



Overview of the Financing Programme for JCM Model Projects

12 November 2019

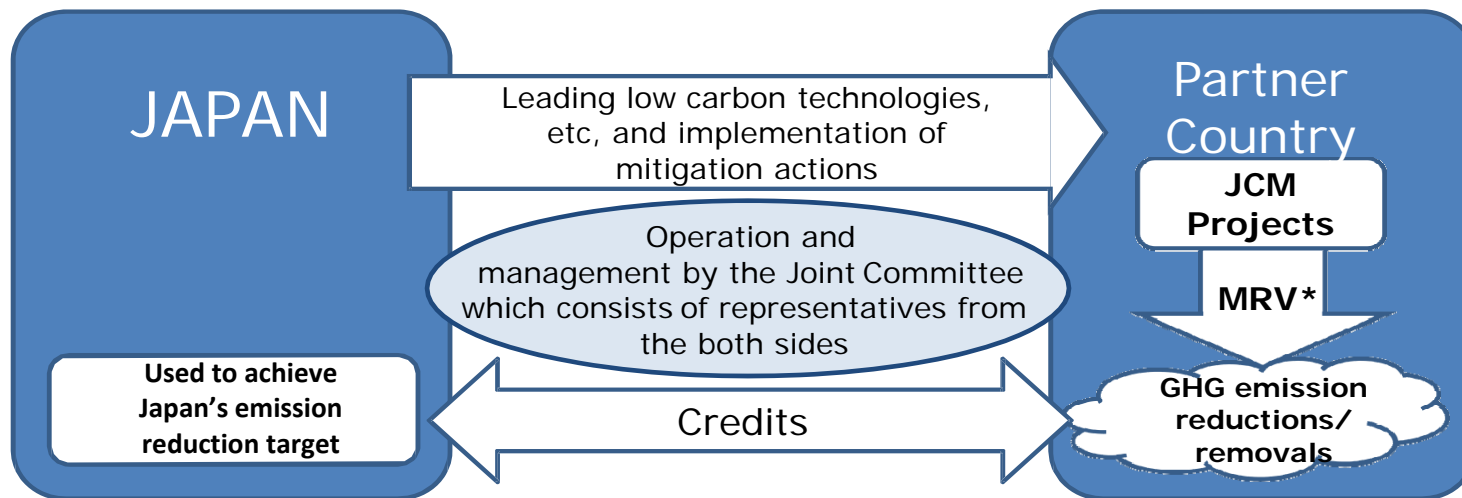
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P R O D U C I N G
T H E F U T U R E

Basic Concept of the JCM

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



*measurement, reporting and verification

■ Source: Recent Development of The Joint Crediting Mechanism (JCM), March 2019, MOEJ website

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JCM Partner 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)



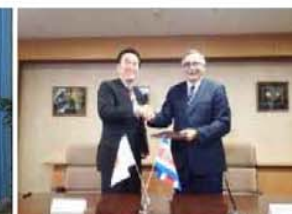
Viet Nam
Jul. 2, 2013
(Hanoi)



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)

