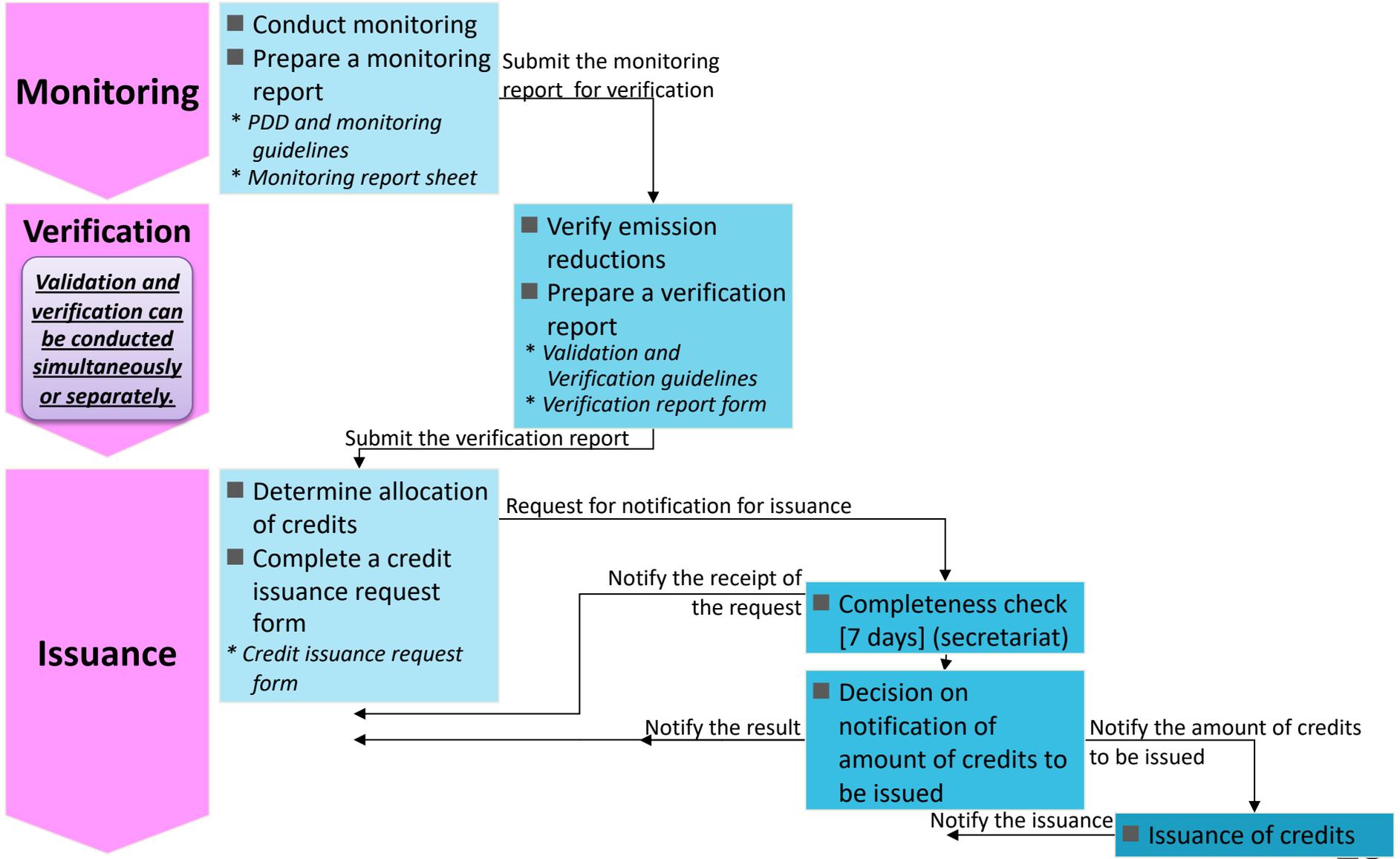
- Decision on notification of amount of credits to be issued

Notify the amount of credits to be issued

Notify the result

Notify the issuance

- Issuance of credits



Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with partner countries)

Members

- The Joint Committee (JC) consists of representatives from both Governments.
- Each Government designates up to 10 members.
- 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.

