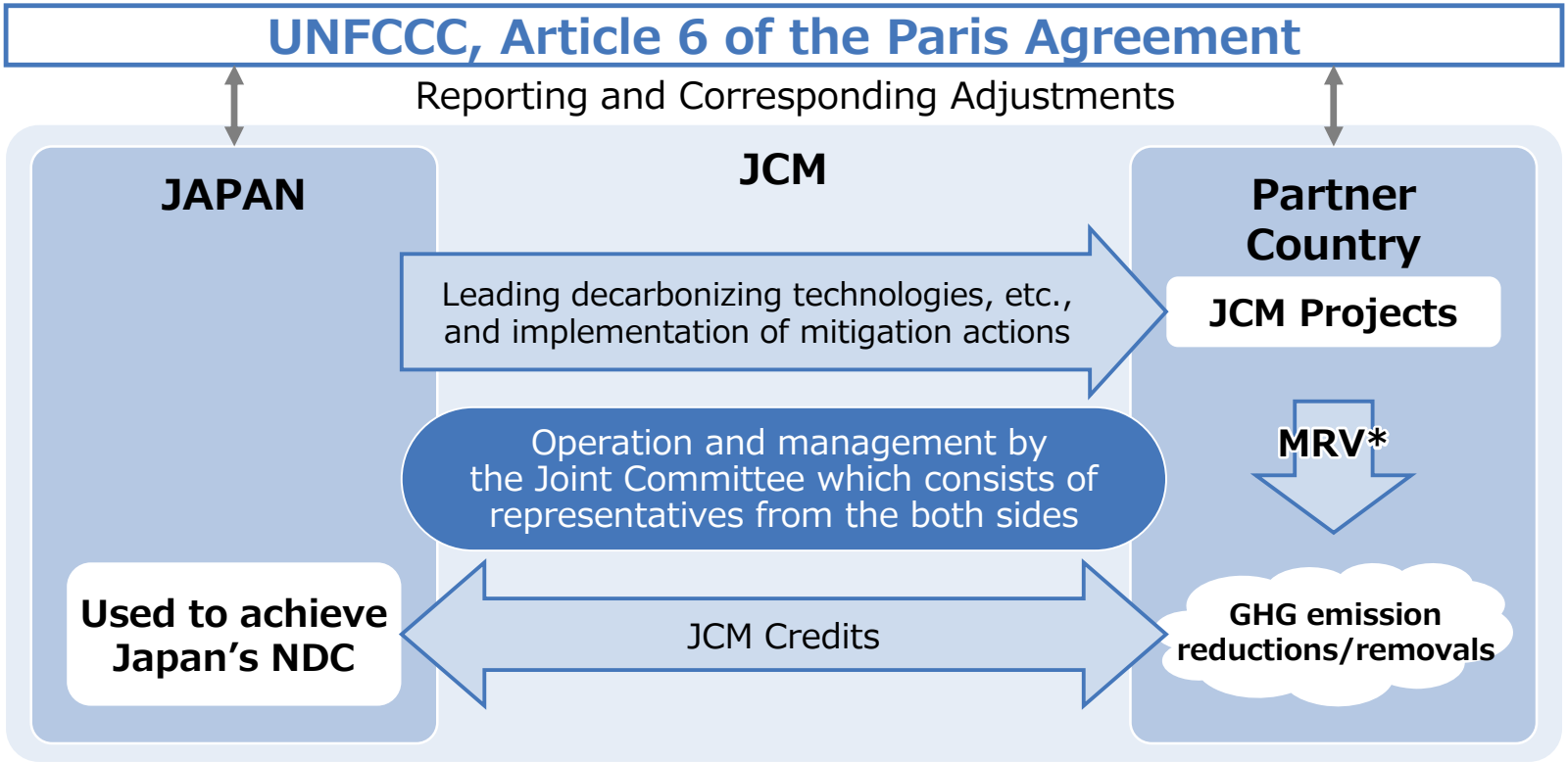
Recent Developments of the Joint Crediting Mechanism (JCM)

