

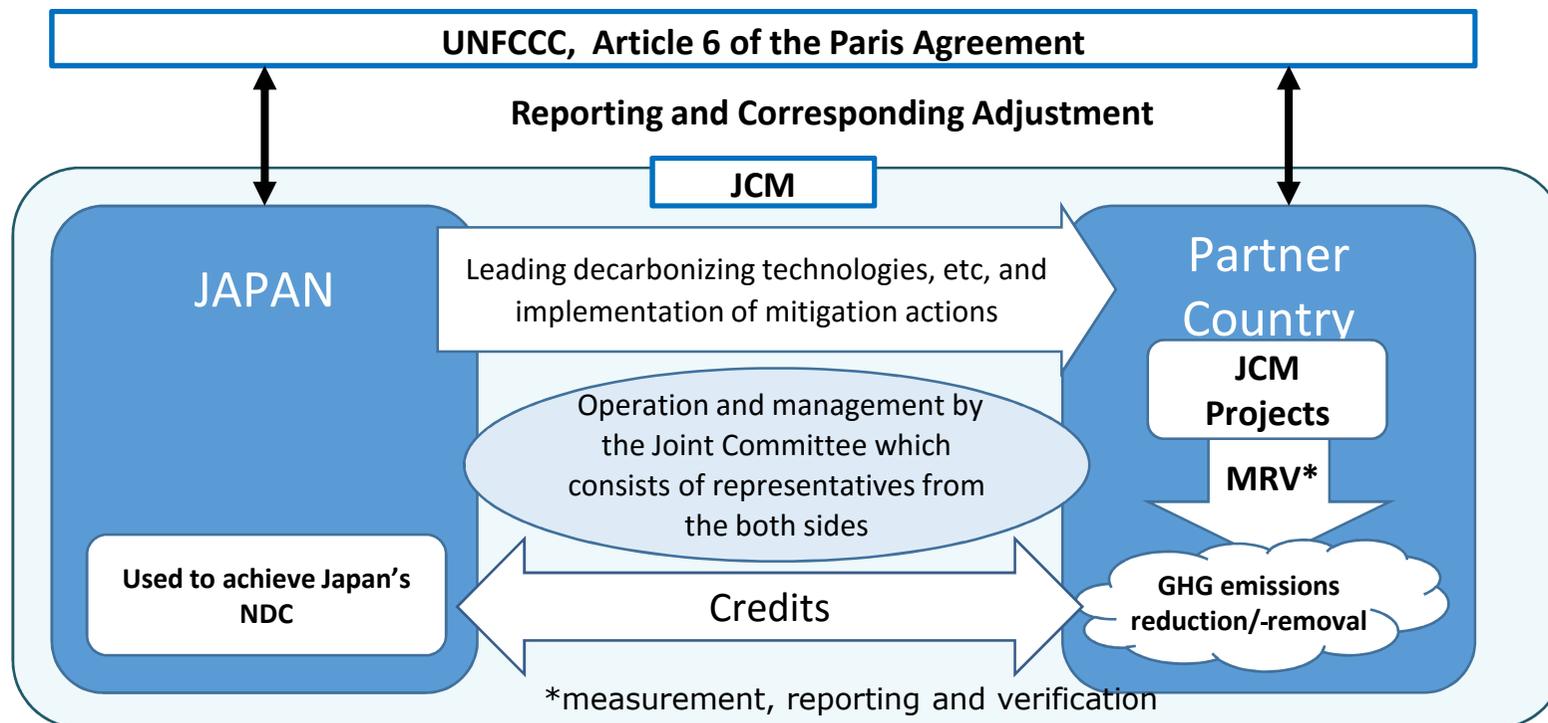
Recent Developments of The Joint Crediting Mechanism (JCM)

July 2021
Government of Japan

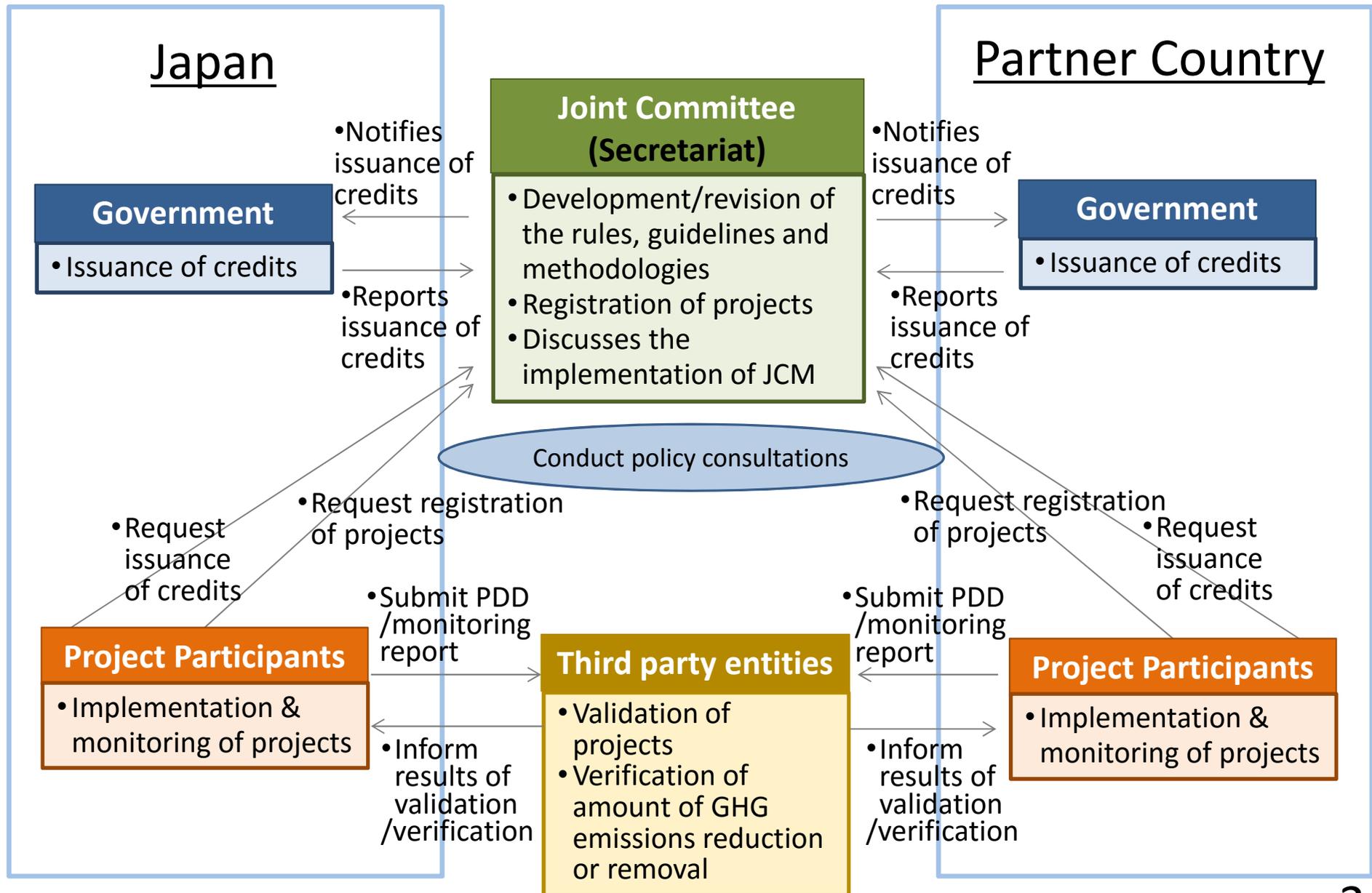
All ideas are subject to further consideration and discussion with partner countries

