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# Recent Developments of the Joint Crediting Mechanism (JCM)

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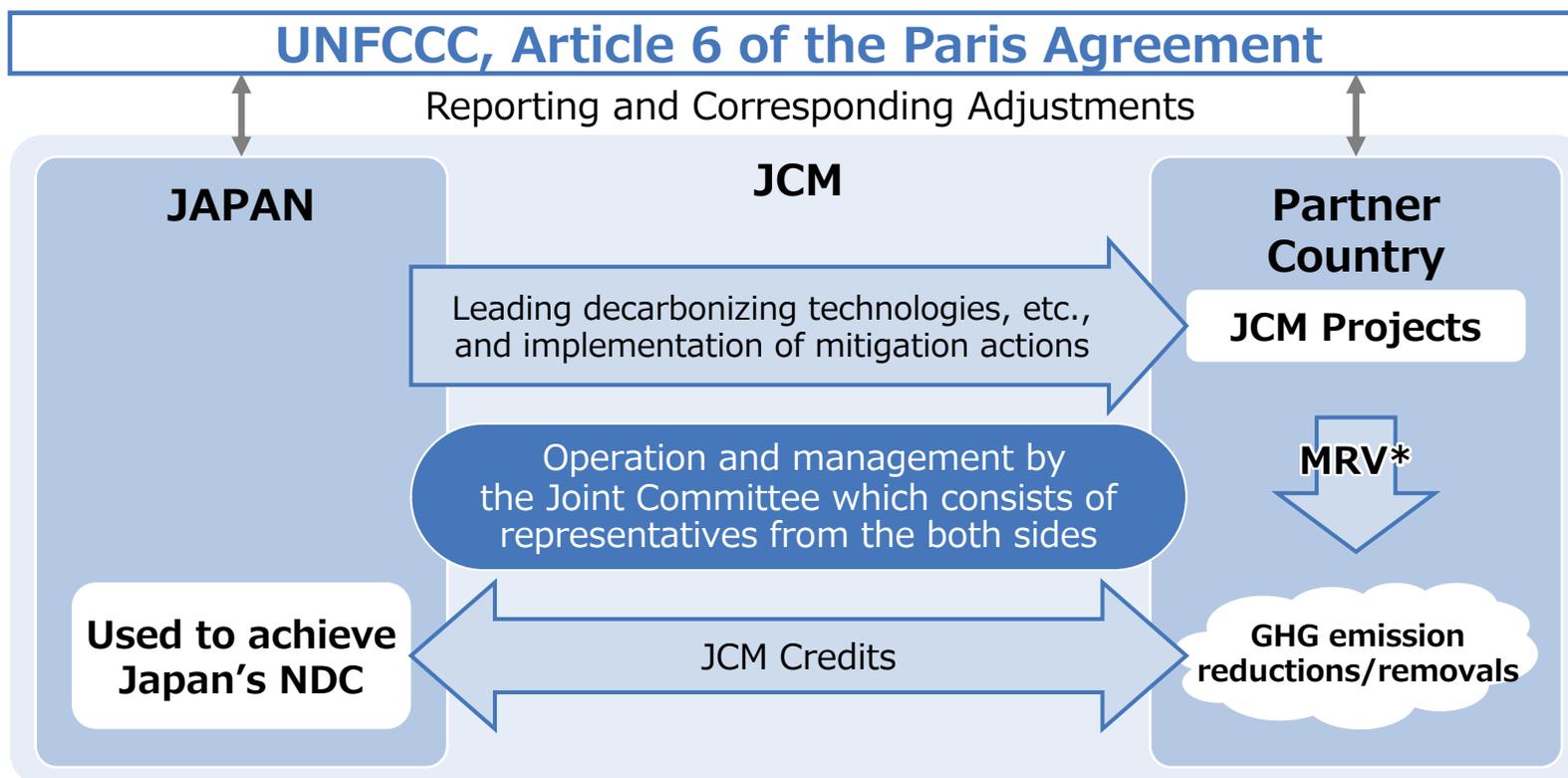
April 2023  
Government of Japan

