

Seminar on the JCM Implementation

- Accelerating Promotion of Low Carbon Economy in Vietnam -

Overview of the Financing Programme for JCM Model Projects

10th October 2019

**Global Environment Centre Foundation
(GEC)**



- 1. Overview of the Financing Programme for JCM Model Projects**
- 2. Business Matching tool “JCM Global Match”**

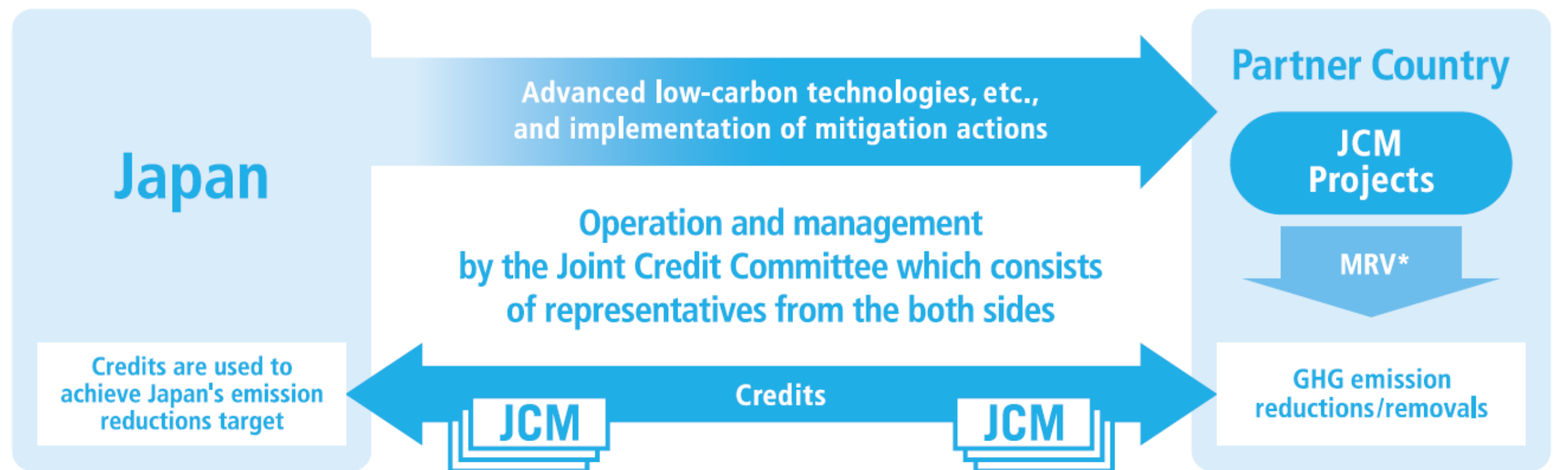
Basic concepts of JCM

P.01

Facilitating diffusion of advanced low-carbon or decarbonizing technologies, products, system, services and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing country.

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

MOEJ

Incentivizes selecting low-carbon technologies by the financial support to initial cost



Provides funds to cover up to half of project's investment cost.

Collaboration with "City-to-City Collaboration Programme for Low-Carbon Society"

Collaboration with various international financing schemes under JICA, JBIC, ADB, World Bank, etc.

International Consortium

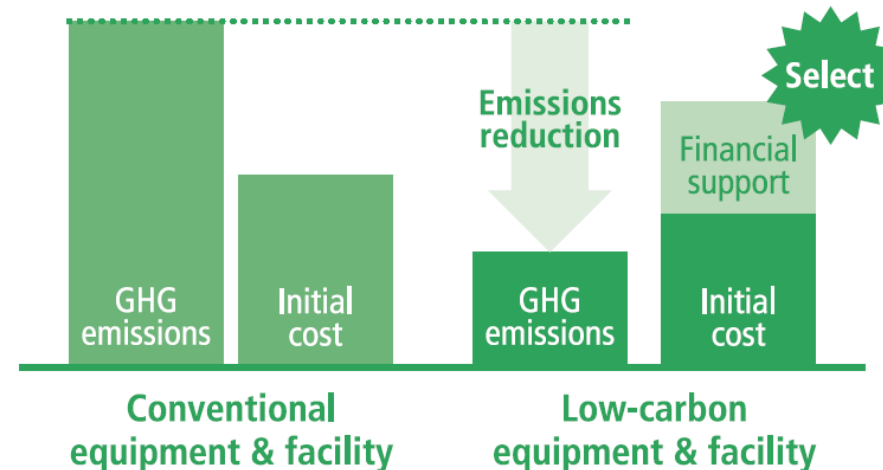
Japanese entity A
representative participant