February 2024
Government of Japan

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

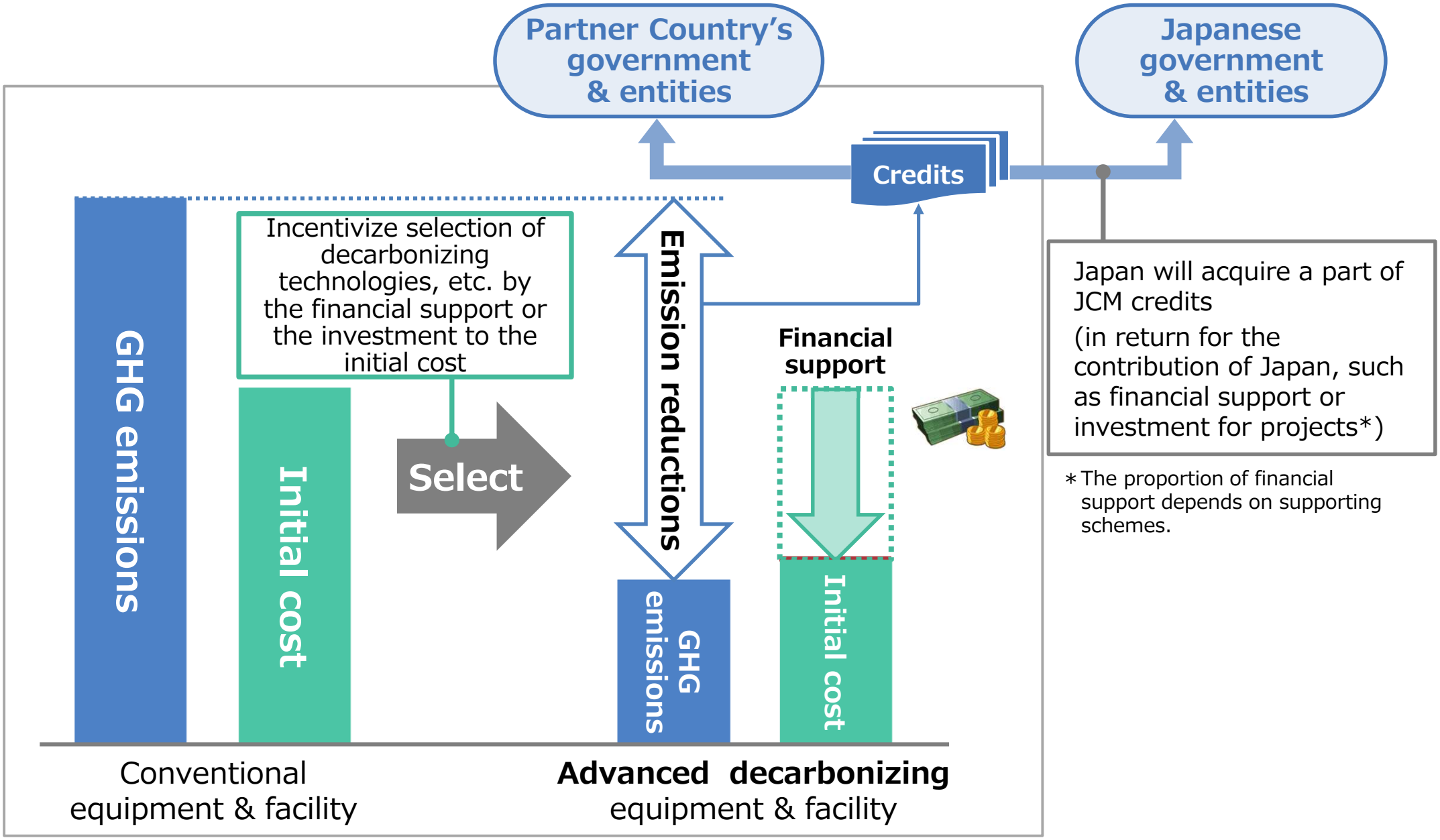
Basic Concept of the JCM

- 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.

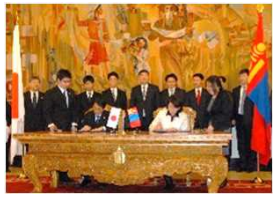


*measurement, reporting and verification

Contribution from Japan (example)



JCM Partner Countries（29 countries）



Mongolia
Jan. 8, 2013 （Ulaanbaatar）

Bangladesh
Mar. 19, 2013 (Dhaka)

Ethiopia
May. 27, 2013 (Addis Ababa)

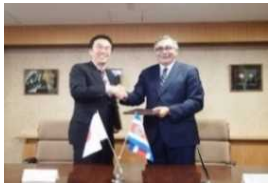
Kenya
Jun. 12, 2013 (Nairobi)

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)

Senegal
Aug. 25, 2022 (Dakar)

Tunisia
Aug. 26, 2022 (Tunis)

Azerbaijan
Sept. 5, 2022 (Baku)

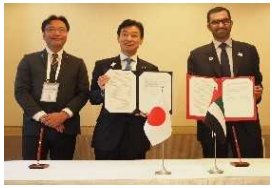
Moldova
Sept. 6, 2022 (Chisinau)

Georgia
Sept. 13, 2022 (Tbilisi)

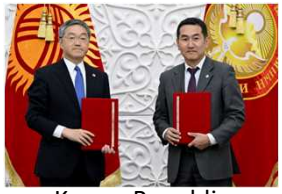
Sri Lanka
Oct. 10, 2022 (Colombo)

Uzbekistan
Oct. 25, 2022 (Tashkent)

Papua New Guinea
Nov. 18, 2022 (Sharm-el-Sheikh)



United Arab Emirates
April. 16, 2023 (Sapporo)



Kyrgyz Republic
July. 6, 2023 (Bishkek)

Kazakhstan
Oct. 30, 2023 (Astana)

Ukraine
Feb. 19, 2024 (Tokyo)

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

Biogas Power Generation, ITOCHU Corporation, Philippines

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

Energy efficiency [Consumer sector]

Energy saving at convenience stores, Panasonic, Indonesia

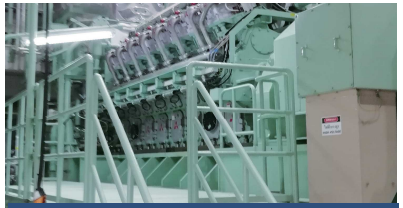
High-efficiency refrigerator, Mayekawa MFG, Indonesia

Energy efficiency [Industrial sector]

Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia

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

Effective Use of Energy



Gas Co-generation System and Absorption Chiller, Kansai Electric Power, Thailand

Energy efficiency [Urban sector]

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

Amorphous transformers in power distribution, Yuko-Keiso, Vietnam

Waste

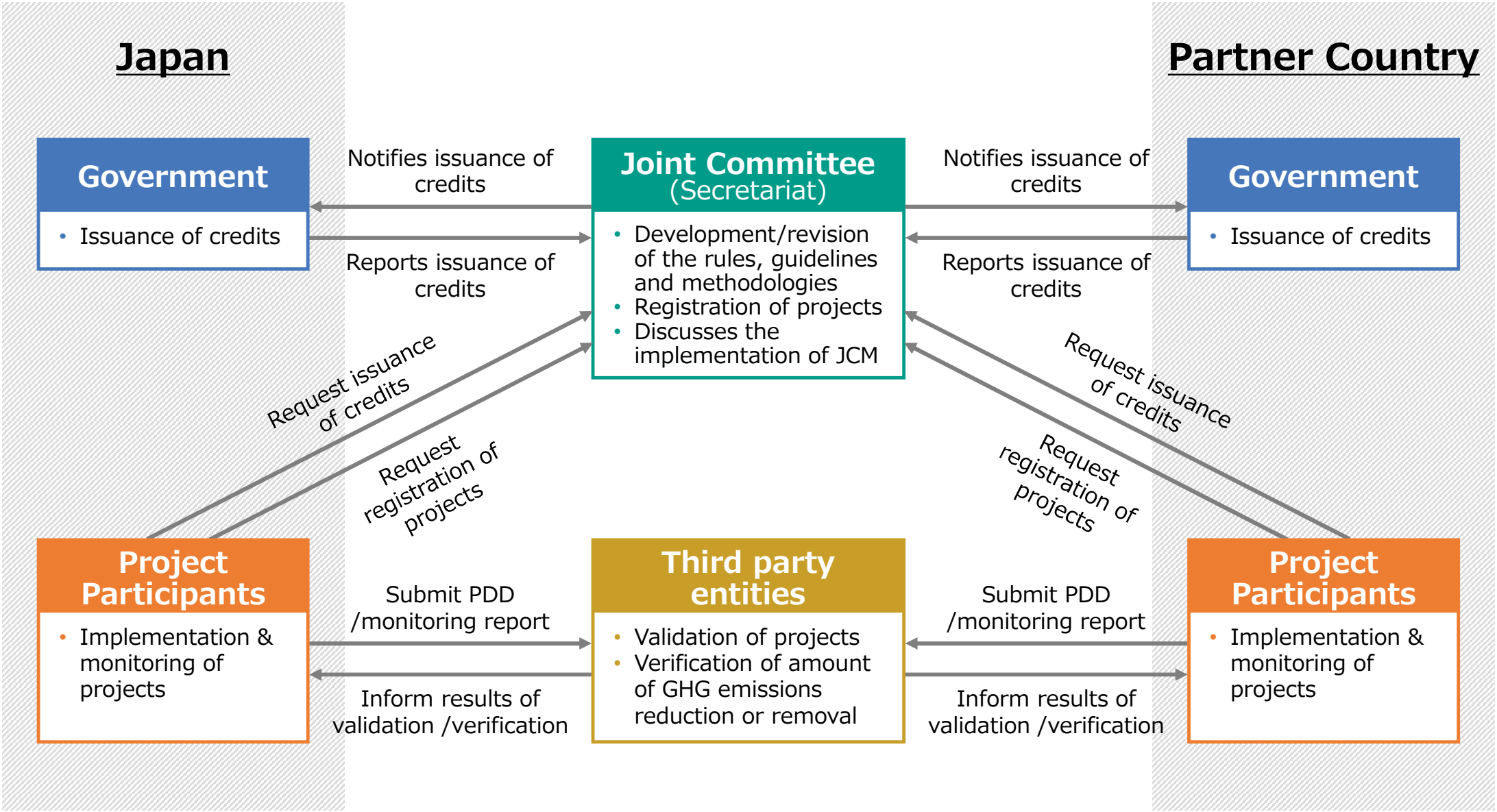
Power Generation with Methane Gas Recovery System, NTTDATA, Mexico

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

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

<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.