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

# Basic Concept of the JCM

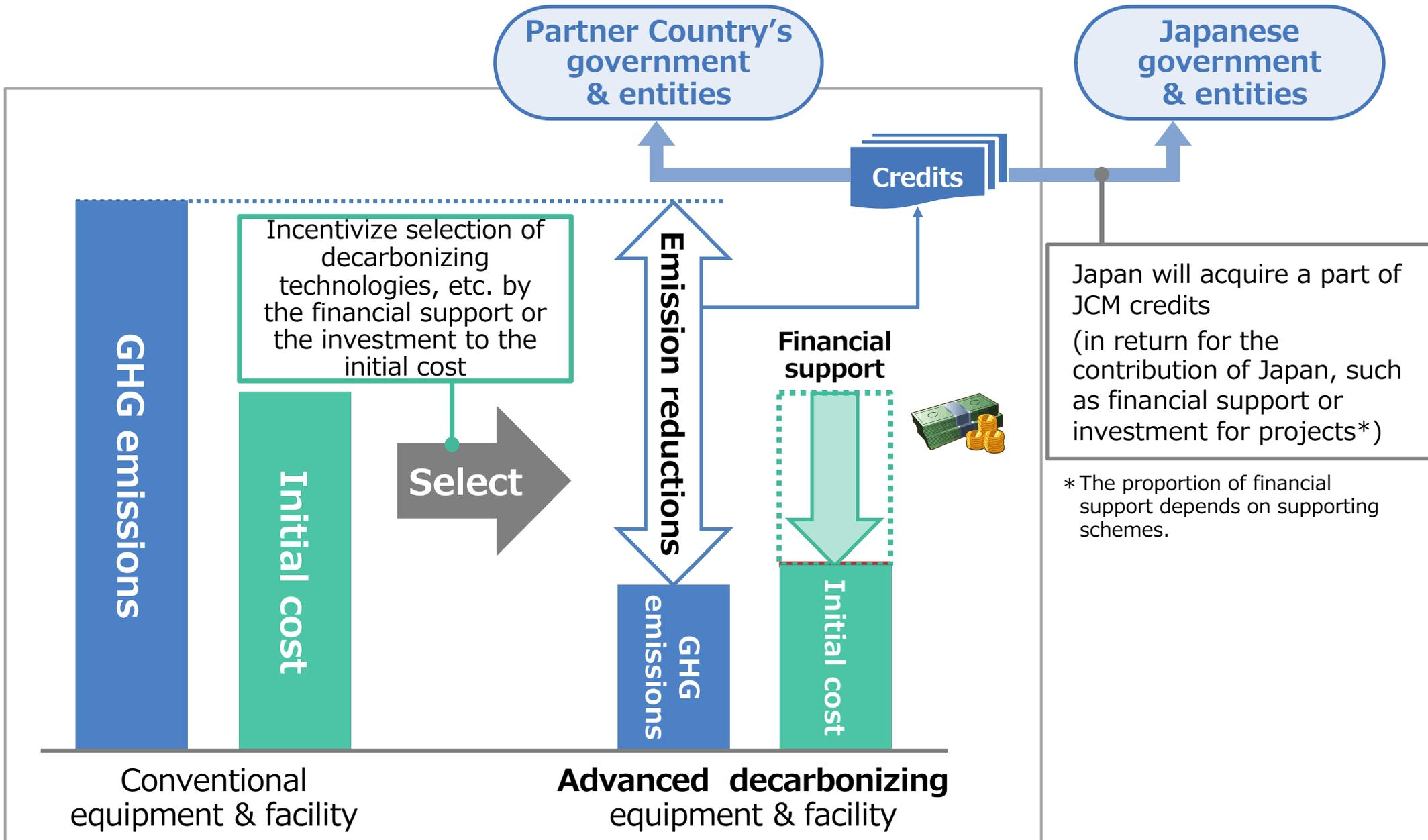
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- Facilitate diffusion of leading decarbonizing technologies and infrastructure, etc., through investment by Japanese entities, thereby contributing to GHG emission reductions or removals and sustainable development in partner countries.
- Contribute 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.



\*measurement, reporting and verification

# Contribution from Japan (example)



# JCM Partner Countries (26 countries)



Mongolia

Jan. 8, 201 (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)



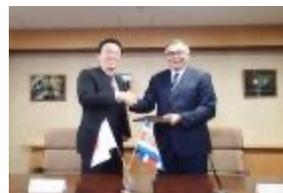
Lao PDR

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)



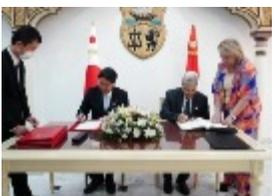
Philippines

Jan. 12, 2017 (Manila)



Senegal

Aug. 25, 2022 (Dakar)



Tunisia

Aug. 26, 2022 (Tunis)



Azerbaijan

Sept. 5, 2022 (Baku)



Moldova

Sept. 6, 2022 (Chisinau)



Georgia

Sept. 13, 2022 (Tbilisi)



Sri Lanka

Oct. 10, 2022 (Colombo)



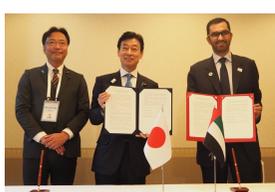
Uzbekistan

Oct. 25, 2022 (Tashkent)



Papua New Guinea

Nov. 18, 2022 (Sharm-el-Sheikh)



United Arab Emirates

Apr. 16, 2023 (Sapporo)

# Projects supported by the JCM financing programmes

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## 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 Corporation, 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

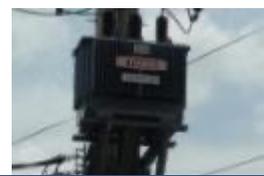


Energy-saving of mobile communications base transceiver stations, KDDI Corp. Indonesia

## Energy efficiency [Urban sector]

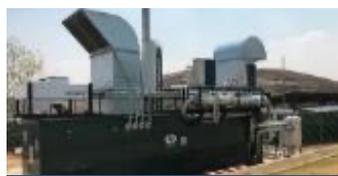


LED street lighting system with wireless network control, MinebeaMitsumi, Cambodia