Project management & report
MRV result

JCM partner-country entity B
partner participant

Installation and maintenance of equipment & conduct MRV

Project in the partner country



Japanese government & entities

Japan will acquire a part of JCM credits (in return to the financial support)

JCM

Expected to deliver at least half of JCM credits issued

The consortium conducts MRV to estimate GHG emission reductions

Partner country government & entities

JCM Model Projects by MOEJ

FY2013 -2019 as of August 31,2019

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Mongolia: 8 Projects

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

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

Bangladesh: 5 Projects

- Centrifugal Chiller
- Loom at Weaving Factory
- 315kW PV-diesel Hybrid System
- 50MW Solar PV Power Plant
- Centrifugal Chiller

Saudi Arabia: 1 Projects

- Electrolyzer in Chlorine Production Plant

Kenya: 2 Projects

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

Maldives: 1 Projects

- 186kW Solar Power on School Rooftop

Laos: 3 Projects

- Amorphous transformers
- 14MW Floating Solar PV
- 11MW Solar PV

Cambodia: 4 Projects

- LED Street Lighting
- 200kW Solar PV at International School
- Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps

Philippines: 11 Projects

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

Viet Nam: 21 Projects

- Digital Tachographs
- Amorphous transformers 1
- Air-conditioning in Hotel
- 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 Pumps1
- Energy saving Equipment in Lens Factory
- Amorphous transformers 3
- Energy Saving Equipment in Wine 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
- Waste to Energy Plant
- High Efficiency Water Pumps2
- Biomass Boiler to Chemical Factory

Thailand: 30 Projects

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

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: 30 Projects

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

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

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

Total 139 projects

List of JCM Model Projects Selected in Vietnam Global Environment Centre Foundation