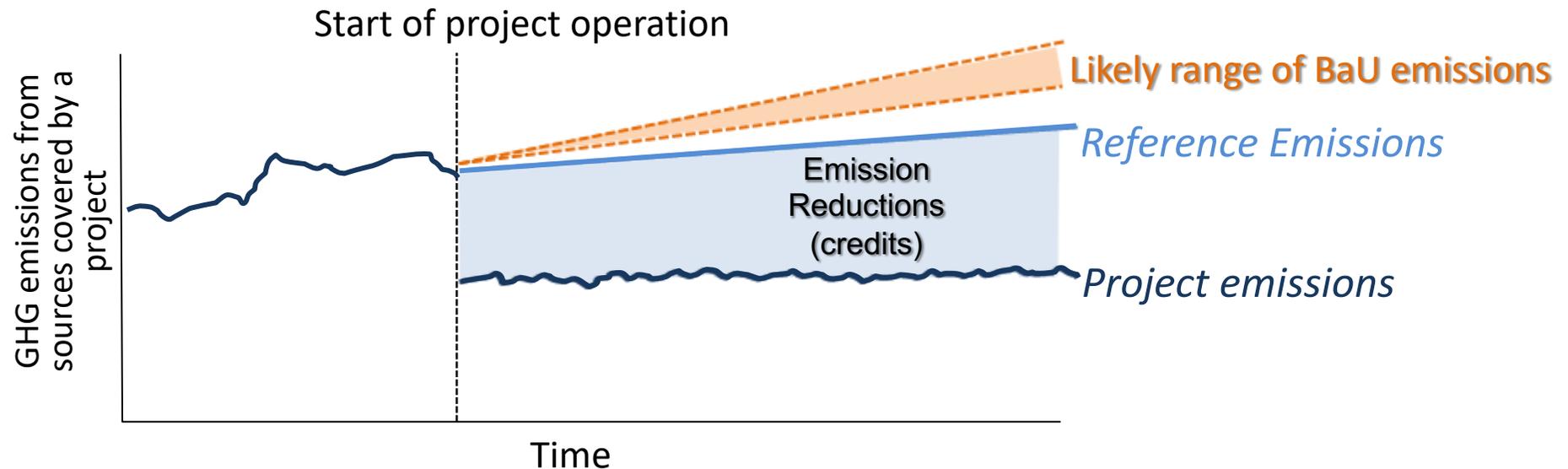
Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.

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)

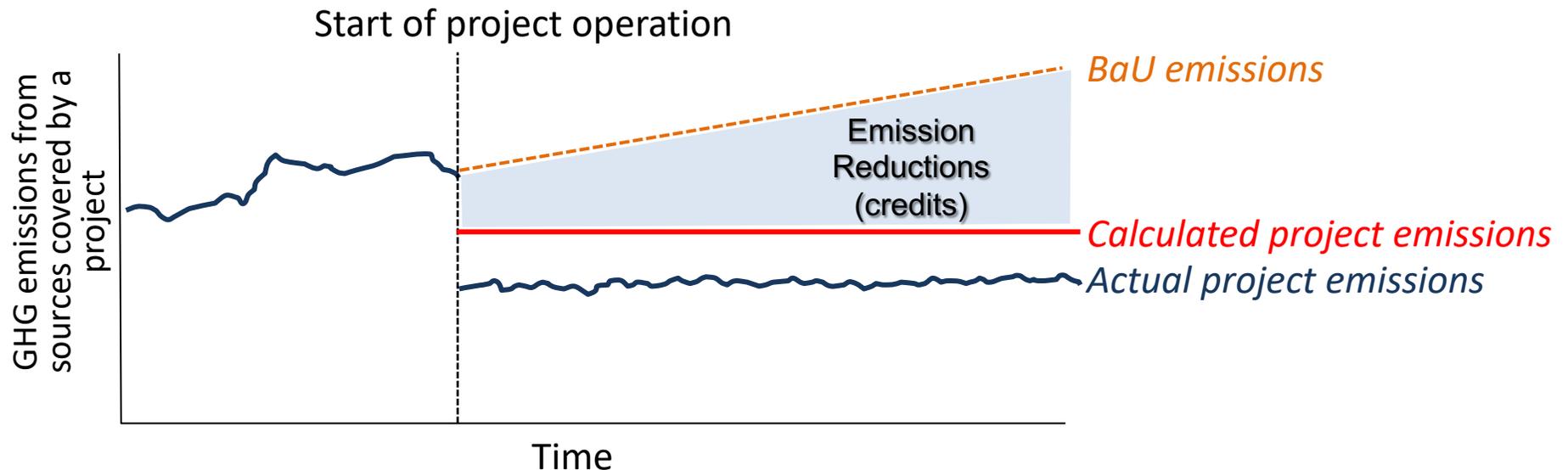
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the 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 efficiency 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

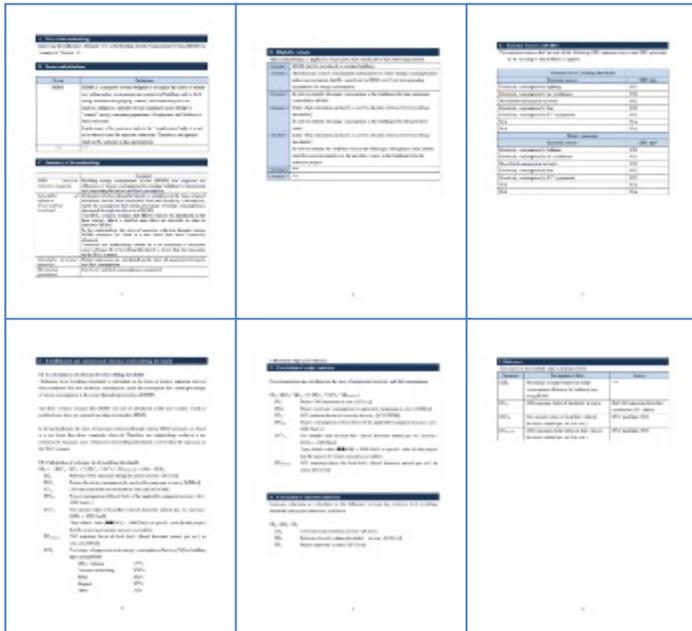
Overview of JCM Methodology, Monitoring Plan and Monitoring Report