Amorphous transformers in power distribution, Hitachi Materials, Vietnam

## Waste



Power Generation with Methane Gas Recovery System, NTTDATA, Mexico



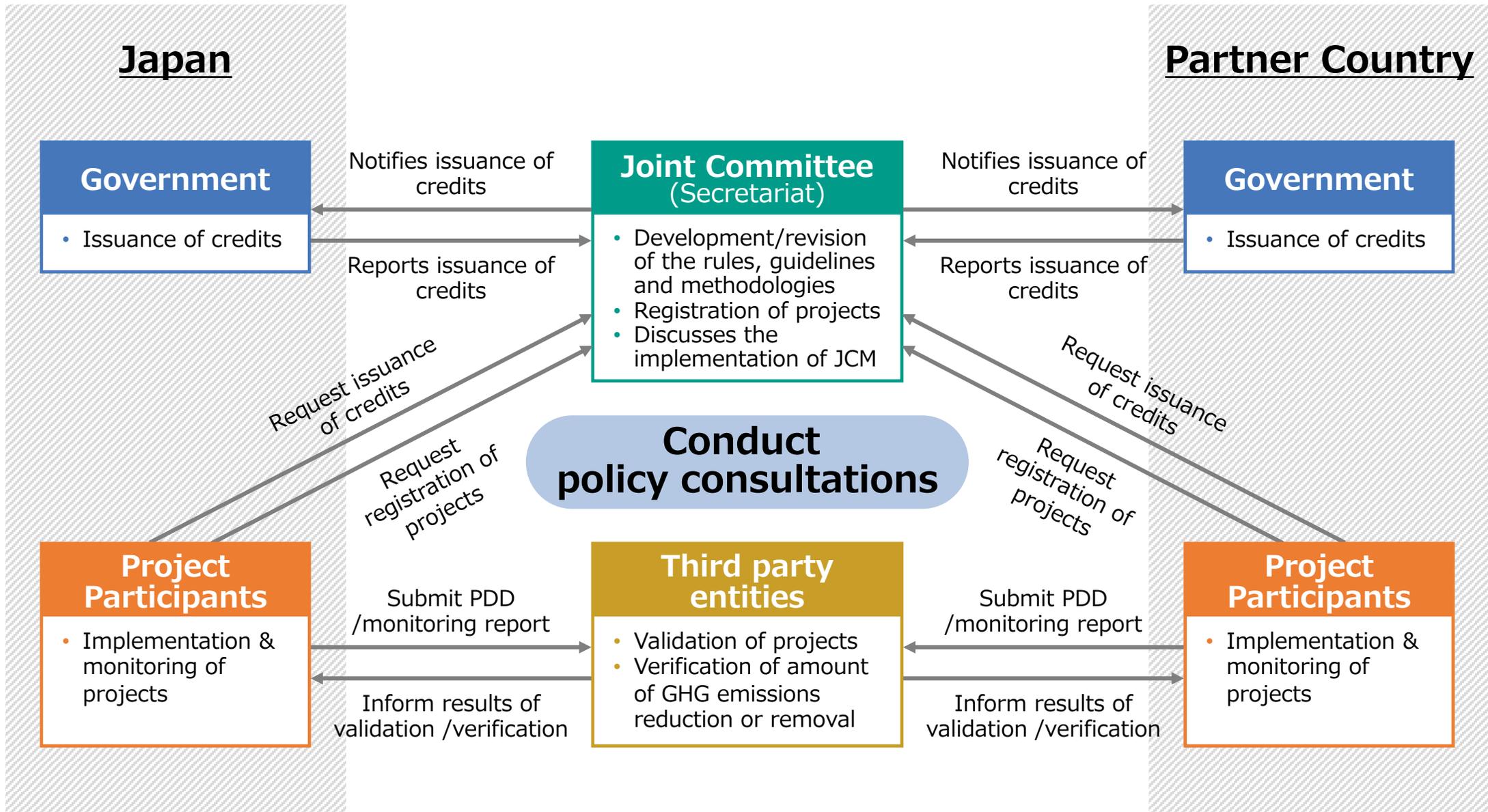
Waste to Energy Plant, JFE engineering, Myanmar

## Transport



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

# Scheme of the JCM

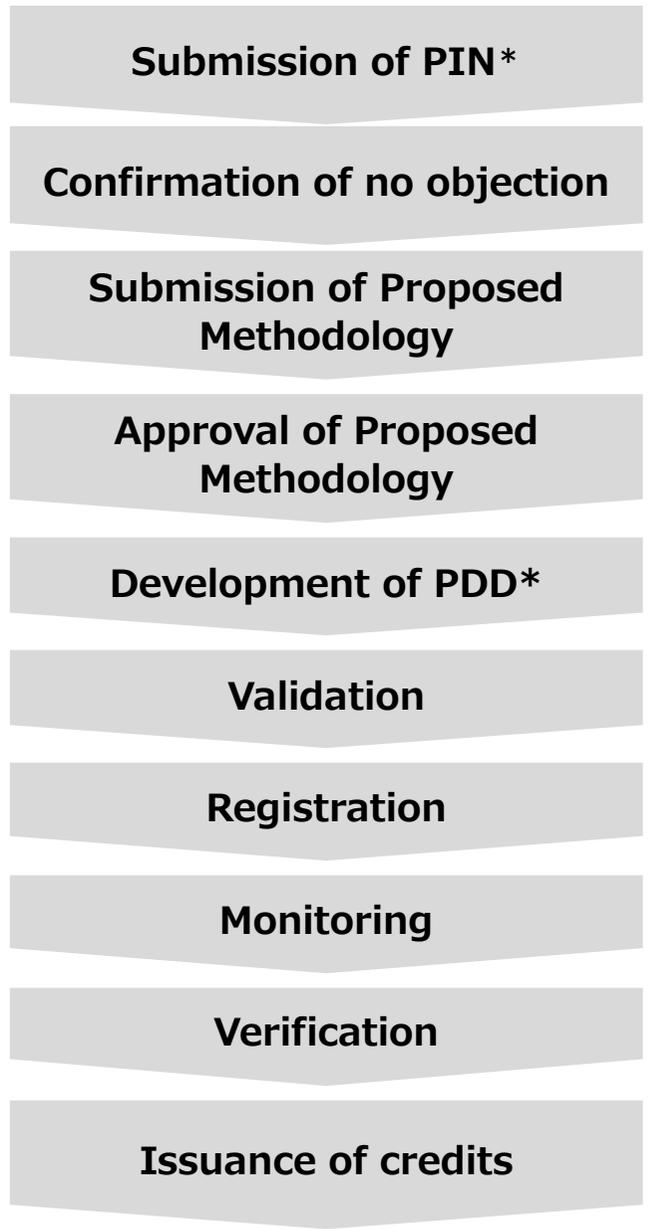


1. The Joint Committee (JC) consists of representatives from both Governments.
2. The JC develops rules and guidelines necessary for the implementation of the JCM.
3. The JC confirms no objection or objection to a project idea note (PIN).  
\* Under consultation with partner countries. Please refer to the next page.
4. The JC determines either to approve or reject the proposed methodologies, as well as develops JCM methodologies.
5. The JC designates the third-party entities (TPEs).
6. The JC decides on whether to register JCM projects and the percentage of JCM credit allocation.
7. Each Government establishes and maintains a registry.
8. Each Government issues the notified amount of JCM credits to its registry on the basis of notification for issuance of JCM credits by the JC.