Basic Concept of the JCM

- Facilitating diffusion of leading decarbonizing technologies ,etc and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of partner countries.
- Appropriately evaluating contributions from Japan to GHG emission reductions or removals in a quantitative manner and use them to achieve Japan's NDC.
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals.



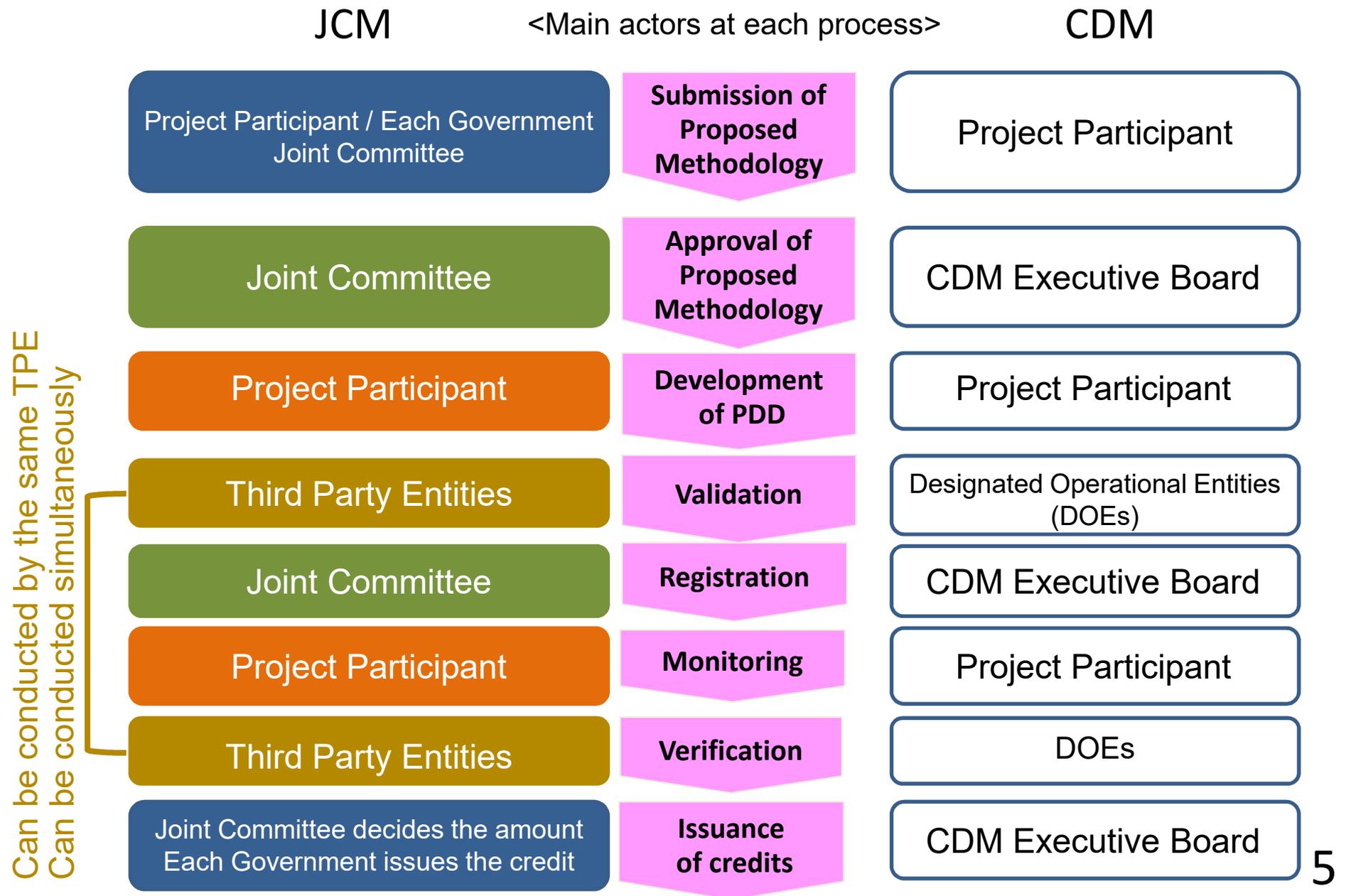
Scheme of the JCM



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.

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)



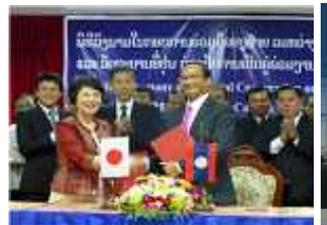
Kenya
Jun. 12, 2013
(Nairobi)



Maldives
Jun. 29, 2013
(Okinawa)



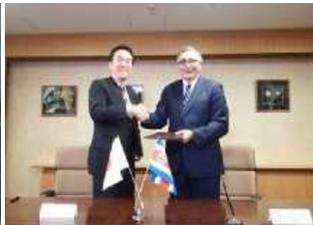
Viet Nam
Jul. 2, 2013
(Hanoi)



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)



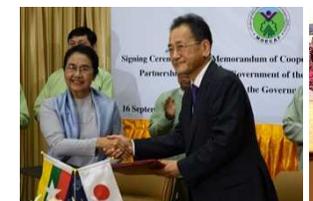
Mexico
Jul. 25, 2014
(Mexico City)



Saudi Arabia
May 13, 2015



Chile
May 26, 2015
(Santiago)



Myanmar
Sep. 16, 2015
(Nay Pyi Taw)



Thailand
Nov. 19, 2015
(Tokyo)



Philippines
Jan. 12, 2017
(Manila)

Japan's Nationally Determined Contribution (NDC) decided March 2020(Excerpt)

On March 30, 2020, Japan decided its Nationally Determined Contribution (NDC).