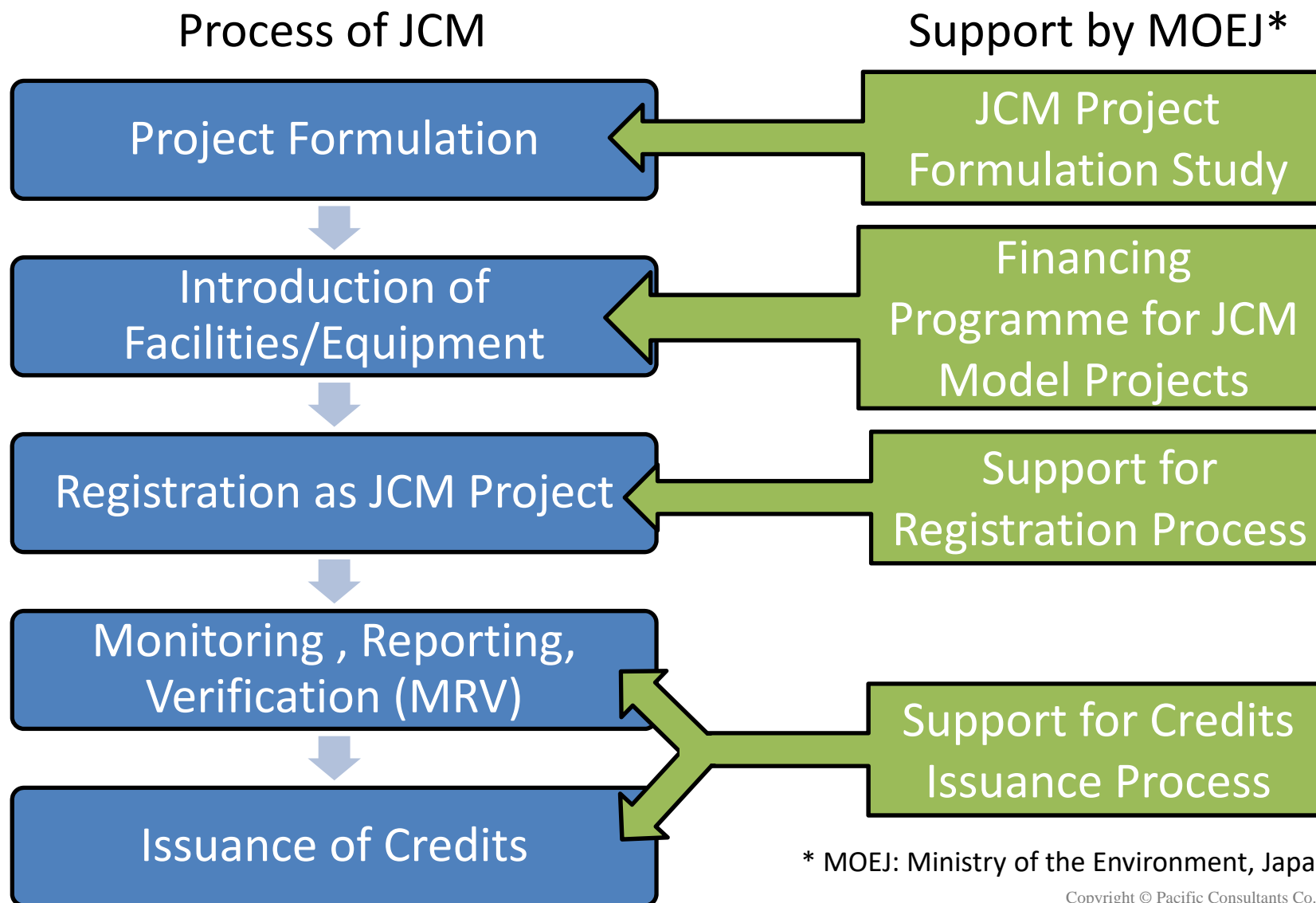


Thailand
Nov. 19, 2015
(Tokyo)



the Philippines
Jan. 12, 2017
(Manila)

Process of JCM and Support by MOEJ*



* MOEJ: Ministry of the Environment, Japan 4

Financing Programme for JCM Model Projects by MOEJ

Budget for projects starting from FY 2019 is 9.9 billion JPY (approx. USD 99 million) in total by FY2021

(1 USD = 100 JPY)

Finance part of an investment cost
(less than half)

**Government of
Japan**

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

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

**International consortiums
(which include Japanese entities)**



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

Eligible Project

- Reduce Energy-related CO2 emissions with leading low carbon technologies in partner countries.
- Contribute to the sustainable development in partner countries.
- Reduction of GHG emissions achieved by the projects can be quantitatively calculated and verified.
- Facilities installed by the projects do not receive any other subsidy by the Government of Japan.