# Project Cycle of the JCM

Note: For the latest information on JCM rules and guidelines, including the above PIN procedures adopted with each Partner Country government, please refer to each partner country page on the JCM website.

Can be conducted by the same TPE  
Can be conducted simultaneously



<Terminology>

- **PIN (Project Idea Note):** A document used to explain the outline of the project to the partner country and confirm whether there is an objection.
- **PDD (Project Design Document):** A document that includes monitoring methods and estimated emission reductions. Required for project registration.

# 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.

\*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-CO<sub>2</sub> by fiscal year 2030. Japan will appropriately count the acquired credits to achieve its NDC.

## 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 consistent with the guidance on cooperative approaches, referred to in Article 6, paragraph 2 of the Paris Agreement (Decision 2/CMA.3).

## ■ 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 and Private-Sector JCM projects (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-, and develops and disseminates the guidance on the formulation of JCM project financed by the private sectors in FY2022"

## <Background>

- In order to achieve the JCM target of "cumulative international emission reduction/removal of approximately 100 million t-CO2 by 2030 through public-private partnership" based on the Global Warming Countermeasures Plan(approved by the Cabinet in October 2021), in addition to the conventional JCM project formation using financial support from the government, there is a need to promote the formation of JCM projects invested and implemented by private companies without any governmental financial supports for the purpose of obtaining JCM credits (private sector JCM), in light of the growing interest in the use of JCM credits on the part of private-sector companies in recent years.
- In FY2021, the "Study Group on Measures to Promote the Use of JCM by the Private Sector" released "Recommendations" including the following.
  - Significance of utilization of private-sector JCM and expectations from the private sector for the development of the system: Necessity of developing specific procedures for the JCM system, etc.
  - Promotion of partner countries' understanding of the concept of credit allocation, etc.: Importance of improving foreseeability through the advance inquiry process, etc.

## Promotion through the formulation of "Guidance on the development of Private-Sector JCM projects invested and implemented by private companies without any governmental financial supports"

- Introduction of the following new procedure, which is under discussion with each JCM Partner country:
  - Making an advance inquiry to the partner countries on the "Project Idea Note (PIN)" which includes the project contents and credit allocation plan
  - Confirming whether there are any objections at the Joint Committee prior to the implementation of a JCM project.
- Explanation of matters to be considered when proposing a private-sector JCM project by PIN and requesting credit allocation (e.g., the concept of financial and non-financial contributions).
- Support measures for implementation of private-sector JCM projects, points to keep in mind when dealing with human rights, etc., and introduction of the support desk.
- This guidance will be updated as necessary based on future revisions of JCM rules with JCM partner countries and the status of private-sector JCM projects.

## <JCM Project Cycle>

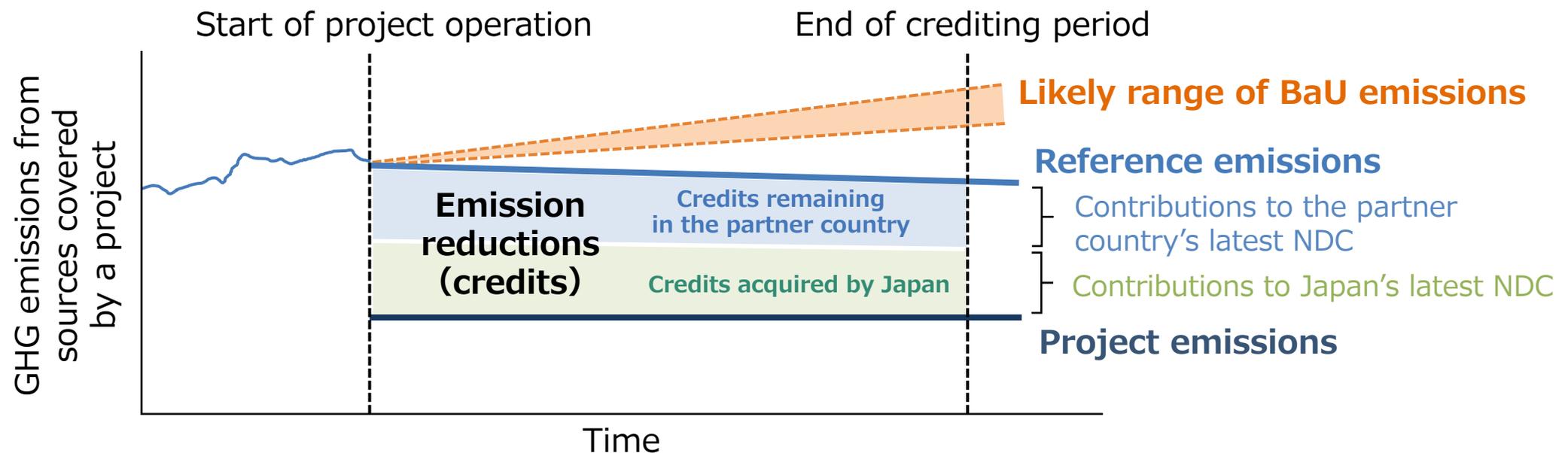


Newly added process (under discussion with partner countries)  
 ※To be implemented for all JCM projects

# JCM's contribution to NDC

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- Emission reductions to be credited are defined as the difference between reference emissions and project emissions.
- The reference emissions are established in a manner that the proposed project contributes to the achievement of the latest NDC of a partner country.
- The credits acquired by Japan will be used towards the achievement of Japan's NDC.
- The credits remaining in the partner country will contribute to the achievement of the partner country's NDC.