<Note>

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

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

Implementation of the Article 6 rules into domestic rules

Plan for Global Warming Countermeasures (Cabinet decision on Oct 22, 2021)

- Designate the JCM implementing authorities to establish the JCM Promotion and Utilization Council
- Designate the JCM Promotion and Utilization Council to authorizes JCM credits issued in the JCM registry of Japan and decide the procedures for authorization as a Party to the Paris Agreement.

Establishment of the JCM Promotion and Utilization Council consisting of five relevant Ministries* (Jan 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.

* Reference: https://www.env.go.jp/content/000060591.pdf

Formulation of the procedures on the authorization and corresponding adjustments (Apr 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."

* Reference: https://www.env.go.jp/content/000060562.pdf

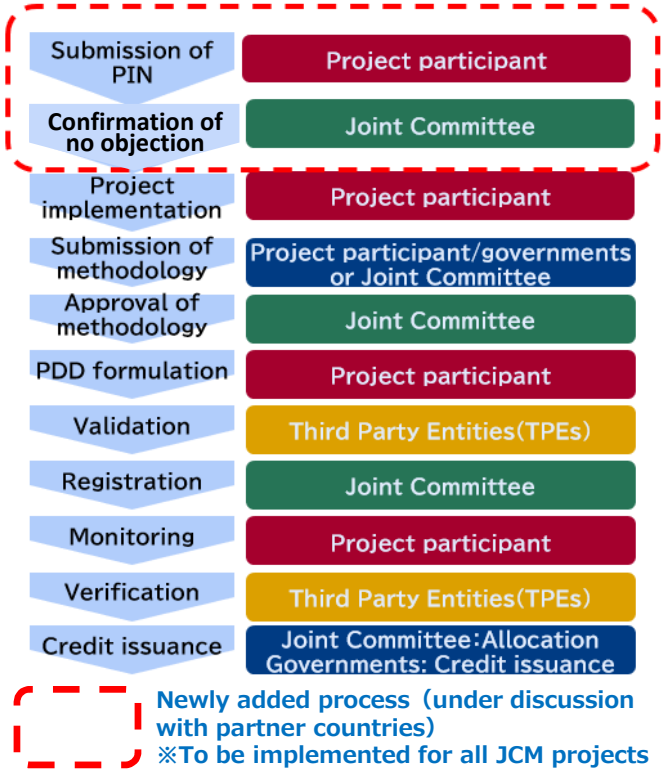
Private-Sector JCM projects

<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**

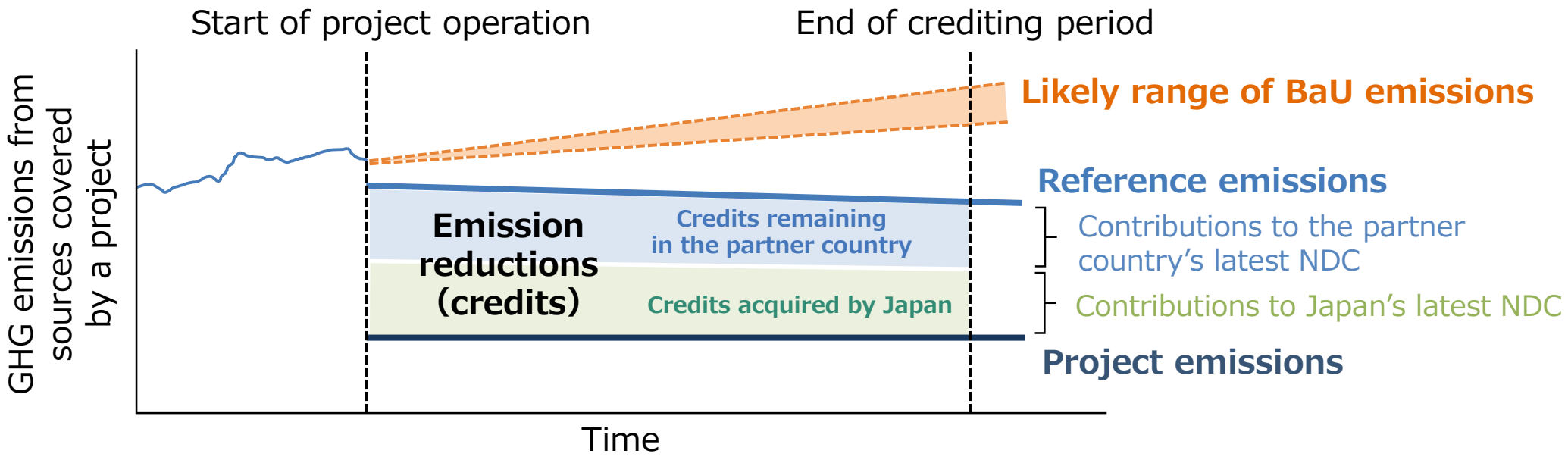
- Introduction of the following new procedure, which is under discussion with each JCM Partner country:
  - Making an advance inquiry to the partner countries on the "Project Idea Note (PIN)" which includes the project contents and credit allocation plan
  - Confirming whether there are any objections 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>



JCM's contribution to NDC

- 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.