Information related to the JCM

Information to facilitate clarity, transparency and understanding

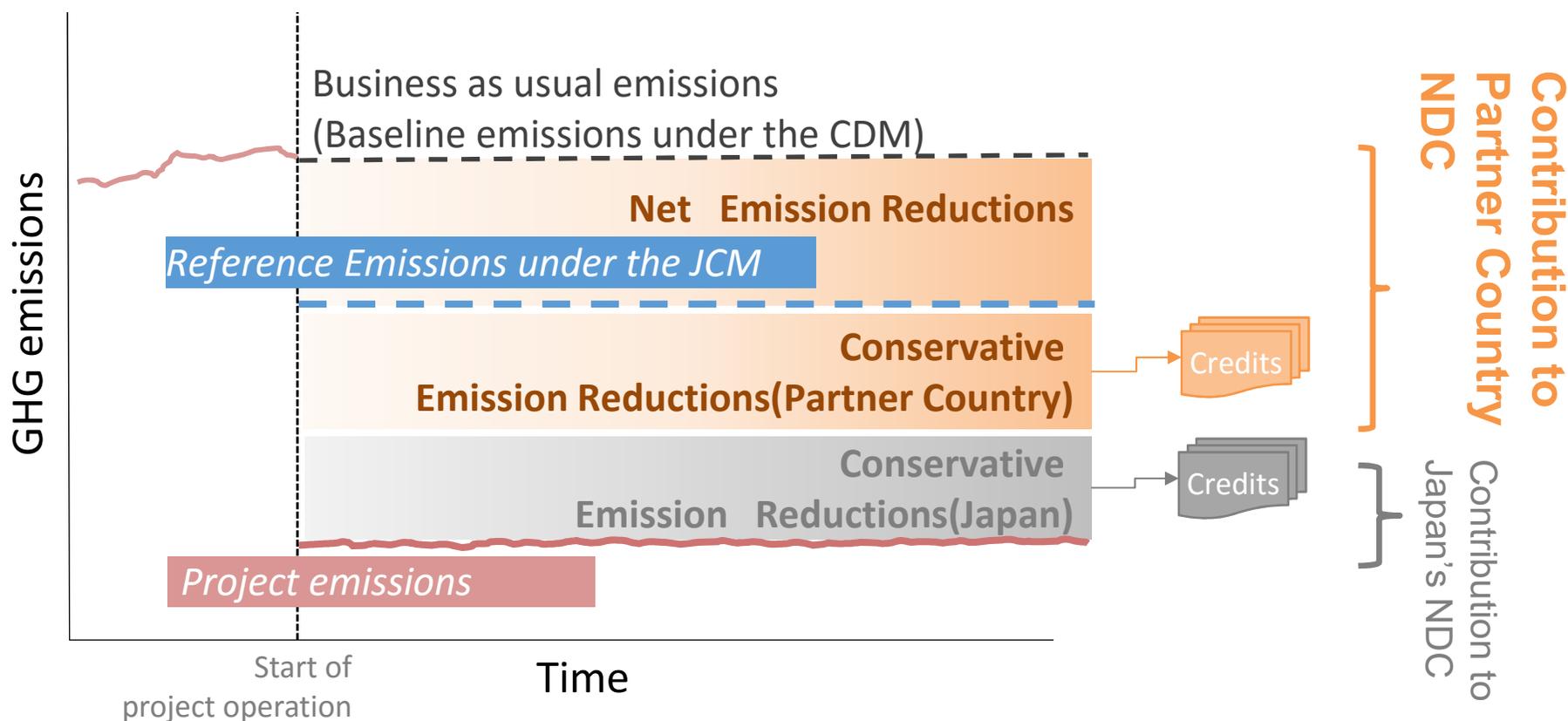
- The JCM is not included as a basis of the bottom-up calculation of Japan's emission reduction target, but the amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction.

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

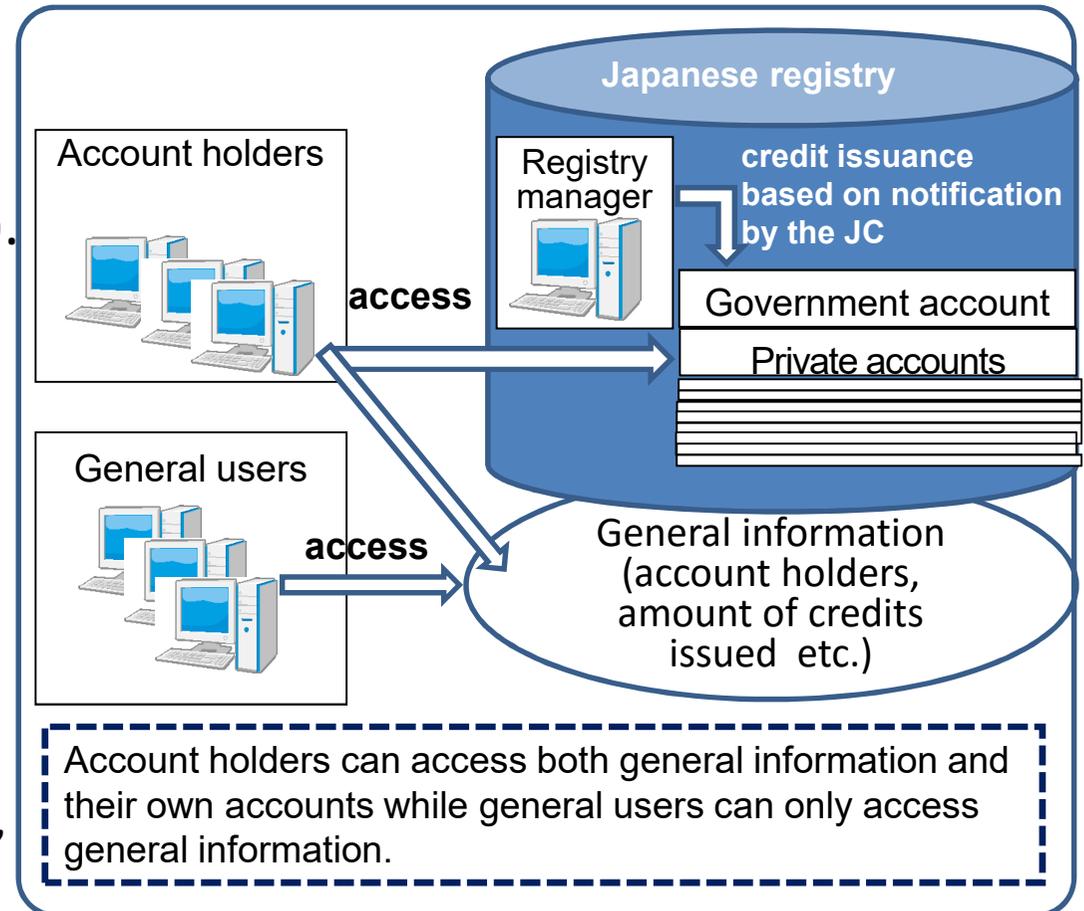
2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, 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 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.
 - Japan will 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

JCM Registry

Establishment & operation

- A registry will be established by each side (RoI (draft) para13 (b)).
- The registries need to share “Common specifications”, e.g.,
 - functions (e.g. issuance, retirement, holding, cancelation of credits)
 - account type (e.g. holding account, government holding account, cancellation account, and retirement account)
 - rules of serial number of the credit
 - information sharing
- Japan has established its registry and started operation in Nov. 2015.
- The partner countries will also establish their own registry.