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

The screenshot shows the JCM HOME website. The header includes the JCM logo and the text 'HOME'. Below the header, there is a navigation menu on the left with items like 'About The Mechanism', 'Third Party Entity', 'Rules and Guidelines', 'Project Cycle Search', 'Mongolia - Japan Page', 'Cambodia - Japan Page', 'Indonesia - Japan Page', 'Kenya - Japan Page', 'Madagascar - Japan Page', 'Malawi - Japan Page', 'Lao - Japan Page', 'Indonesia - Japan Page', 'Cuba - Japan Page', 'Palau - Japan Page', 'Cambodia - Japan Page', 'Mexico - Japan Page', 'Senegal - Japan Page', 'China - Japan Page', 'Myanmar - Japan Page', 'Thailand - Japan Page', 'Contact us', and 'Annual transactions'. 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 for 'About the Mechanism' and a 'News' section with a table of recent updates.

Published date	Country	Subject
02 Jun 10	Indonesia	<a href="#">Indonesia Request for JCM</a>
10 May 10	Indonesia	<a href="#">Indonesia Request for JCM</a>
12 May 10	Indonesia	<a href="#">Call for public comments on a proposed decision (Indonesia) "Reduction of emissions at the PT Krakatau Steel Factory" (12 May to 27 May 2010)</a>
12 May 10	Indonesia	<a href="#">Electronic Decision by the JC</a>
20 Apr 10	Cambodia	<a href="#">Final Joint Decision on a Methodology</a>
21 Apr 10	Cambodia	<a href="#">Indonesia Request for JCM</a>
14 Apr 08	Indonesia	<a href="#">Call for public comments on a proposed decision by the approved methodology (4. A1000) "Implementation of non-ferrous furnaces with regenerative burners for aluminum holding furnaces" (16 April to 20 April 2008)</a>
14 Apr 10	Indonesia	<a href="#">Indonesia Request for JCM</a>
12 Apr 08	Indonesia	<a href="#">Call for public comments on a proposed JCM methodology (Indonesia) "Reduction of Energy Consumption by Introducing an Energy-Efficient Old Computer Control System into a Coal-fired Power" (12 April to 20 April 2008)</a>

### ▼Image of the individual JCM Partner countries-Japan page

The screenshot shows the JCM Partner Country - Japan website. The header includes the JCM logo and the text 'Partner Country - Japan'. Below the header, there is a navigation menu on the left with items like 'News', 'About The Mechanism', 'Joint Committee', 'Rules and Guidelines', 'Third Party Entity', 'Methodologies', 'Project Cycle Search', 'Contact us', and 'Annual transactions'. The main content area is titled 'About the Mechanism' and features a section for 'Basic Concept of the Joint Crediting Mechanism (JCM) more...' and a 'News' section with a list of recent updates.

Published date	Country	Subject
07 Aug 18		<a href="#">The Revised Document Signed by Laos and Japan</a>

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# **Japan's support for the JCM partner countries**

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# Overview of Japan's support for the JCM partner countries

	Programme	Type of support
<b>Ministry of the Environment</b>	JCM Model Project*	Subsidy
	F-gas Recovery and Destruction Model Project*	Subsidy
	Japan Fund for the JCM (JF JCM) - managed by ADB	Grant (Sovereign) / Interest Buy-down (Non-sovereign)
	JCM support programme by UNIDO*	Grant for projects, technical cooperation
	Project development/capacity building/MRV support	Technical cooperation
<b>Ministry of Economy, Trade and Industry</b>	JCM Feasibility Study	Technical cooperation
	JCM Demonstration Projects	Government-commissioned project
<b>Forestry Agency</b>	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

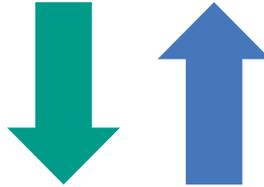
18

Budget for projects starting from FY 2023 is approx. **15 billion JPY** (approx. **USD 109 million**) in total by FY2025 (1 USD = 137 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 CO<sub>2</sub> 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

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【Budget for FY2023】  
61 million JPY (approx. 0.45million USD)  
(1 USD = 137 JPY)

**Government  
of Japan**

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

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

## International consortiums (which include Japanese entities)

Manufacturers of  
equipment which  
uses F-gas

Users of  
equipment which  
uses F-gas

Entities for recovery and  
transportation of used F-gas  
(recycling or scrap entities)

Entities for destruction of used  
F-gas (may use existing  
facility for destruction)

### Purpose

To recover and destroy F-gas (GHG except for energy-related CO<sub>2</sub>, 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 FY2023

JPY 0.2 billion (approx. USD 1.5 million)

※Supplementary Budget for FY2022: JPY 2.5 billion (approx. USD 18 million)