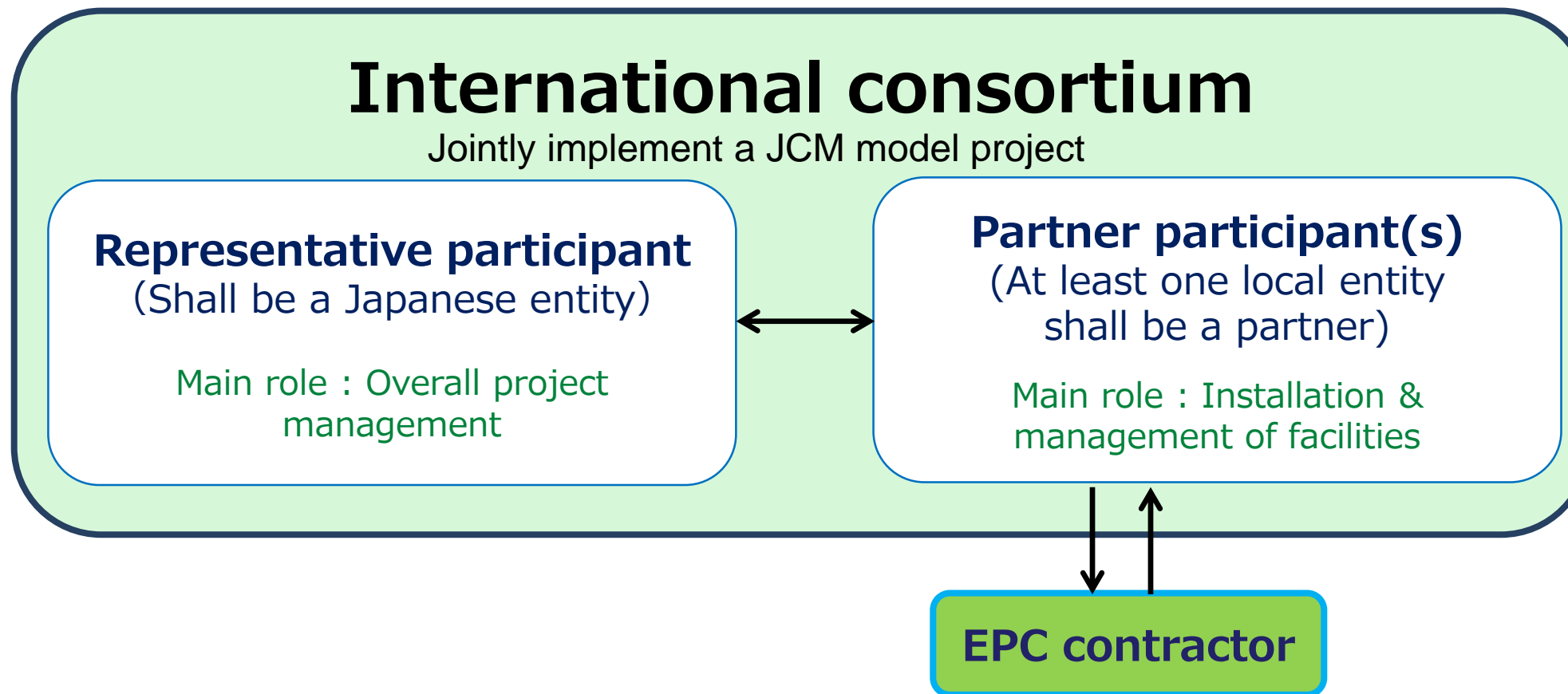
Year	Entity	Project Title	Sector	GHG (tCO2/y)
2014	Nippon Express Co., Ltd.	Eco-Driving by Utilizing Digital Tachograph System	Transport	324
2014	Yuko-Keiso Co., Ltd.	Introduction of Amorphous High Efficiency Transformers in Power Distribution Systems	Energy Efficiency	610
2015	NTT Data Institute of Management Consulting	Introduction of High Efficiency Air-conditioning in Hotel	Energy Efficiency	935
2015	RICOH COMPANY, LTD.	Introduction of Energy-Efficient Air Conditioners in a Lens Factory	Energy Efficiency	147
2015	Hitachi Chemical Company, Ltd.	Energy Saving in Acid Lead Battery Factory with Container Formation Facility	Energy Efficiency	3,825
2015	Yuko-Keiso Co., Ltd.	Energy Saving in Factories with Air-Conditioning Control System	Energy Efficiency	3,297
2015	Yuko-Keiso Co., Ltd	Introduction of Amorphous High Efficiency Transformers in Southern and Central Power Grids	Energy Efficiency	3,885
2015	TOTO Ltd.	Installation of High Efficiency Kiln in Sanitary Ware Manufacturing Factory	Energy Efficiency	311
2015	AEON RETAIL Co., Ltd.	Introduction of Solar PV System at Shopping Mall in Ho Chi Minh	Renewable Energy	125
2016	Yokohama Water Co., Ltd.	Introduction of High Efficiency Water Pumps in Da Nang City	Energy Efficiency	738
2016	HOYA CORPORATION	Installation of Energy Saving Equipment in Lens Factory	Energy Efficiency	1,220
2016	Yuko Keiso Co., Ltd.	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids	Energy Efficiency	3,477
2016	YAZAKI PARTS CO., LTD.	Introduction of Energy Saving Equipment to Automotive Wire Production Factory	Energy Efficiency	591
2017	Sapporo International Inc.	Introduction of Energy Saving Equipment to Brewery	Energy Efficiency	111
2017	Yuko Keiso Co., Ltd.,	Introduction of Amorphous High Efficiency Transformers in Southern and Central Power Grids II	Energy Efficiency	1,469
2017	YUASA TRADING CO., LTD	Introduction of High Efficiency Centrifugal Chiller to Rubber Products Factory	Energy Efficiency	289
2018	Nihon Crant Co. Ltd.	Modal Shift from Truck to Cargo Ship with Freshness Preservation Reefer Container	Transport	10,061
2018	Yokohama Water Co., Ltd.	Energy Saving by Introduction of Inverters for Raw Water Intake Pumps	Energy Efficiency	1,043
2019	Hitachi Zosen Corporation	Waste to Energy Project in Hanoi City	Waste Management	119,870
2019	Yokohama Water Co., Ltd.	Energy Saving by Introduction of High Efficiency Water Pumps in Hue City	Energy Efficiency	4,060
2019	DAIICHI JITSUGYO CO., LTD.	Introduction of Biomass Boiler to Chemical Factory	Renewable Energy	16,882

Total 21 (Energy Efficiency: 16, Renewable Energy: 2, Transport: 2, Waste management: 1)

What kind of projects are supported by this financing programme?



- 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.



Consortium must include both an owner and user of facility installed by the model project.

- (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.

What kind of cost is covered or not covered in this program?

✓ COVERED

- Facilities and Equipment
- Monitoring Equipment
- Main construction work
- Surveying and Testing
- Administrative Work
- Other necessary costs approved by GEC

✓ NOT COVERED

- Removal work for existing facilities and equipment
- Civil engineering work
- Consumable supplies and materials
- Spare parts
- Emergency facilities and equipment
- Cost related to restoration of function
- Cost related to land acquisition
- Forward exchange contract and remittance charge

What is the criteria of cost-effectiveness?