JCM Website

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

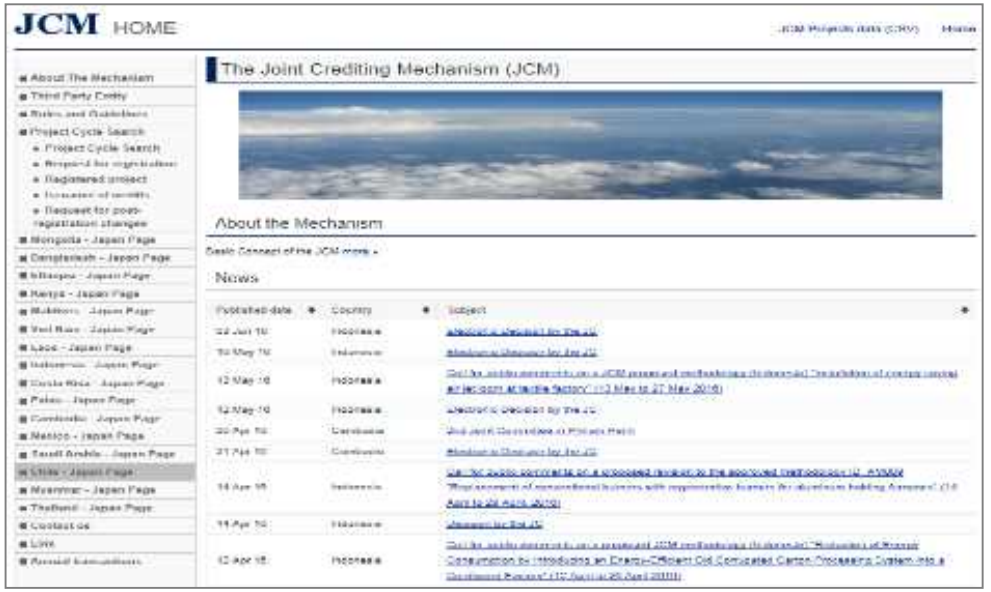
Contents

- 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

	Programme	Type of support
Ministry of the Environment	Finance Programme for JCM Model Projects*	Subsidy
	Finance Programme for F-gas Recovery and Destruction Model Projects*	Subsidy
	Japan Fund for the JCM (JF JCM) - managed by ADB	Grant
	JCM support programme by UNIDO*	Grant for projects, technical cooperation
	Project development/capacity building/MRV support	Technical cooperation
Ministry of Economy, Trade and Industry	JCM Feasibility Study	Technical cooperation
	JCM Demonstration Programme	Government-commissioned project
Ministry of Agriculture, Forestry and Fisheries	Development of MRV for JCM projects in Agriculture –implemented by ADB	Technical cooperation
	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.

Finance Programme for JCM Model Projects by MOEJ

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_2 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.

Finance Programme for JCM F-gas Recovery and Destruction Model Projects by MOEJ

【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 CO2, etc) from used equipment instead of releasing to air, and reduce emissions

Project Period

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

Scope of Financing

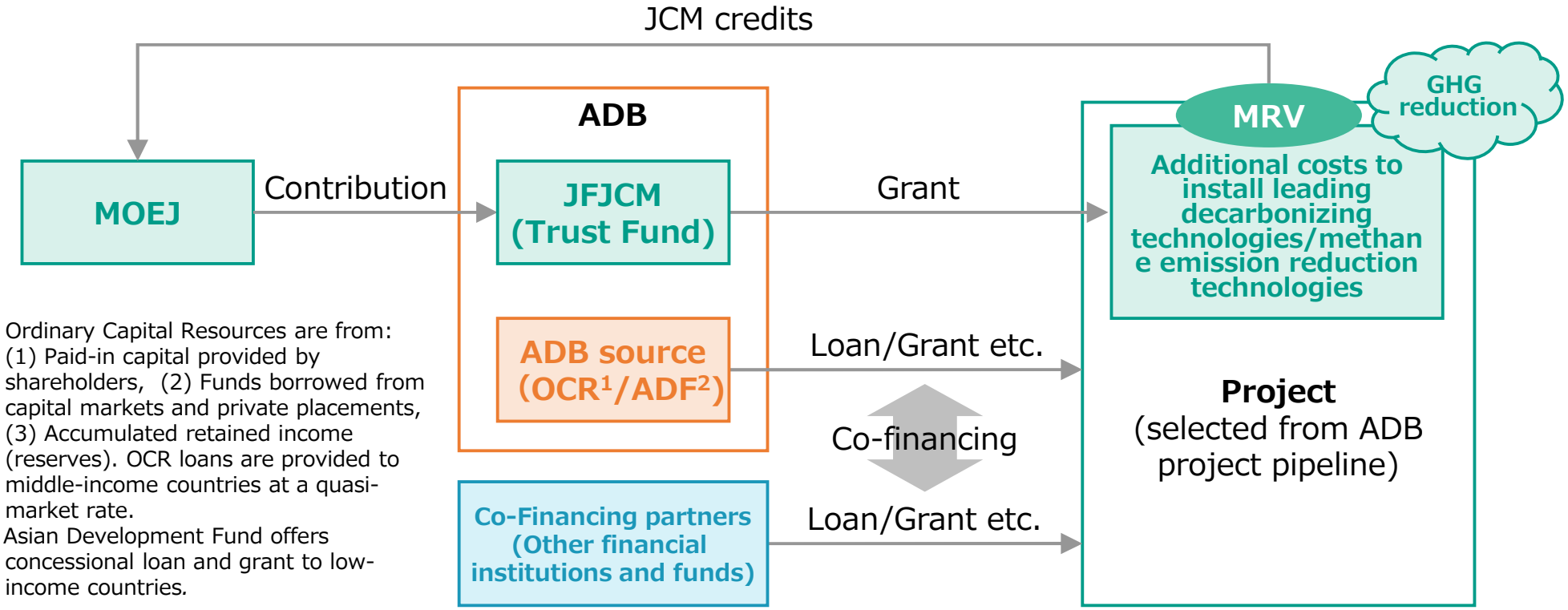
- Establish scheme for recovery and destruction
- Install facilities/equipment for recovery/destruction
- Implementation of recovery, transportation, destruction and monitoring

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)