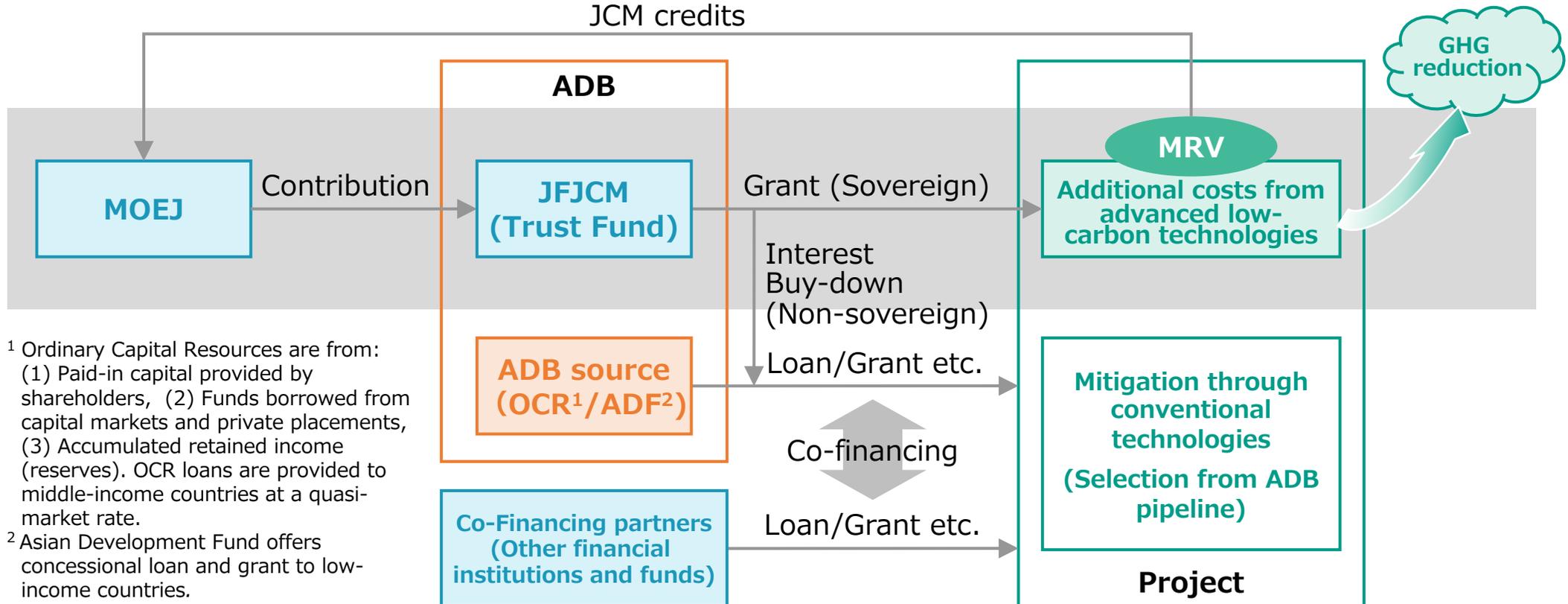
## Overview

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

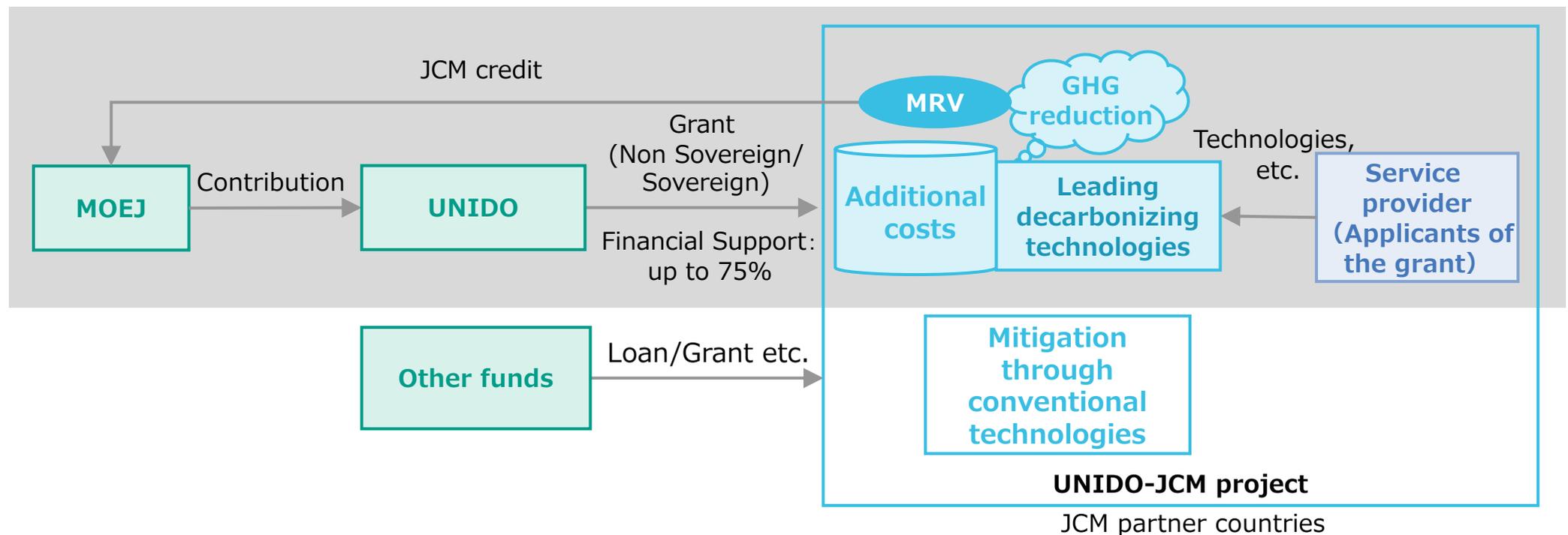
### JCM credits



<sup>1</sup> 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.

<sup>2</sup> Asian Development Fund offers concessional loan and grant to low-income countries.

<b>Budget for FY2023</b>	JPY 100 million (approx. USD 0.73 million)
<b>Overview</b>	<ul style="list-style-type: none"> <li>• Japanese service providers support the implementation of projects that utilize leading decarbonizing technologies in JCM partner countries.</li> <li>• Reduce the additional costs of the introduction of leading decarbonizing technology through financial support from UNIDO</li> </ul>
<b>Purpose</b>	Targeting JCM partner countries, mainly in the African region, promote the transition to a decarbonization of society by developing a leading decarbonizing technologies, through the JCM scheme and aim to acquire JCM credits from realized GHG emissions reductions
<b>Feature (Non-Sovereign)</b>	<ul style="list-style-type: none"> <li>• Application: Japanese company as a service provider/ an international consortium</li> <li>• Maximum Percentage of Financial Support : up to 75%</li> <li>• Monitoring period : an annual basis for at least 5 years etc.</li> </ul>