JPY4,000 / tCO₂-e

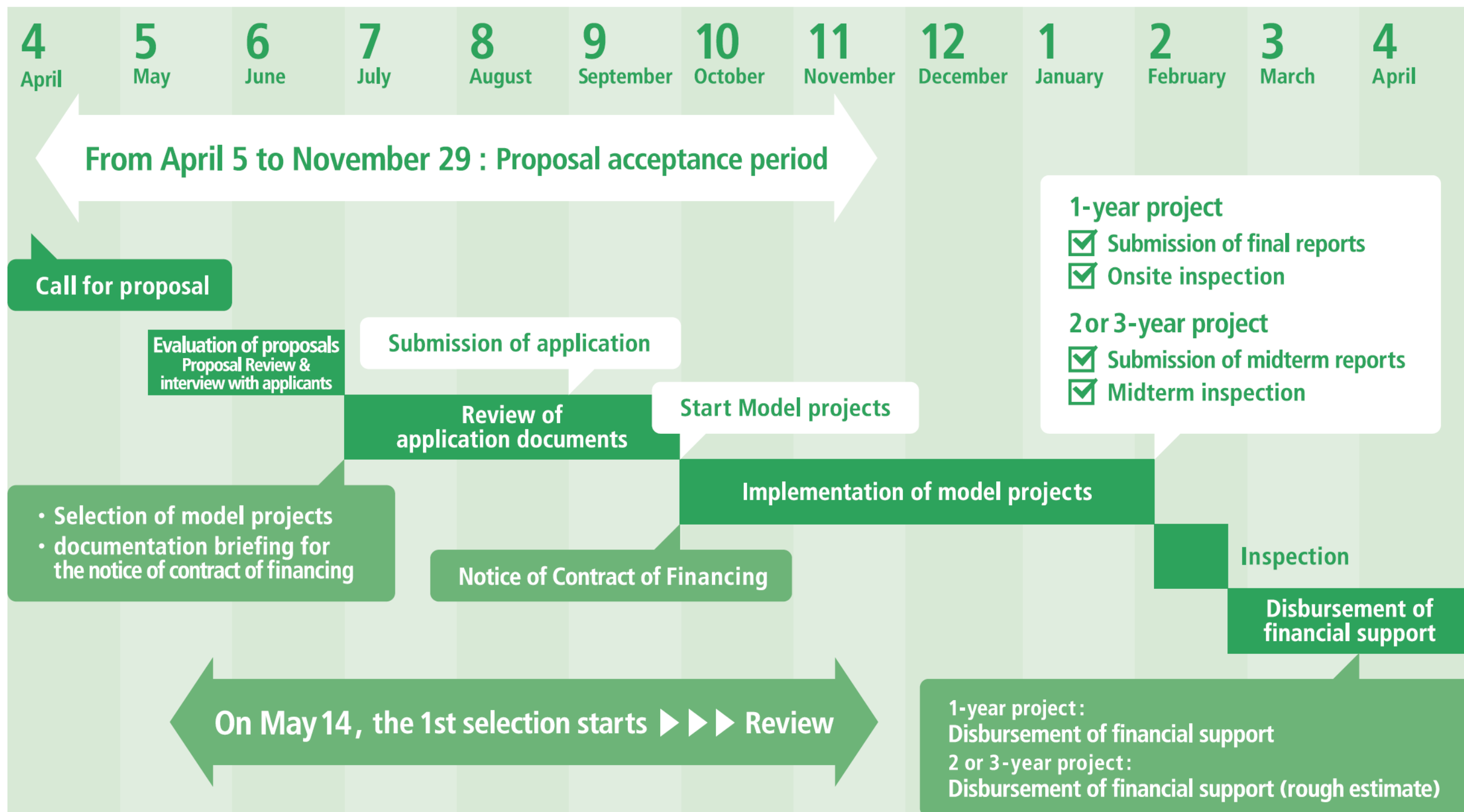
$$= \frac{\text{Amount of financial support[JPY]}}{\text{Emission reductions of GHG [tCO}_2\text{equivalent/y]} \times \text{legal durable years[y]}}$$

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

JPY3,000 / tCO₂-e

In case the number of Solar power projects by each country is 5 or more.
(Mongolia and Thailand)