Example of Applicable Technologies for JCM Financing Programme



Cement exhaust
heat recovery



Digital
tachograph



Energy saving
kiosk/supermarket



High efficiency
industrial air
conditioning



High efficiency
boiler for
heating



Energy saving
loom



Solar power
generation



Amorphous
metal
transformer



Co-generation
system



High efficiency
air conditioning



Solar power
generation



Waste to energy
plant



High efficiency
refrigerator

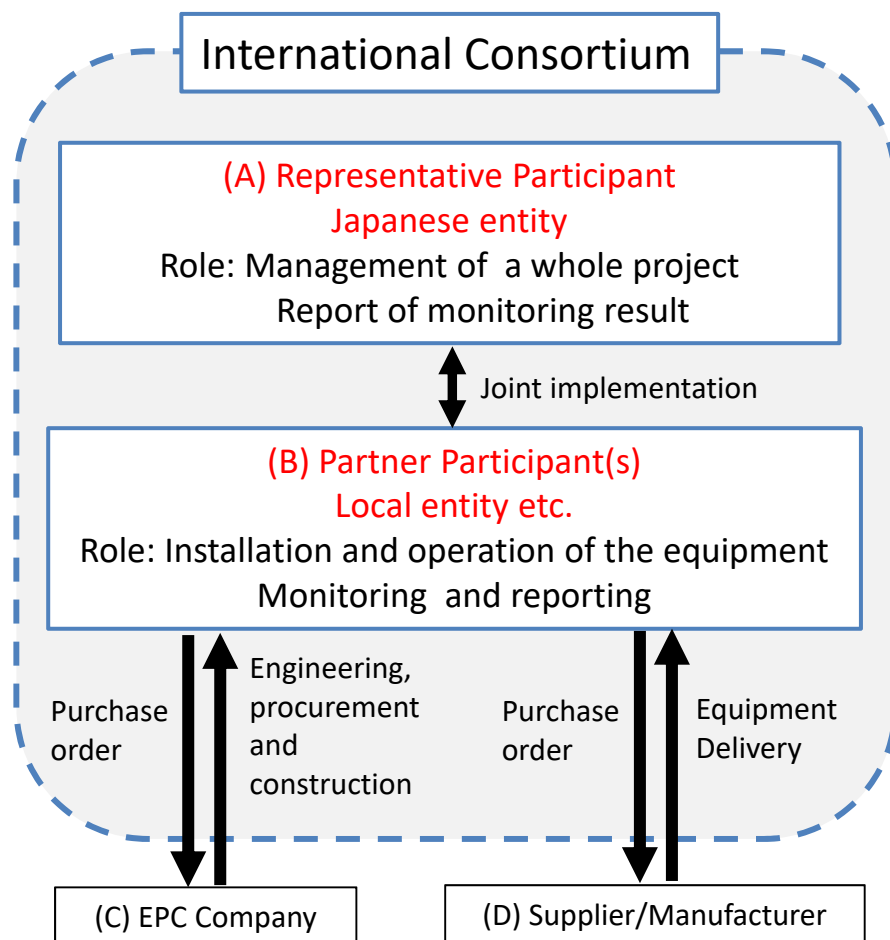


High efficiency
industrial
furnace



Radio control of
high efficiency
LED

Formulation and Development of Implementation Structure



- A) A representative participant of the model project shall be a Japanese entity of an international consortium.
- B) A participant shall have capability for the implementation, such as technical capacity to appropriately implement the eligible project.
- C) A participant shall have a financial basis to bear the costs necessary to appropriately implement the eligible project.
- D) A participant shall have adequate management structures and handling capacity for accounting and other administrative work related to the eligible project;
- E) A participant shall explain the contents, effect on GHG emission reductions, details of the cost, investment plan, etc. of the eligible project.

Costs Eligible for Financing

What kind of cost is covered & not covered by this programme?

✓ COVERED

- (a) Main construction work
- (b) Ancillary work
- (c) Machinery and appliances
- (d) Surveying and testing
- (e) Facilities/equipment (including monitoring equipment)
- (f) Administrative work; and
- (g) Other necessary costs approved by GEC *

* GEC: Global Environment Centre Foundation

Maximum Percentage of Financial Support

Number of already selected project(s) using a similar technology in each partner country	Percentage of financial support (determined by GEC)
None (0)	Up to 50%
Up to 3 (1-3)	Up to 40%
More than 3 (>3)	Up to 30%