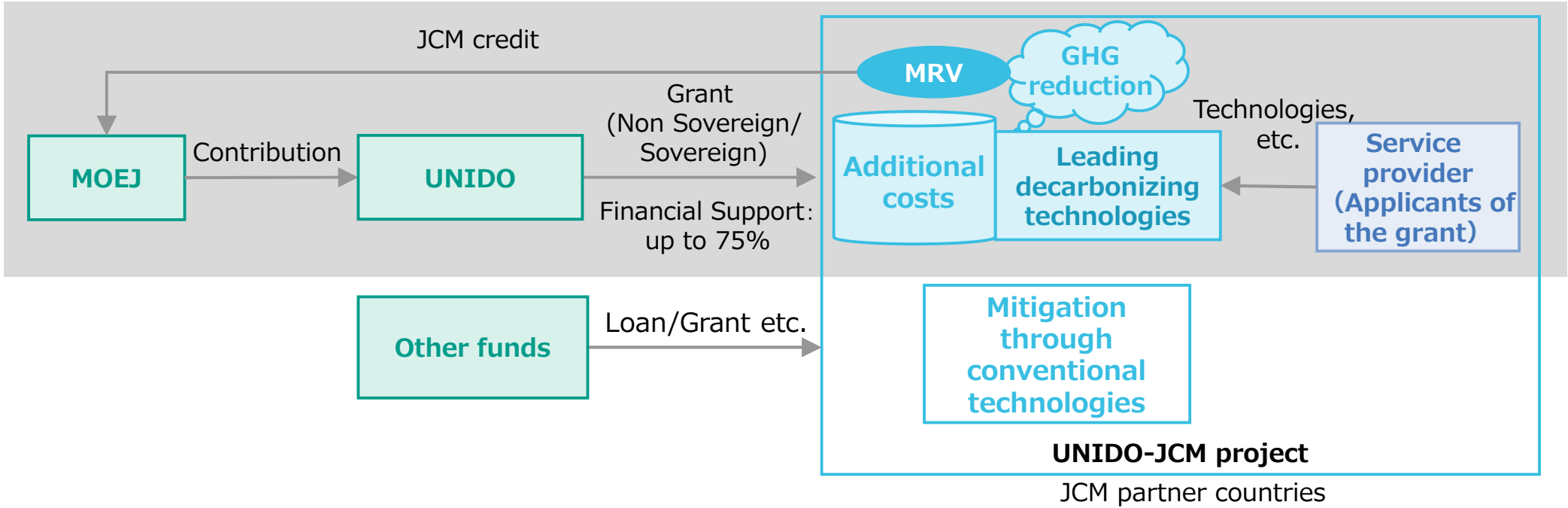
Budget	Cumulative contribution from 2014: JPY 14 billion (approx. USD 100 million) ※Budget for 2023: JPY 0.2 billion (approx. USD 1.5 million)
Overview	To provide financial incentives for the adoption of expensive but leading decarbonizing technologies/methane emission reduction technologies in projects financed by Asian Development Bank (ADB)
Purpose	To develop ADB projects with sustainable and decarbonizing transition perspective by introducing advanced decarbonizing 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 support programme by UNIDO

Budget	Cumulative contribution from 2021: JPY 400 million (approx. USD 2.92 million) ※Budget for 2023: JPY 100 million (approx. USD 0.73 million)
Overview	• Japanese service providers support the implementation of projects that utilize leading decarbonizing technologies/methane emission reduction technologies in JCM partner countries in principle. • Reduce the additional costs of the introduction of leading decarbonizing technologies/methane emission reduction technologies through financial support from UNIDO
Purpose	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
Feature (Non-Sovereign)	• Application: Japanese company as a service provider/ an international consortium in principle • Maximum Percentage of Financial Support : up to 75% • Monitoring period : an annual basis for at least 5 years etc.

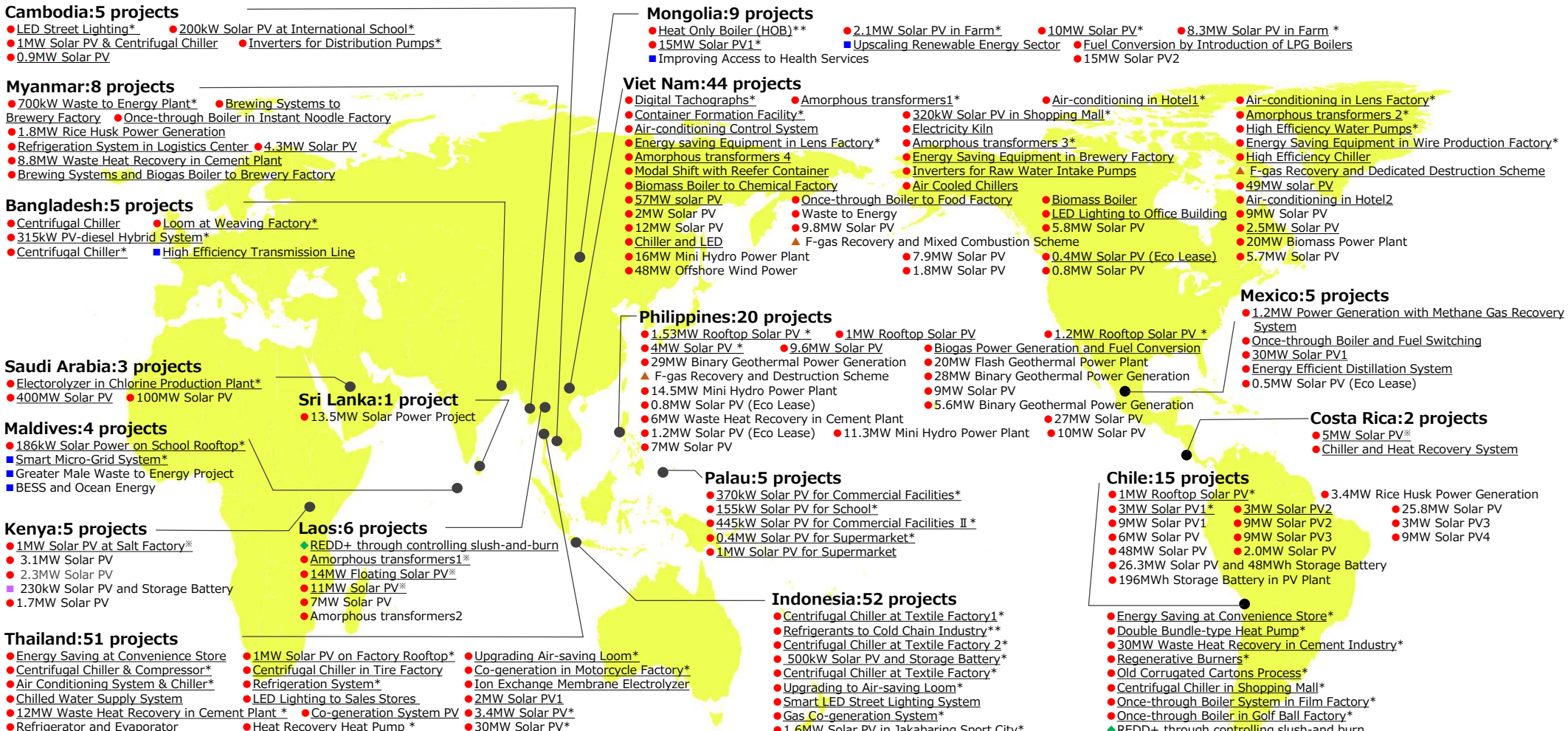


JCM Financing Programme by MOE Japan (FY2013-2023)
as of February 19, 2024

Total 240 projects (29 partner countries)

(●Model Project: 226 projects(including Eco Lease: 7projects), ■ADB: 7 projects, ■UNIDO: 1 project, ◆ REDD+: 2 projects, ▲F-gas: 4 projects)

162 underlined projects have been started operation. **72 projects with *** have been registered as JCM projects.