JCM Website

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

Contents

- General information page
- Individual JCM Partner countries-
Japan page

Function

- Information sharing to the public, e.g.,
 - the JC decisions,
 - rules and guidelines,
 - methodologies,
 - projects,
 - call for public inputs/comments,
 - status of TPEs, etc.
- Internal information sharing for the JC members, e.g.,
 - File sharing for electric decisions by the JC

The screenshot shows the JCM HOME website. The header includes 'JCM HOME' and 'JCM Projects data (CSV) | Home'. The main content area is titled 'The Joint Crediting Mechanism (JCM)' and features a large image of a blue sky with clouds. Below the image, there is a section 'About the Mechanism' with a link 'Basic Concept of the JCM more...'. A 'News' section follows, displaying a table of recent news items with columns for 'Published date', 'Country', and 'Subject'. The table lists several news items from June 2016, including electronic decisions and calls for public comments on proposed methodologies.

Published date	Country	Subject
03 Jun 16	Indonesia	Electronic Decision by the JC
10 May 16	Indonesia	Electronic Decision by the JC
13 May 16	Indonesia	Call for public comments on a JCM proposed methodology (Indonesia) "Installation of energy saving air jet loom at textile factory" (13 May to 27 May 2016)
12 May 16	Indonesia	Electronic Decision by the JC
26 Apr 16	Cambodia	2nd Joint Committee in Phnom Penh
21 Apr 16	Cambodia	Electronic Decision by the JC
14 Apr 16	Indonesia	Call for public comments on a proposed revision to the approved methodology ID_AM009 "Replacement of conventional burners with regenerative burners for aluminum holding furnaces" (14 April to 26 April 2016)
14 Apr 16	Indonesia	Decision by the JC
12 Apr 16	Indonesia	Call for public comments on a proposed JCM methodology (Indonesia) "Reduction of Energy Consumption by Introducing an Energy-Efficient Old Corrugated Carton Processing System into a Cardboard Factory" (12 April to 26 April 2016)

Image of the general information page

The screenshot shows the JCM Partner Country - Japan website. The header includes 'JCM Partner Country - Japan' and 'Home | FAQ | Top'. The main content area is titled 'About the Mechanism' and features a link 'Basic Concept of the Joint Crediting Mechanism (JCM) more...'. A 'News' section follows, displaying a list of news items, including '07 Aug 13 The Bilateral Document Signed by Laos and Japan'.

Image of the individual JCM Partner countries-Japan page

Progress of the JCM in each partner country as of June 29, 2021

Partner country	Start from	No. of JC	No. of registered projects	No. of approved methodologies	Pipeline (JCM Financing Programme & Demonstration Projects in FY 2013-2021)
Mongolia	Jan 2013	6	5	3	9
Bangladesh	Mar 2013	4	3	3	5
Ethiopia	May 2013	4		3	1
Kenya	Jun 2013	4	2	3	3
Maldives	Jun 2013	4	1	2	3
Viet Nam	Jul 2013	8	14	15	35
Lao PDR	Aug 2013	4	1	3	6
Indonesia	Aug 2013	9	23	28	43
Costa Rica	Dec 2013	2	1	3	2
Palau	Apr 2014	5	3	1	5
Cambodia	Apr 2014	5	2	5	6
Mexico	Jul 2014	2		1	6
Saudi Arabia	May 2015	3	1	1	2
Chile	May 2015	3	1	2	5
Myanmar	Sep 2015	2	1	5	9
Thailand	Nov 2015	4	8	10	42
Philippines	Jan 2017	1		2	15
Total	17	70	66	90	197

Programmes by Government of Japan

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

JCM Promotion Scheme by METI

JCM Demonstration Projects

- JCM Demonstration Projects are implemented by NEDO (New Energy and Industrial Technology Development Organization), which demonstrate and verify the effectiveness of advanced, low-carbon technology with technical assistance and its GHG emission reduction effect in line with JCM rules and guidelines.
- Coverage of project cost: Cost of the Demonstration and verification of the projects
e.g. Cost of design, production, transfer, installation of equipment, technical adviser, JCM related procedure etc.
- **Eligibility for the JCM Demonstration Projects:**
 - To utilize the advanced Japanese technologies utmost and be deployed widely.
 - To aim at Larger GHG emission reduction effect is expected through the diffusion of the technology introduced and demonstrated through the projects ,
 - To consist the Project Participants of entities from both countries, only the Japanese entities can apply for the Projects. The projects shall be completed within 3 years.

JCM Feasibility Study (FS)

- The study is to develop the strategic projects which contribute to achieving 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 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 in dissemination of low-carbon technology, etc.

Demonstration Projects by METI* (as of February 2021)

* 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.

JCM Project Development & Outreach Programme by MOEJ

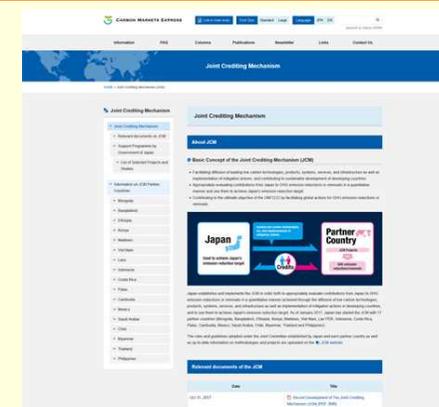
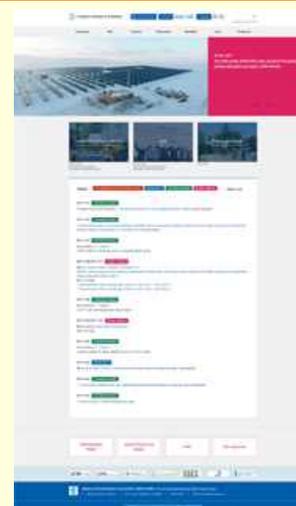
JCM Project Development

- To **identify barriers and needs** for JCM project development in partner countries in terms of technology, financing and partnership, and **provide solutions for overcoming barriers** through consultations.
- To **enhance overall capacity for JCM implementation** through facilitating understanding on the JCM rules & guidelines, and MRV methodologies by organizing workshops, seminars, training courses and site visits.
- **JCM Business Matching Site “JCM Global Match”** provides business matching opportunities for sellers and buyers of low and zero carbon technology for the JCM project.
<https://gec.force.com/JCMGlobalMatch/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.
<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/