In Palau

- **Solar PV project → Up to 30%**
- **Others → Up to 50%**

Criteria of Cost-effectiveness

JPY4,000/tCO₂equivalent

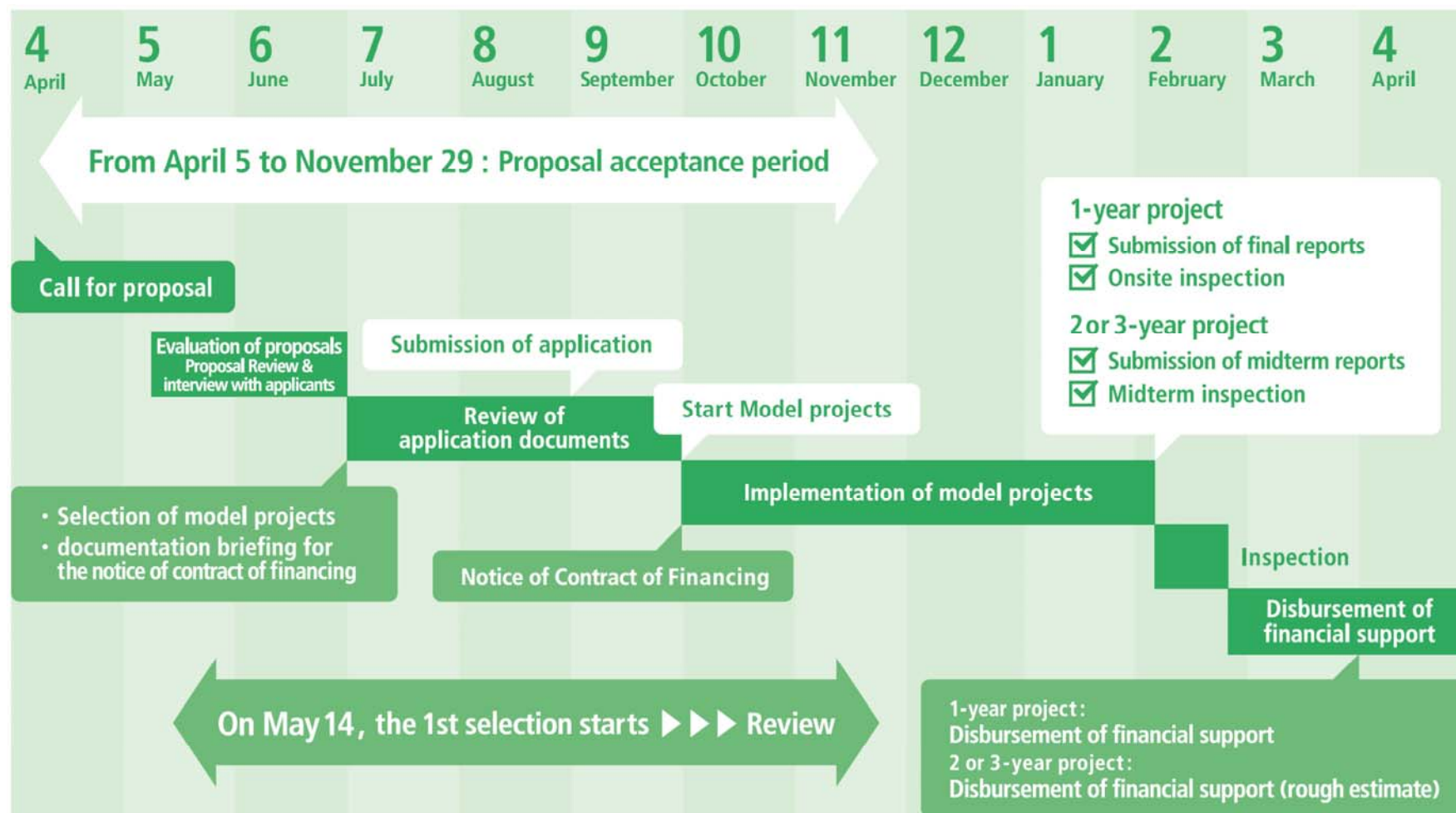
$$= \frac{\text{Amount of financial support[JPY]}}{\text{Emission reductions of GHG [tCO}_2\text{equivalent/y} \times \text{legal durable years[y]}}$$

Legal durable years of the facilities is stipulated by the Japanese law, and are dependent on the industry classification.