(Subject to further consideration and discussion with partner countries)

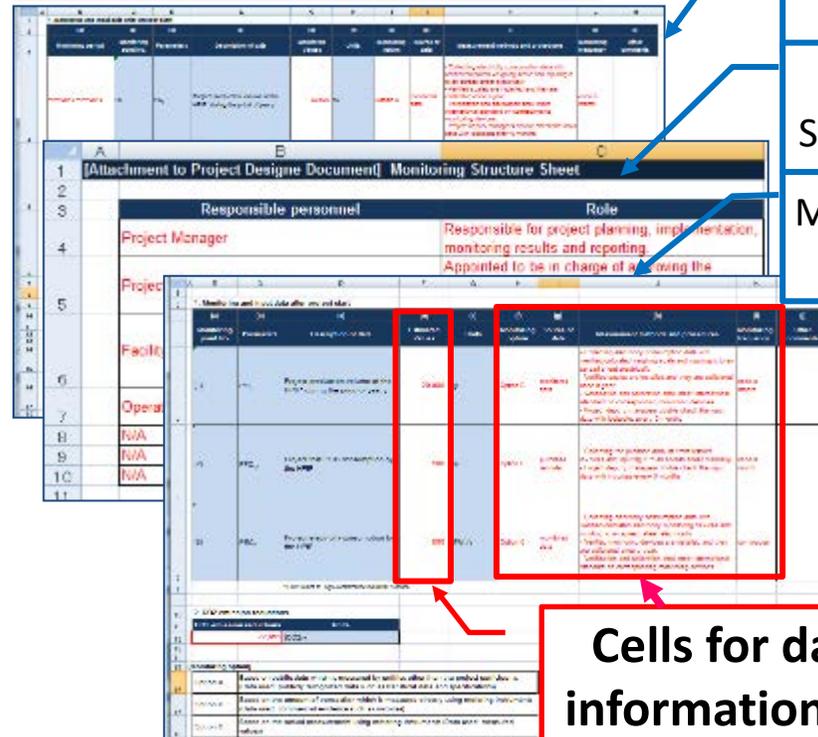
JCM methodology consists of the following:

- Approved Methodology Document
- Monitoring Spreadsheet
 - Monitoring Plan Sheet (including Input Sheet & Calculation Process Sheet)
 - Monitoring Structure Sheet
 - Monitoring Report Sheet (including Input Sheet & Calculation Process Sheet)

Approved Methodology Document



Monitoring Spreadsheet



- Monitoring Report Sheet
- Monitoring Structure Sheet
- Monitoring Plan Sheet

Cells for data & information input

PDD and Monitoring Plan

(Subject to further consideration and discussion with 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

Monitoring point ID	Parameter	Description of data	Parameter status	Units	Monitoring system	Access of data	Measurement methods and procedures	Monitoring frequency	Other comments
(1)	PH	Project goals when and under the "PH" during the period of year	GOOD	Y	PH	PH	Collecting data by computerized data and manual data recording and reporting to the PH. PH should be checked and corrected when necessary.	Once a year	
(2)	PH	Project total cost and investment of the PH	PH	Y	PH	PH	Collecting the data by computerized data and manual data recording and reporting to the PH. PH should be checked and corrected when necessary.	Once a year	
(3)	PH	Project monthly investment of the PH	PH	Y	PH	PH	Collecting the data by computerized data and manual data recording and reporting to the PH. PH should be checked and corrected when necessary.	Once a month	

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. Diagram showing 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 values stated 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
3	1/1/2013-31/12/2014	1)	PO _v	Project production volume at the HRIF 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 electronically -Verified scales are installed and they are calibrated once a year -Verification and calibration shall meet international standards on corresponding monitoring devices. -Project deputy managers double check the input data with logbooks every 6 months	once a month	
4	1/1/2013-31/12/2014	2)	FFO _v	Project fossil fuel consumption by the HRIF	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)	PEO _v	Project electricity consumption by the HRIF	500	MWh/y	Option C	monitored data	-Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting to an spread sheet electronically -Verified monitoring devices are installed and they are calibrated once a year -Verification and calibration shall meet international standards on corresponding monitoring devices	continuous	
7	*HRIF refers to High-Performance Industrial Furnace.										
8	2. CO2 emission reductions										
9	CO2 emission reductions										
10					22,557	1000t/y					
11											
12											
13											
14	Monitoring option:										
15	Option A	Based on public data which is measured by entities other than the project used: publicly recognized data such as statistical data and specific data									
16	Option B	Based on the amount of transaction which is measured directly using invoices used: commercial evidence such as invoices									
17	Option C	Based on the actual measurement using metering instruments (Data									

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

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