# Contributions for methane emissions reduction

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## Budget

FY2022 Supplementary: For ADB JPY 3 billion, For UNIDO JPY 1 billion

## Scheme

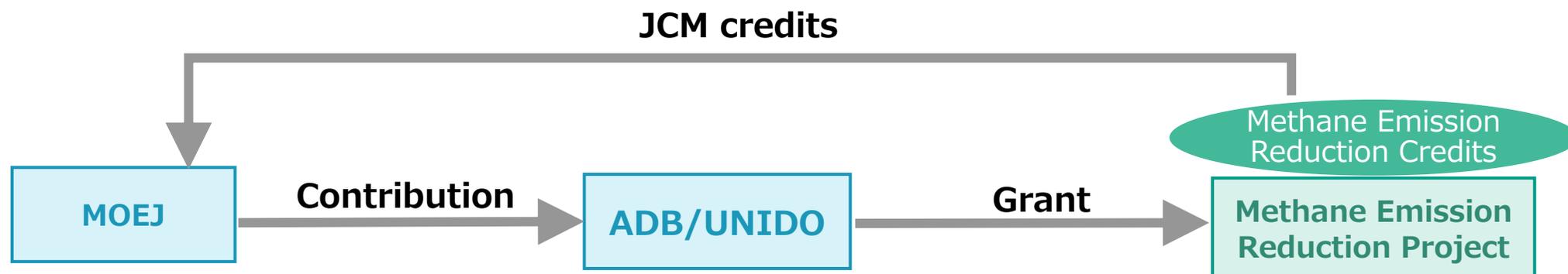
Contributions to ADB and UNIDO to reduce the additional costs of methane emission reduction projects implemented by Japanese companies using the 'Fukuoka Method' and other schemes in partner countries in the Asian and African regions through the JCM scheme.

## Purpose

Provide a new financial support for methane emission reduction projects (USD 3 million) such as the "Fukuoka Method" and earn JCM credits according to their contribution.

By leveraging resources and know-hows of both institutions and drawing on their co-financing, cost-effective structuring of the projects is expected.

## Scheme of contributions to ADB / UNIDO



※Credits are distributed according to the project implementing country and the ratio of financial contribution.

※ADB provides financial support for a portion of the costs of ADB-financed projects.

## Total 234 projects (26 partner countries)

(● Model Project: 222 projects (including Eco Lease: 5 projects), ■ ADB: 5 projects, ■ UNIDO: 1 project, ◆ REDD+: 2 projects, ▲ F-gas: 4 projects) Other 1 project in Malaysia

138 underlined projects have been started operation.

68 projects with \* have been registered as JCM projects.

### 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\*
- 31.5kW 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: 3 projects

- Electrolyzer in Chlorine Production Plant
- 400MW Solar PV
- 100MW Solar PV

### Ethiopia: 1 project

- 120MW Solar PV

### Kenya: 5 projects

- 1MW Solar PV at Salt Factory\*
- 3.1MW Solar PV
- 2.3MW Solar PV
- 230kW Solar PV and Storage Battery
- 1.5MW Solar PV

### Laos: 7 projects

- ◆ REDD+ through controlling slush-and-burn
- Amorphous transformers
- 14MW Floating Solar PV\*
- 11MW Solar PV\*
- 14MW Solar PV
- 19MW Solar PV
- Amorphous transformers2

### Thailand: 51 projects

- Energy Saving at Convenience Store
- Centrifugal Chiller & Compressor\*
- Air Conditioning System & Chiller\*
- Chilled Water Supply System
- 12MW Waste Heat Recovery in Cement Plant\*
- Refrigerator and Evaporator
- 5MW Floating Solar PV\*
- Biomass Co-generation System
- 25MW Solar PV in Industrial Park
- ▲ F-gas Recovery and Destruction Scheme
- Heat Exchanger in Fiber Factory
- 5MW Solar PV
- 2.6MW Solar PV
- 32MW Solar PV and Floating Solar PV
- 35MW Solar PV and Storage Battery
- 1.3MW Solar PV (Eco Lease)
- ORC Waste Heat Recovery
- Methane Avoidance and Biomass Boiler in Fruit Processing Factory
- 1MW Solar PV on Factory Rooftop\*
- Centrifugal Chiller in Tire Factory
- Refrigeration System\*
- LED Lighting to Sales Stores
- Co-generation System PV
- Heat Recovery Heat Pump\*
- Boiler System in Rubber Belt Plant
- Co-generation in Fiber Factory
- 3.4MW Solar PV
- 0.8MW Solar PV and Centrifugal Chiller
- 37MW Solar PV and Melting Furnace
- Centrifugal Chiller to Machinery Factory
- 2.7MW Solar PV with Blockchain Technology
- Once-through Boiler in Garment Factory
- Boiler, Chiller and PV
- Gas Co-generation System & 22MW Solar PV
- 2.9MW Solar PV
- 1MW Solar PV
- 1.6MW Solar PV (Eco Lease)
- Upgrading Air-saving Loom\*
- Co-generation in Motorcycle Factory\*
- Ion Exchange Membrane Electrolyzer
- 2MW Solar PV1
- 3.4MW Solar PV\*
- 30MW Solar PV\*
- Air-conditioning Control System
- Biomass Boiler
- 0.8MW Solar PV and Centrifugal Chiller
- 37MW Solar PV and Melting Furnace
- Centrifugal Chiller to Machinery Factory
- 2.7MW Solar PV with Blockchain Technology
- Once-through Boiler in Garment Factory
- Boiler, Chiller and PV
- Gas Co-generation System & 22MW Solar PV
- 2.9MW Solar PV
- 1MW Solar PV
- 1.6MW Solar PV (Eco Lease)

### Mongolia: 9 projects

- Heat Only Boiler (HOB)\*\*
- 15MW Solar PV1
- Access to Health Services
- 2.1MW Solar PV in Farm\*
- 10MW Solar PV\*
- 8.3MW Solar PV in Farm\*
- Upscaling Renewable Energy Sector
- Fuel Conversion by Introduction of LPG Boilers
- Improving
- 15MW Solar PV2

### Viet Nam: 45 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)
- 5.7MW Solar PV
- 48MW Offshore Wind Power
- 1.8MW Solar PV
- 0.8MW Solar PV

### Philippines: 17 projects

- 1.53MW Rooftop Solar PV\*
- 1MW Rooftop Solar PV
- 4MW Solar PV\*
- 18MW Solar PV
- 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)
- 5.6MW Binary Geothermal Power Generation