JPY3,000/tCO₂equivalent

In case the number of PV JCM Model Projects by each country is 5 or more. (Mongolia and Thailand)

Schedule in FY2019



JCM Financing Programme by MOEJ (FY2013~2019) as of Aug 2, 2019

Thailand:31 projects

- Energy Saving at Convenience Store
- Upgrading Air-saving Loom*
- Centrifugal Chiller in Tire Factory
- Air Conditioning System & Chiller*
- Ion Exchange Membrane Electrolyzer
- LED Lighting to Sales Stores
- Co-generation System
- 2MW Solar PV
- Heat Recovery Heat Pump
- 30MW Solar PV
- Air-conditioning Control System
- Energy Saving Equipment in Port
- 3.4MW Solar PV
- Introduction of Scheme for F-gas Recovery and Destruction
- 37MW Solar PV and Melting Furnace
- 1MW Solar PV on Factory Rooftop*
- Centrifugal Chiller & Compressor*
- Co-generation in Motorcycle Factory
- Refrigeration System
- Chilled Water Supply System
- 12MW Waste Heat Recovery in Cement Plant
- Refrigerator and Evaporator
- 3.4MW Solar PV*
- 5MW Floating Solar PV
- Boiler System in Rubber Belt Plant
- Biomass Co-generation System
- Co-generation in Fiber Factory
- 25MW Solar PV in Industrial Park
- 0.8MW Solar PV and Centrifugal Chiller
- Heat Exchanger in Fiber Factory

Mongolia:9 projects

- Heat Only Boiler (HOB)**
- 8.3MW Solar PV in Farm
- 21MW Solar PV
- Fuel Conversion by Introduction of LPG Boilers
- 2.1MW Solar PV in Farm*
- 15MW Solar PV
- Upscaling Renewable Energy Sector
- 10MW Solar PV*
- 20MW Solar PV

Viet Nam:22 projects

- Digital Tachographs*
- Air-conditioning in Hotel*
- Container Formation Facility*
- Amorphous transformers 2*
- Electricity Kiln
- Energy saving Equipment in Lens Factory*
- Energy Saving Equipment in Wire Production Factory*
- Energy Saving Equipment in Brewery Factory
- Modal Shift with Reefer Container
- ▲Collection Scheme and Dedicated System of F-gas
- High Efficiency Water Pumps2
- Amorphous transformers1*
- Air-conditioning in Lens Factory*
- 320kW Solar PV in Shopping Mall*
- Air-conditioning Control System
- High Efficiency Water Pumps1*
- Amorphous transformers 3*
- Amorphous transformers 4
- High Efficiency Chiller
- Inverters for Raw Water Intake Pumps
- Waste to Energy Plant
- Biomass Boiler to Chemical Factory

Bangladesh:6 projects

- Centrifugal Chiller
- 315kW PV-diesel Hybrid System*
- Centrifugal Chiller*
- Loom at Weaving Factory*
- 50MW Solar PV Power Plant
- High Efficiency Transmission Line

Saudi Arabia:1 project

- Electrolyzer in Chlorine Production Plant

Kenya:2 projects

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

Laos:4 projects

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

Mexico:7 projects

- 2.4MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 64MW Wind Farm
- 20MW Solar PV
- 30MW Solar PV1
- Energy Efficient Distillation System
- 30MW Solar PV2

Myanmar:7 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
- Brewing Systems and Biogas Boiler to Brewery Factory

Philippines:11 projects

- 15MW Hydro Power Plant
- 1MW Rooftop Solar PV
- 0.16MW Micro Hydro Power Plant
- 18MW Solar PV
- 4MW Hydro Power Plant
- 1.2MW Rooftop Solar PV
- 4MW Solar PV
- Biogas Power Generation and Fuel Conversion
- 1.53MW Rooftop Solar PV
- 2.5MW Rice Husk Power Generation
- 19MW Hydro Power Plant