JCM Model Projects by MOE

Budget for projects starting from FY2021 is 8.3 billion JPY (approx. USD 83 million) in total by FY2023 (including Co-Innovation)

(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 JCM credits issued

International consortiums
(which include Japanese entities)

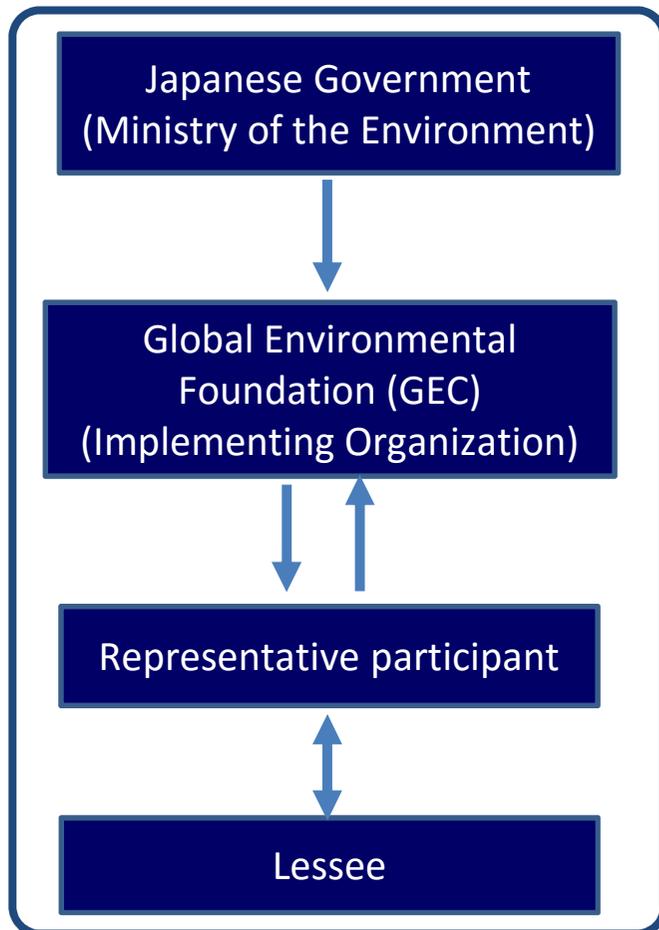


- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO₂ from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects: starting installation after financing is awarded and finishing installation within three years.

JCM Model Projects by MOE (JCM ECO Lease Scheme)

- “JCM Eco Lease” scheme is financial support for leasing businesses.
- Financial support is uniformly 10% of total leasing charge including leasing interest.
- Leasing period is at least 5 years.

Chart of JCM ECO Lease Scheme



< Merit >

- Shorter MRV period
 - Equivalent to leasing period (At least 5years)
- Simplified process
 - Less documents for application
 - No need to develop new methodology (Only applicable to approved methodology)

< Examples of eligible facilities/equipment >



PV



High Efficiency equipment

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

Budget for FY2021

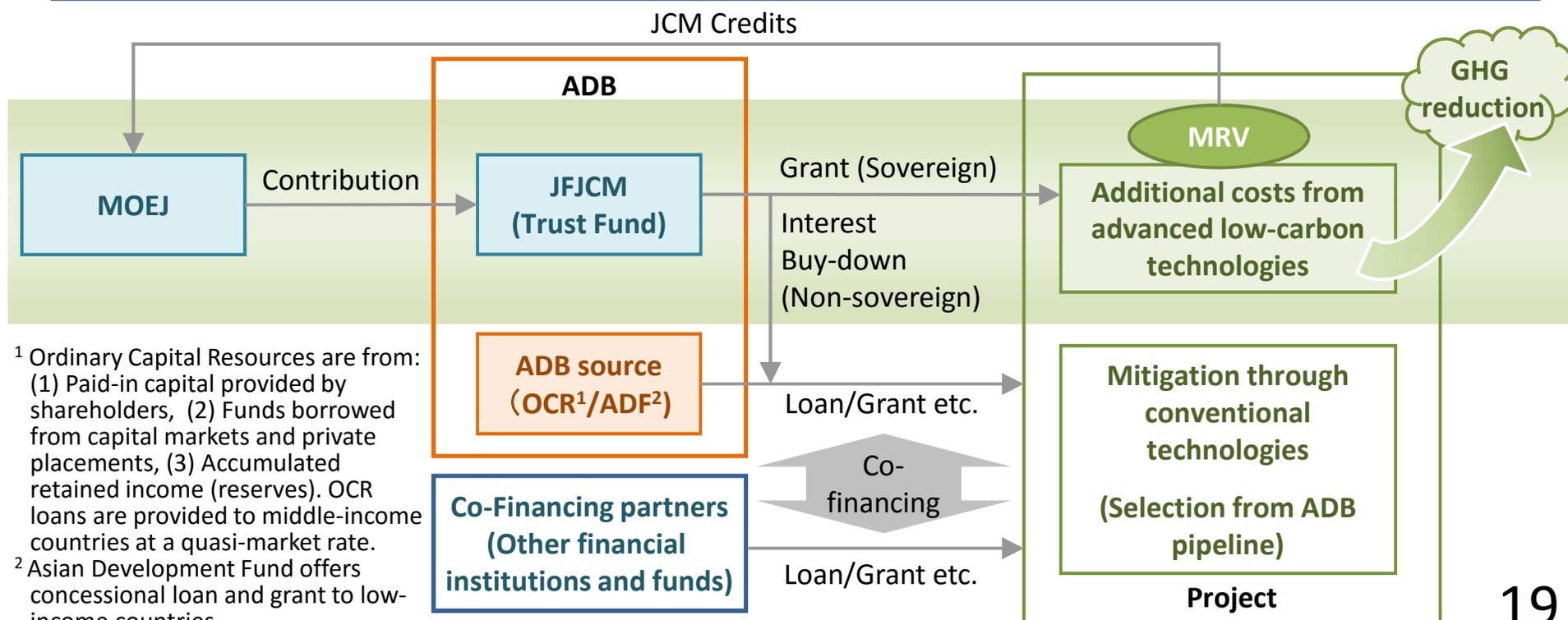
- JPY 1 billion (approx. USD 10 million)

Scheme

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

Purpose

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



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

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

JCM F-gas Recovery and Destruction Model Project by MOE

【Budget for FY 2021】

60million JPY (approx. 0.60 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 the 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 maximum (Ex. 1st year for scheme, 2nd year for facilities, 3rd year for recovery/destruction)

Eligible Projects

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

JCM Financing Programme by MOEJ (FY2013 ~ 2020) as of June 29, 2021

Total 186 projects (17 partner countries)

(● Model Project: 177 projects (including Eco Lease: 1 project), ■ ADB: 5 projects, ◆ REDD+: 2 projects, ▲ F-gas: 2 projects) Other 1 project in Malaysia

115 underlined projects have been started operation.