### 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: 49 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 Plant1
- 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
- 3.1MW Solar PV
- 2.1MW Solar PV
- 3.5MW Hydro Power Plant
- Energy Saving and 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 Mill Factory\*
- Once-through Boiler in Golf Ball Factory\*
- ◆ REDD+ through controlling slush-and burn
- LED Lighting to Sales Stores

### 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

### Chile: 13 projects

- 1MW Rooftop Solar PV\*
- 3.4MW Rice Husk Power Generation
- 3MW Solar PV1\*
- 34MW Solar PV
- 9MW Solar PV2
- 6MW Solar PV
- 9MW Solar PV2
- 2.0MW Solar PV
- 3MW Solar PV2
- 9MW Solar PV1
- 3MW Solar PV3
- 9MW Solar PV1
- 47MW Solar PV

### Costa Rica: 2 projects

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

## JCM Project Development

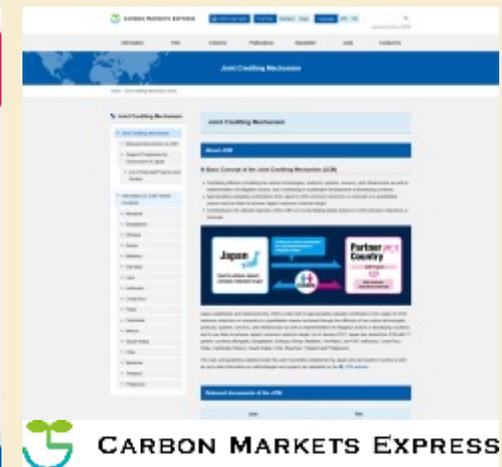
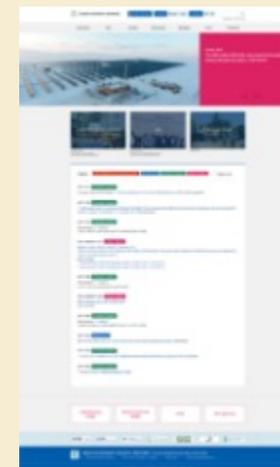
- To **identify barriers and needs** for JCM project development in partner countries in terms of technology, financing and partnership, and **provide solutions for overcoming barriers** through consultations.
- To **enhance overall capacity for JCM implementation** through facilitating understanding 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](http://carbon-markets.env.go.jp/eng/en_newsletter/index.html)



# METI's support for the JCM partner countries

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- 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



Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia



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

Total: 11 projects in 6 countries (As of April 2023)

## 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 cost: 15 million JPY (approx. 116 thousand USD) per study

**Project period:** Up to 1 year

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

## JCM Demonstration Program by NEDO (\*)



### Scope:

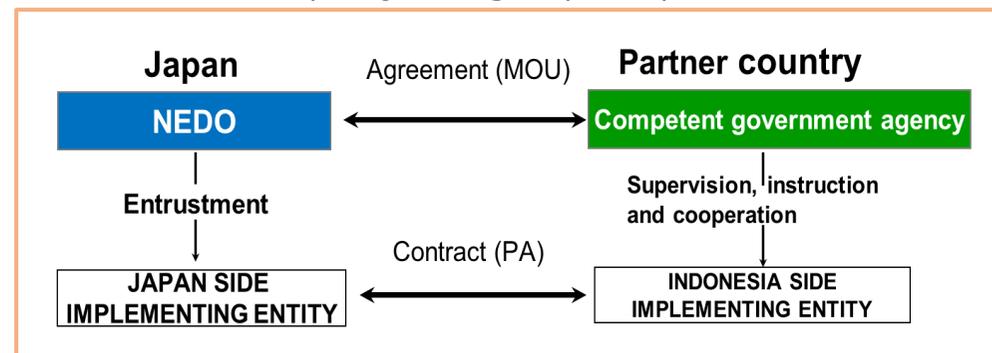
Demonstrate and verify the effectiveness of advanced decarbonizing technology:

- Introduction of relevant facilities and systems, and conduct demonstration
- Quantification of GHG emission reduction effectiveness
- JCM procedure toward issuance of JCM credits
- Budget for FY 2023: 1.1 billion JPY (approx. 8.5million USD)

**Project period:** Pre-demonstration stage: up to 1 year

Demonstration stage: up to 3 year

Follow-Up Project stage: up to 2 year



\* NEDO = New Energy and Industrial Technology Development Organization

# Demonstration Projects by METI\* (as of April 2023)

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\* Including NEDO and UNIDO

## Mongolia:

- **★High efficiency and low loss power transmission and distribution system (Hitachi)** ※Aug 2013 – 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)**  
※Feb 2019 – Feb 2023
- **Low-carbon Operation for Power Grid utilizing Optimized Performance Enabling Network for Volt/Var(Q) (OPENVQ)**  
※Nov 2019 –

## Vietnam:

- **★Energy saving by inverter air conditioner optimum operation at National Hospital (Mitsubishi Electric)** ※Jan 2014 - Jun 2017
- **★Energy saving by BEMS optimum operation at Hotel (Hibiya Engineering)**  
※Jan 2014 – Feb 2018
- **★Energy Saving and Work Efficiency Improvement Project by special LED Equipment with new technology, COB(Stanley Electric)**  
※ Sep 2016 – Feb 2018

## Lao PDR:

- **★Lao PDR Energy efficient data center(LEED) (Toyota Tsusho Corporation, Internet Initiative Japan)**  
※Jan 2016 - Oct 2018

## Indonesia:

- **Operation Optimization in Utility Facility (Azbil)**  
※Feb 2014 – Dec 2018
- **Energy Saving by Optimum Operation at Oil Refinery (Yokogawa)**  
※Nov 2013 – Feb 2019
- **The low carbonization of mobile communication's BTS (Base Transceiver Station) by the Introduction of "TRIBRID system" (KDDI)**  
※Apr 2017 – 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.