Cambodia:5 projects
- LED Street Lighting*
- 200kW Solar PV at International School*
- 1MW Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps*
- 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
- 4.3MW 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

Saudi Arabia:3 projects
- Electorolyzer in Chlorine Production Plant*
- 400MW Solar PV
- 100MW Solar PV

Maldives:4 projects
- 186kW Solar Power on School Rooftop*
- Smart Micro-Grid System*
- Greater Male Waste to Energy Project
- BESS and Ocean Energy

Kenya:5 projects
- 1MW Solar PV at Salt Factory※
- 3.1MW Solar PV
- 2.3MW Solar PV
- 230kW Solar PV and Storage Battery
- 1.7MW Solar PV

Sri Lanka:1 project
- 13.5MW Solar Power Project

Laos:6 projects
- ◆REDD+ through controlling slush-and-burn
- Amorphous transformers1※
- 14MW Floating Solar PV※
- 11MW Solar PV※
- 7MW 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
- 17.8MW 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
- 8.1MW Solar PV
- 2MW Solar PV2
- 23MW Solar PV
- Boiler, Chiller and PV
- 0.13MW Solar PV (Eco Lease)
- 4MW Solar PV
- 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
- 2MW Solar PV3
- Gas Co-generation System & 22MWSolar PV
- 2.9MW Solar PV
- 0.9MW Solar PV
- 1.6MW Solar PV (Eco Lease)

Mongolia:9 projects
- Heat Only Boiler (HOB)**
- 2.1MW Solar PV in Farm*
- 10MW Solar PV*
- 8.3MW Solar PV in Farm *
- 15MW Solar PV1*
- Upscaling Renewable Energy Sector
- Fuel Conversion by Introduction of LPG Boilers
- Improving Access to Health Services
- 15MW Solar PV2

Viet Nam:44 projects
- Digital Tachographs*
- Amorphous transformers1*
- Air-conditioning in Hotel1*
- Air-conditioning in Lens Factory*
- Container Formation Facility*
- 320kW Solar PV in Shopping Mall*
- Amorphous transformers 2*
- Air-conditioning Control System
- Electricity Kiln
- 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
- ▲ F-gas Recovery and Dedicated Destruction Scheme
- Biomass Boiler to Chemical Factory
- Air Cooled Chillers
- 49MW solar PV
- 57MW solar PV
- Once-through Boiler to Food Factory
- Biomass Boiler
- Air-conditioning in Hotel2
- 2MW Solar PV
- Waste to Energy
- LED Lighting to Office Building
- 9MW Solar PV
- 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:20 projects
- 1.53MW Rooftop Solar PV *
- 1MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV *
- 4MW Solar PV *
- 9.6MW Solar PV
- Biogas Power Generation and Fuel Conversion
- 29MW Binary Geothermal Power Generation
- 20MW Flash Geothermal Power Plant
- ▲ 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
- 6MW Waste Heat Recovery in Cement Plant
- 27MW Solar PV
- 1.2MW Solar PV (Eco Lease)
- 11.3MW Mini Hydro Power Plant
- 10MW Solar PV
- 7MW Solar PV

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:52 projects
- Centrifugal Chiller at Textile Factory1*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 500kW Solar PV and Storage Battery*
- Centrifugal Chiller at Textile Factory*
- 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
- 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
- 55MW Geothermal Power Generation
- 12MW Biomass Power Plant
- 3MW Solar PV
- Improvement of Flat Glass Production Melting Furnace

Chile:15 projects
- 1MW Rooftop Solar PV*
- 3.4MW Rice Husk Power Generation
- 3MW Solar PV1*
- 3MW Solar PV2
- 25.8MW Solar PV
- 9MW Solar PV1
- 9MW Solar PV2
- 3MW Solar PV3
- 6MW Solar PV
- 9MW Solar PV3
- 9MW Solar PV4
- 48MW Solar PV
- 2.0MW Solar PV
- 26.3MW Solar PV and 48MWh Storage Battery
- 196MWh Storage Battery in PV Plant

Mexico:5 projects
- 1.2MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 30MW Solar PV1
- Energy Efficient Distillation System
- 0.5MW Solar PV (Eco Lease)

Costa Rica:2 projects
- 5MW Solar PV※
- Chiller and Heat Recovery System

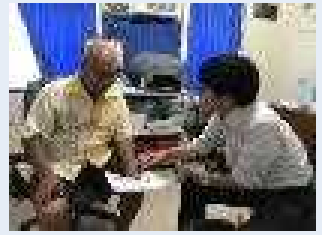
Energy Saving at Convenience Store*
- Double Bundle-type Heat Pump*
- 30MW Waste Heat Recovery in Cement Industry*
- Regenerative Burners*
- Old Corrugated Cartons Process*
- Centrifugal Chiller in Shopping Mall*
- Once-through Boiler System in Film Factory*
- Once-through Boiler in Golf Ball Factory*
- ◆REDD+ through controlling slush-and burn

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 though 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 July 2023)

JCM Feasibility Study by METI

METI Ministry of Economy, Trade and Industry

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 (*)

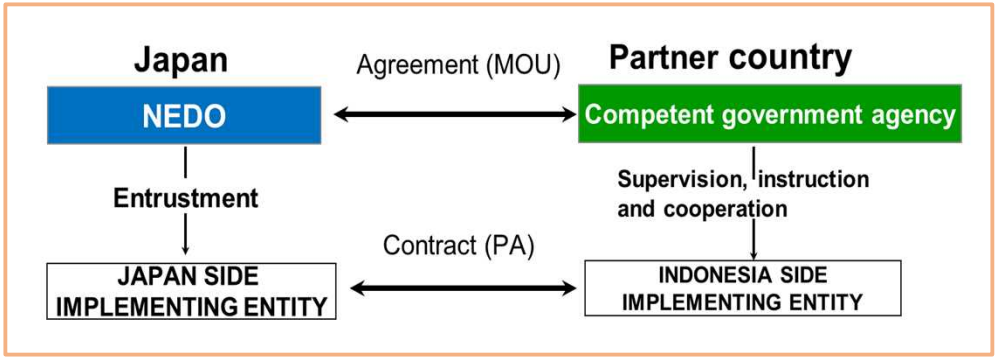
NEDO

Scope:

Demonstrate and verify the effectiveness of advanced decarbonizing technology:

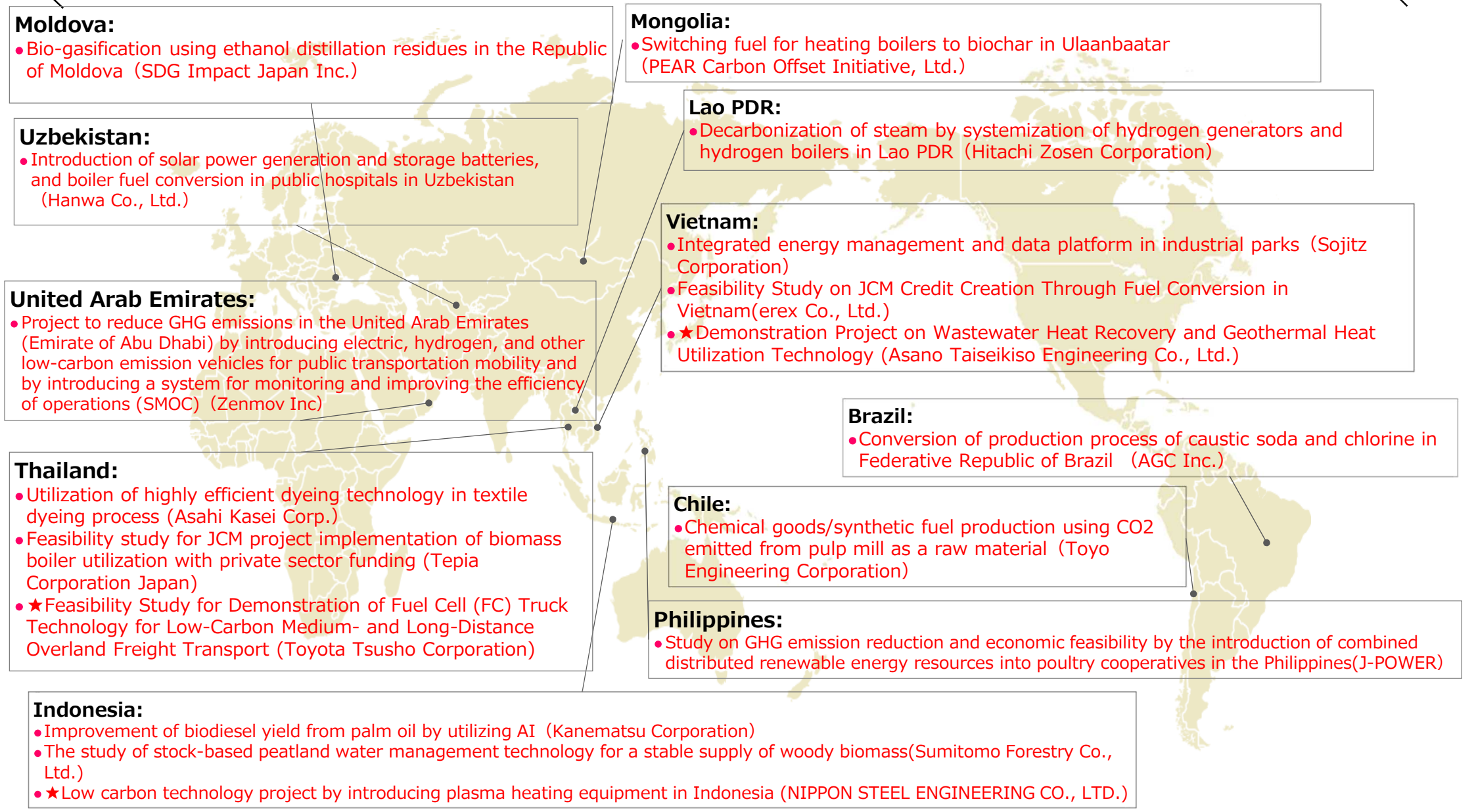
- Introduction of relevant facilities and systems, and conduct demonstration
- Quantification of GHG emission reduction effectiveness
- JCM procedure toward issuance of JCM credits
- Budget for FY 2023: 1.1 billion JPY (approx. 8.5million USD)

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

Feasibility Studies and Detailed/Secondary Feasibility Study (as of October 2023)



Moldova:
- Bio-gasification using ethanol distillation residues in the Republic of Moldova（SDG Impact Japan Inc.）

Uzbekistan:
- Introduction of solar power generation and storage batteries, and boiler fuel conversion in public hospitals in Uzbekistan （Hanwa Co., Ltd.）

United Arab Emirates:
- Project to reduce GHG emissions in the United Arab Emirates (Emirate of Abu Dhabi) by introducing electric, hydrogen, and other low-carbon emission vehicles for public transportation mobility and by introducing a system for monitoring and improving the efficiency of operations (SMOC)（Zenmov Inc）

Thailand:
- Utilization of highly efficient dyeing technology in textile dyeing process (Asahi Kasei Corp.)
- Feasibility study for JCM project implementation of biomass boiler utilization with private sector funding (Tepia Corporation Japan)
- ★Feasibility Study for Demonstration of Fuel Cell (FC) Truck Technology for Low-Carbon Medium- and Long-Distance Overland Freight Transport (Toyota Tsusho Corporation)

Mongolia:
- Switching fuel for heating boilers to biochar in Ulaanbaatar (PEAR Carbon Offset Initiative, Ltd.)

Lao PDR:
- Decarbonization of steam by systemization of hydrogen generators and hydrogen boilers in Lao PDR（Hitachi Zosen Corporation）

Vietnam:
- Integrated energy management and data platform in industrial parks（Sojitz Corporation）
- Feasibility Study on JCM Credit Creation Through Fuel Conversion in Vietnam(erex Co., Ltd.)
- ★Demonstration Project on Wastewater Heat Recovery and Geothermal Heat Utilization Technology (Asano Taiseikiso Engineering Co., Ltd.)

Brazil:
- Conversion of production process of caustic soda and chlorine in Federative Republic of Brazil （AGC Inc.）

Chile:
- Chemical goods/synthetic fuel production using CO2 emitted from pulp mill as a raw material（Toyo Engineering Corporation）