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
- 1.1MW Solar PV

Myanmar: 9 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
- 7.3MW Solar PV
- Brewing Systems and Biogas Boiler to Brewery Factory
- Energy Saving Equipment to Complex Buildings

Bangladesh: 5 projects

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

Saudi Arabia: 2 projects

- Electrolyzer in Chlorine Production Plant
- 400MW Solar PV

Maldives: 3 projects

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

Ethiopia: 1 project

- 120MW Solar PV

Kenya: 2 projects

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

Laos: 5 projects

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

Thailand: 40 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 Electrolyzer
- 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
- ▲ Introduction of Scheme for F-gas Recovery and Destruction
- 37MW Solar PV and Melting Furnace
- Heat Exchanger in Fiber Factory
- 15MW Biomass Power Plant in Sugar Factory
- 8.1MW Solar PV
- Centrifugal Chiller to Machinery Factory
- 5MW Solar PV
- 2.6MW Solar PV
- 2.5MW Solar PV with Blockchain Technology
- 2MW Solar PV2
- 30MW Floating Solar PV
- Chiller & PV
- Once-through Boiler in Garment Factory

57 projects with * have been registered as JCM projects.

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: 32 projects

- Digital Tachographs*
- Amorphous transformers 1*
- Air-conditioning in Hotel 1*
- 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*
- 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
- ▲ Collection Scheme and Dedicated System of F-gas
- Biomass Boiler to Chemical Factory
- Air-Conditioning System and Air Cooled Chillers
- 49MW solar PV
- 57MW solar PV
- Biomass Boiler to Soluble Coffee Manufacturing Plant
- Once-through Boiler to Food Factory
- Biomass Co-generation System to Food Factory
- Air-conditioning in Hotel 2
- 2MW Solar PV
- Waste to Energy Project in Bac Ninh Province
- LED Lighting to Office Building
- 9MW Solar PV to Factories
- 10MW Rice Husk Power Plant

Mexico: 6 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
- 30MW Solar PV2

Philippines: 15 projects

- 15MW Hydro Power Plant
- 1.53MW Rooftop Solar PV
- 1MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV
- 4MW Solar PV
- 2.5MW Rice Husk Power Generation
- 18MW Solar PV
- 0.16MW Micro Hydro Power Plant
- 33MW Wind Power
- 19MW Hydro Power Plant
- 2MW Solar PV (Eco Lease)
- Biogas Power Generation and Fuel Conversion
- 29MW Binary Geothermal Power Generation
- 60MW Solar PV
- 20MW Flash Geothermal Power Plant

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

Indonesia: 40 projects

- Centrifugal Chiller at Textile Factory*
- 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 Plant 1
- Looms in Weaving Mill*
- LED Lighting to Sales Stores
- Industrial Wastewater Treatment System
- 0.5MW Solar PV*
- Gas Co-generation system
- CNG-Diesel Hybrid Public Bus
- Injection Molding Machine 3
- 10MW Hydro Power Plant 2
- 5MW Hydro Power Plant
- Thermal Oil Heater System
- Absorption Chiller*
- High Efficiency Autoclave
- Rehabilitation of Hydro Power Plant
- 12MW Biomass Power Plant
- 2MW Mini Hydro Power Plant
- Boiler to Carton Box Factory
- 6MW Hydro Power Plant 1
- 6MW Hydro Power Plant 2
- 4.2MW Solar PV
- 8MW Mini Hydro Power Plant
- 3.3MW Rooftop Solar PV
- 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

Costa Rica: 2 projects

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

Chile: 5 projects

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

Reference:
Technical Details for the JCM

(Subject to further consideration and discussion with partner countries)

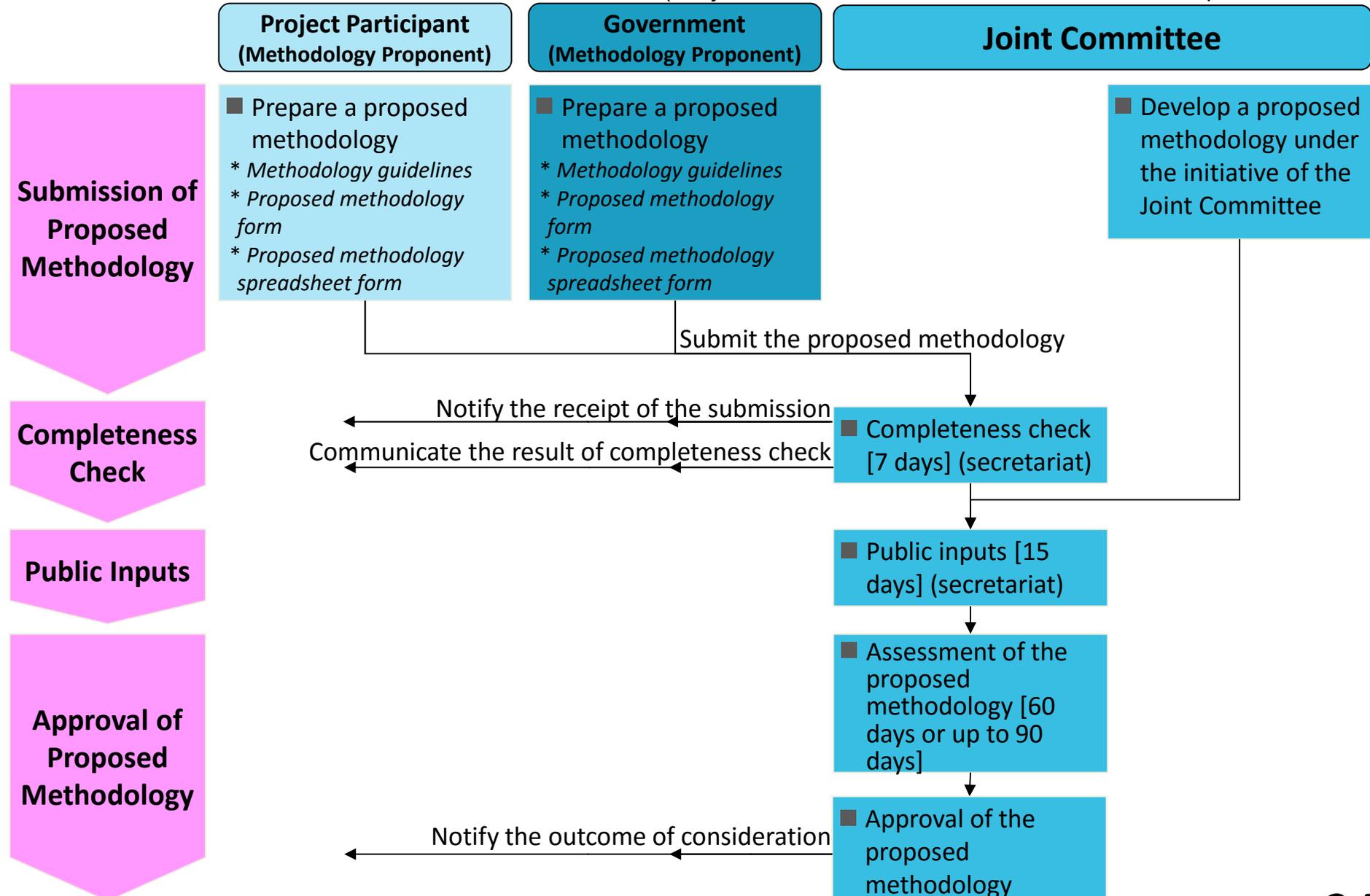
Necessary documents for the JCM

(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)