Cambodia:5 projects

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

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

Costa Rica:2 projects

- 5MW Solar PV
- Chiller and Heat Recovery System

Chile:2 projects

- 1MW Rooftop Solar PV
- 2MW Solar PV and 4MWh Storage Battery

Maldives:2 projects

- 186kW Solar Power on School Rooftop*
- Smart Micro-Grid System

Indonesia:31 projects

- Centrifugal Chiller at Textile Factory*
- Refrigerants to Cold Chain Industry**
- Centrifugal Chiller at Textile Factory 2*
- 507kW Solar Power Hybrid System
- Centrifugal Chiller at Textile Factory 3*
- Upgrading to Air-saving Loom*
- Smart LED Street Lighting System
- Gas Co-generation System*
- 1.6MW Solar PV in Jakabaring Sport City*
- 10MW Hydro Power Plant
- Industrial Wastewater Treatment System
- Absorption Chiller
- High Efficiency Autoclave
- 12MW Biomass Power Plant
- Energy Saving at Convenience Store*
- Double Bundle-type Heat Pump*
- 30MW Waste Heat Recovery in Cement Industry*
- Regenerative Burners
- Old Corrugated Cartons Process*
- Centrifugal Chiller in Shopping Mall*
- Once-through Boiler System in Film Factory
- Once-through Boiler in Golf Ball Factory
- REDD+ through controlling slush-and burn
- Looms in Weaving Mill
- 0.5MW Solar PV*
- 10MW Hydro Power Plant
- CNG-Diesel Hybrid Public Bus
- Injection Molding Machine
- LED Lighting to Sales Stores
- Gas Co-generation system
- Rehabilitation of Hydro Power Plant

- Model Project in FY 2013 (7 projects in 3 countries)
- Model Project in FY 2014 (12 projects in 5 countries)
- ADB Project in FY 2014 (1 project in 1 country)
- Model Project in FY 2015 (31 projects in 9 countries)
- Model Project in FY 2016 (35 projects in 9 countries)
- REDD+ Model Project (2 projects in 2 countries)
- Model Project in FY 2017 (19 projects in 7 countries)
- ADB Project in FY 2017 (1 project in 1 country)
- Model Project in FY2018 (24 projects in 11 countries)
- ADB Project in FY 2018 (2 projects in 2 country)
- ▲ F-gas Project in FY 2018 (2 projects in 2 country)
- Model Project in FY 2019 (11 projects in 5 countries)
- Other 1 project in Malaysia

Total 147 projects in 16 partner countries

Underlined projects have started operation (91 projects)
Projects with * have been registered as JCM projects (42 projects)

■ Source: http://gec.jp/jcm/en/wp-content/uploads/2019/08/190802map_en.pdf

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JCM Model Projects in Palau

Year of adaption as JCM Model Project	Project name	Project participants	Technology	Expected GHG emission reductions	Current status
2013	Small Scale Solar Power Plants for Commercial Facilities in Island States	Pacific Consultants Co., Ltd., Western Caroline Trading Company, Surangel and Sons Company	Solar (220.5kW and 150kW)	259 tCO2/year	JCM Model Project: completed JCM Project Cycle: registered, credit issued
2014	Solar PV System for Schools Project	Pacific Consultants Co., Ltd., Palau Adventist Schools	Solar (51.675kW and 103.350kW)	111 tCO2/year	JCM Model Project: completed JCM Project Cycle: registered, credit issued
2014	Small-Scale Solar Power Plants for Commercial Facilities Project II	Pacific Consultants Co., Ltd., Western Caroline Trading Company, Palau Investment and Development Company	Solar (263.64 kW, 80.03 kW and 101.92 kW)	320 tCO2/year	JCM Model Project: completed JCM Project Cycle: registered, credit issued
2018	Introduction of 0.4MW Rooftop Solar Power System in Supermarket	Sharp Energy Solutions Corporation Western Caroline Trading Company	Solar (0.4MW)	296 tCO2/year	JCM Model Project: installing
2019	Introduction of 1MW Solar Power System on Supermarket Rooftop	Sharp Energy Solutions Corporation Surangel and Sons Company	Solar (1MW)	842 tCO2/year	JCM Model Project: installing

Thank you so much for
allowing us to make a presentation.

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