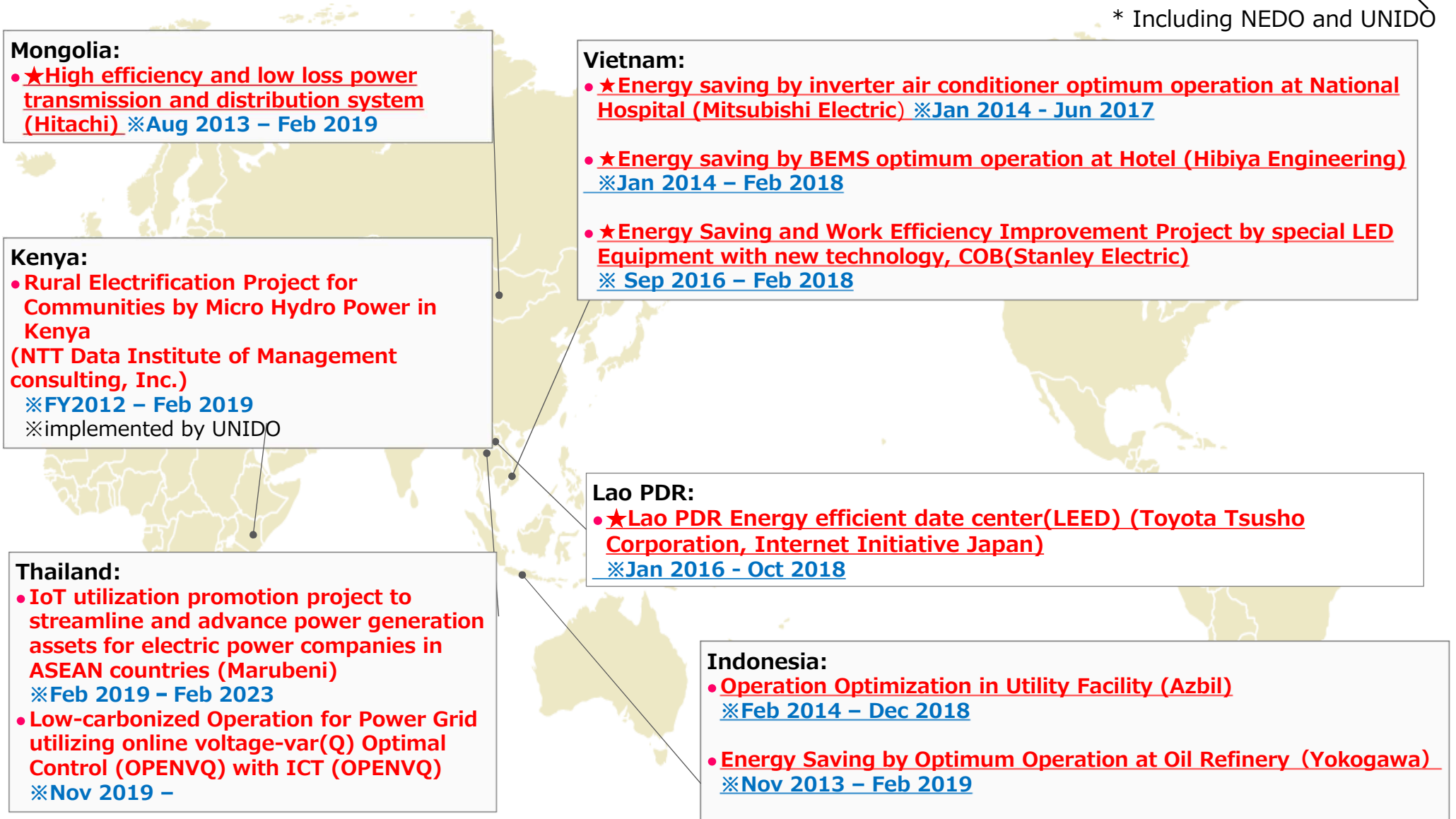
Philippines:
- Study on GHG emission reduction and economic feasibility by the introduction of combined distributed renewable energy resources into poultry cooperatives in the Philippines(J-POWER)

Indonesia:
- Improvement of biodiesel yield from palm oil by utilizing AI（Kanematsu Corporation）
- The study of stock-based peatland water management technology for a stable supply of woody biomass(Sumitomo Forestry Co., Ltd.)
- ★Low carbon technology project by introducing plasma heating equipment in Indonesia (NIPPON STEEL ENGINEERING CO., LTD.)

Total as of 2023: **17 projects** (11 countries)
Projects with "●" are Feasibility Studies by METI
Projects with "●★" are Detailed/Secondary Feasibility Study by NEDO

Demonstration Projects by METI* (as of October 2023)

* 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-carbonized Operation for Power Grid utilizing online voltage-var(Q) Optimal Control (OPENVQ) with ICT (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 date 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.

Development of MRV for JCM projects in Agriculture – implemented by ADB

Budget

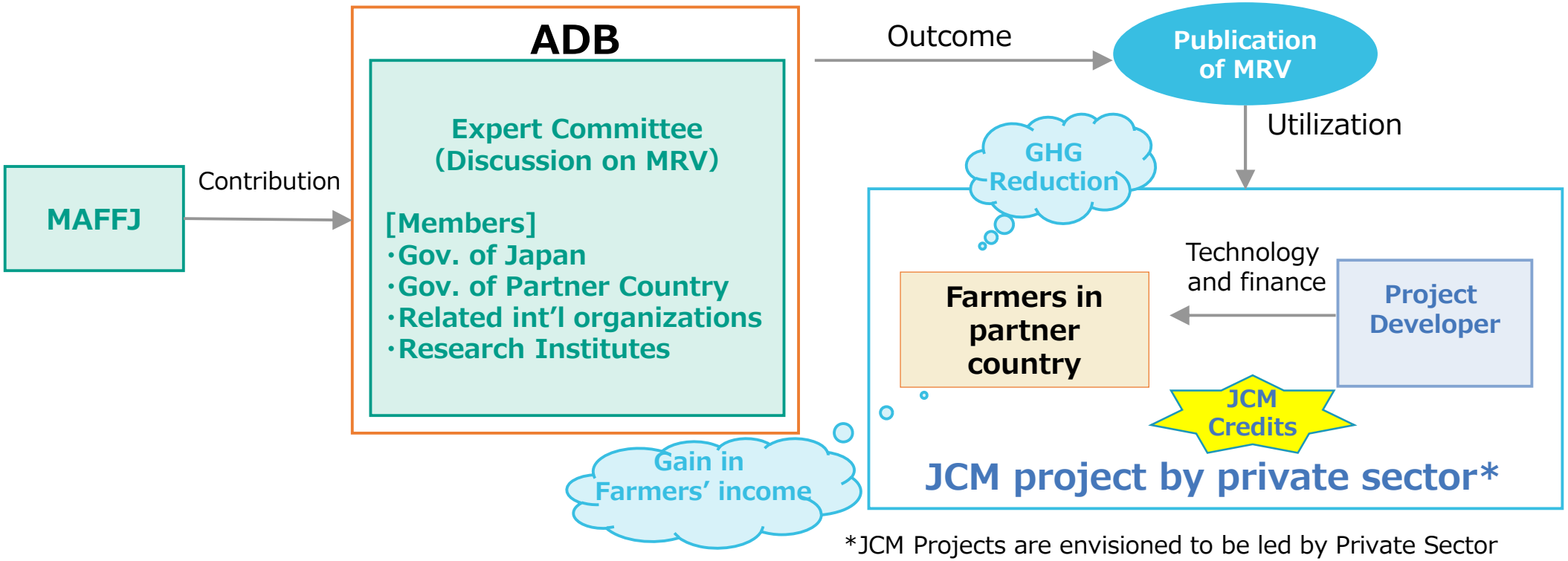
- Budget for FY 2023: JPY 30 million (approx. USD 0.2million)

Overview

- Launch committees consisting of experts from governments of partner countries and Japan and relevant organizations with ADB serving as the secretariat.
- In 2024, the committees will commence the discussion on MRV and other necessary elements for Alternate Wetting and Drying (AWD) to reduce methane emissions from rice paddy fields, aimed at supporting the formulation and implementation of an actual JCM project in agriculture to generate reliable and transparent carbon credits while ensuring business continuity for the private sector.

Purpose

- Achievements of triple goals: GHG emission reduction, gain in farmers' income, and dissemination of Japanese climate-smart technology.



*JCM Projects are envisioned to be led by Private Sector