Project Participant

Third-Party Entity

Joint Committee

Government

Development of PDD

- Complete a PDD and develop a monitoring plan
 - * PDD form and Monitoring Spreadsheet
 - * PDD and monitoring guidelines
- Complete an MoC Form
 - * MoC Form

Submit the draft PDD and MoC, and request for validation and public inputs

Notify the receipt of the submission

Validation

Validation and verification can be conducted simultaneously or separately.

- Validate a project
- Prepare a validation report
 - * Validation and verification guidelines
 - * Validation report form

- Public inputs[30 days] (secretariat)

Submit the validation report

Registration

- Complete a registration request form
 - * Registration request form

Submit registration request form, the validated PDD and MoC, and the validation report and request for registration

Notify the receipt of the request

Notify the conclusion

Notify the registration

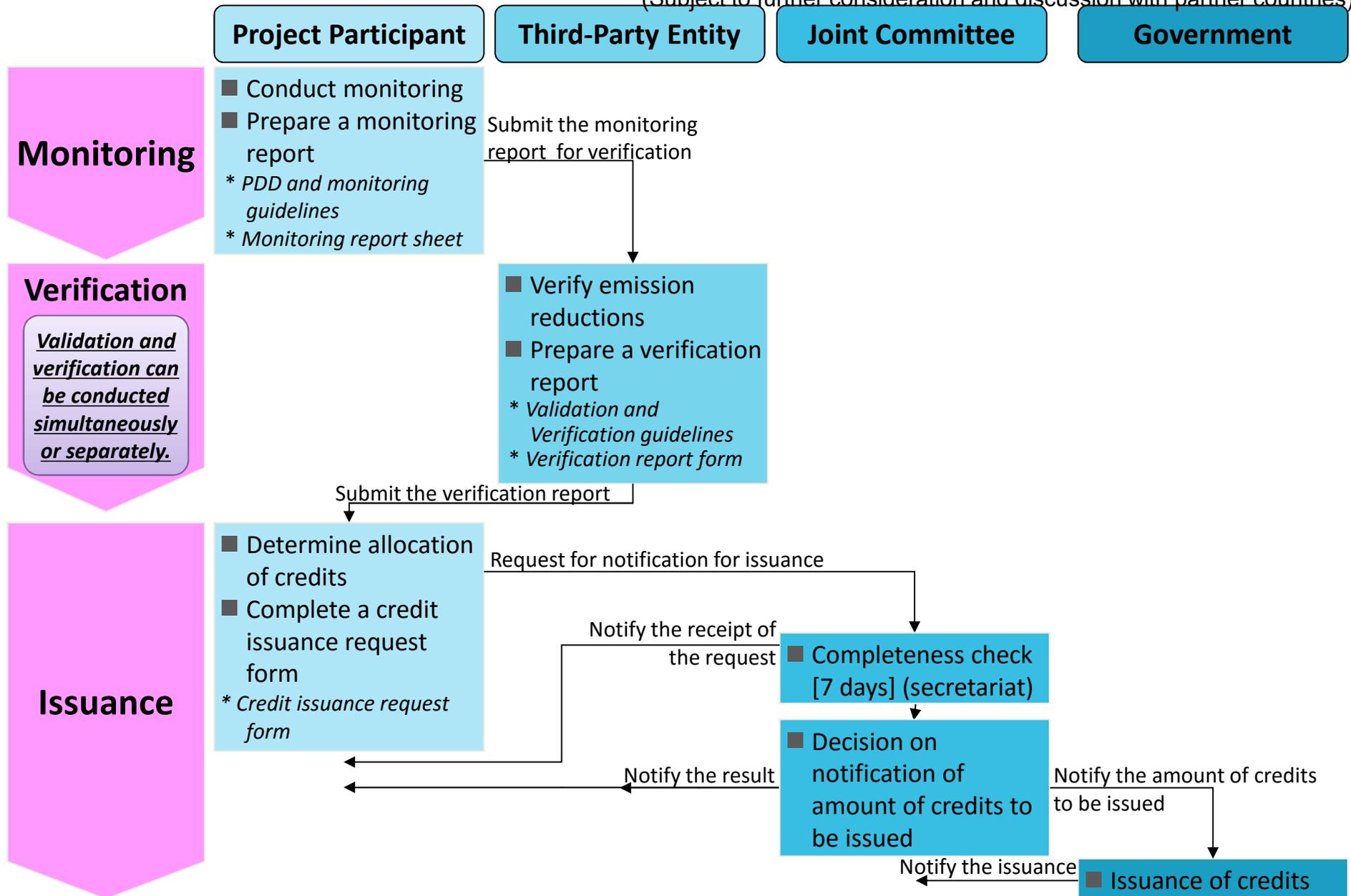
- Completeness check [7 days] (secretariat)

- Registration

Notify the registration

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

(Subject to further consideration and discussion with partner countries)



Rules of Procedures for the Joint Committee

(Subject to further consideration and discussion with partner countries)

Members

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

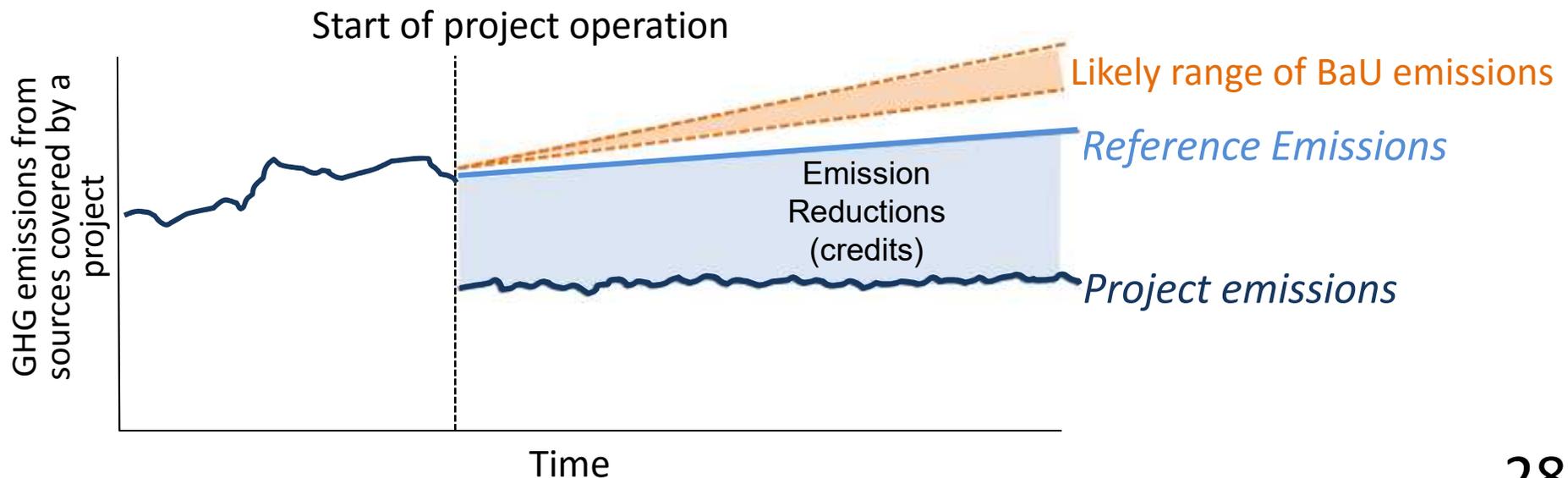
Confidentiality: Members of the JC, Secretariat, etc. respect confidentiality.

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)

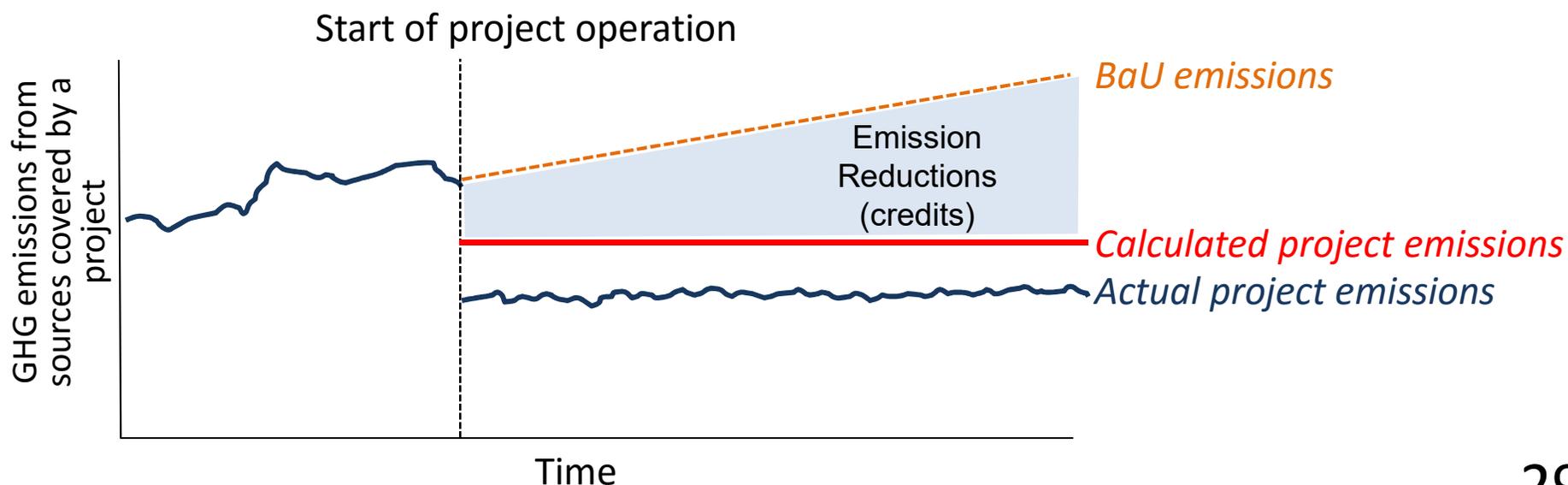
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the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

1. 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)	PG ₁	Project production volume at the HPP ¹ during the period of year y	20,000	ty	Option C	monitored data	-Collecting electricity consumption data with verified calibrated weighing scale and routing 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 should check the input data with logbooks every 6 months	once a month		
(2)	PFC ₁	Project fossil fuel consumption by the HPP ¹	500	ty	Option B	purchase records	-Collecting the purchase amount from retailer invoices and routing it to an spread sheet manually -Project deputy managers should check the input data with invoices every 6 months	once a month		
(3)	PEC ₁	Project electricity consumption by the HPP ¹	500	MWh/y	Option C	monitored data	-Collecting electricity consumption data with verified calibrated electricity monitoring devices and routing it 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		

[Attachment to Project Designe Document] Monitoring Structure Sheet	
Responsible personnel	
Role	
Project Manager	Responsible for project planning, implementation, monitoring results and reporting. Appointed to be in charge of approving the

2. CO2 emission reductions	
CO2 emission reductions	Units
22.81	tCO2/y

- 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

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.
Monitoring Operators	Appointed to be in charge of monitoring structure (data collection and storage), including

Roles and responsibilities of personnel for monitoring should be described

Monitoring Plan

Monitoring point No.	Parameters	Description of data	Estimated Values	Units	Monitoring option	Source of data	Measurement methods and procedures	Monitoring frequency	Other comments
(1)	PC _v	Project production volume at the HPIF during the period of year	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 standard on corresponding monitoring devices. - Project deputy managers double check the input data with logbooks every 6 months	once a month	
(2)	PFC _v	Project fossil fuel consumption by the HPIF	800	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	
(3)	PEC _v	Project electricity consumption by the HPIF	800	MWh/ly	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	

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

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 period

Cells for data input (ex post)

2	(a) Monitoring period	(b) Monitoring point No.	(c) Parameters	(d) Description of data	(e) Monitored Values	(f) Units	(g) Monitoring option	(h) Source of data	(i) Measurement methods and procedures	(j) Monitoring frequency	(k) Other comments
3	2013-2014	(1)	PO _v	Project production volume at the HPIF ¹ 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)	PFO _v	Project fossil fuel consumption by the HPIF	500	ty	Option E	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 _v	Project electricity consumption by the HPIF	500	MWhly	Option C	monitored data	- Collecting electricity consumption data with verified/calibrated electricity monitoring devices and inputting to an spread sheet electrically - Verified monitoring devices are installed and they are calibrated once a year - Verification and calibration shall meet international standard on corresponding monitoring devices	continuous	
6	<small>¹ HPIF refers to High-Performance Industrial Furnace.</small>										
9	2. CO2 emission reductions										
10	CO2 emission reductions				Units						
11	22,851				tCO2ly						
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 metering instruments (Data used: commercial evidence such as invoices)									
17	Option C	Based on the actual measurement using metering instruments (Data used: metering instruments)									

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

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