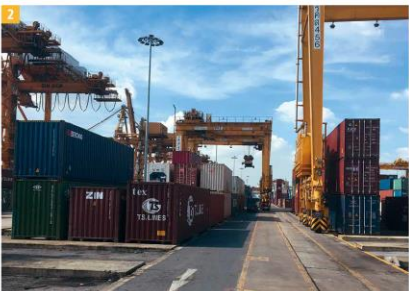
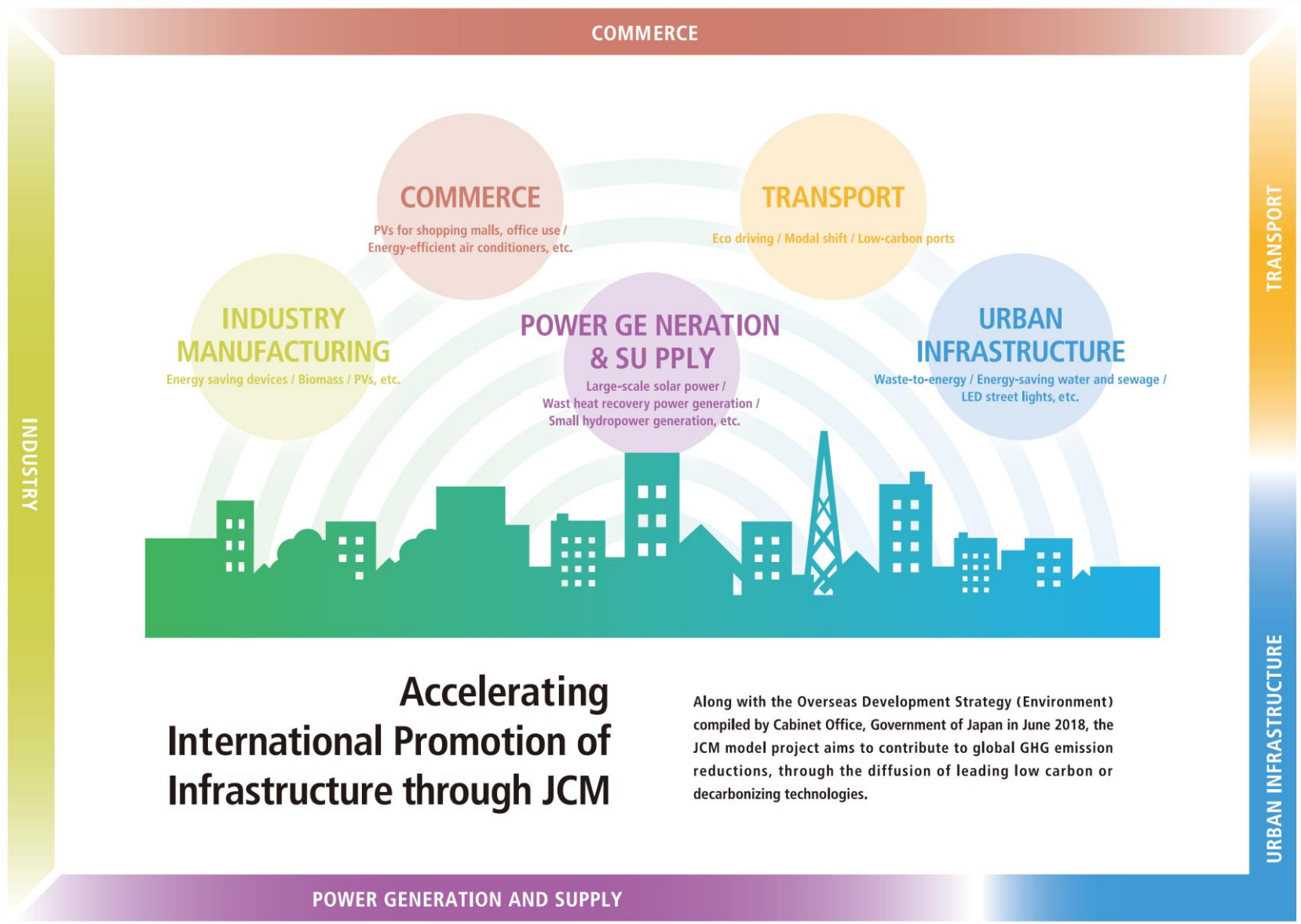
Budget	JPY9.9 billion (Approx. USD90million)	<div>Financial support per project</div> <hr/> <div>From ¥50million to ¥2billion (approx.)</div>
Executing Entity	International Consortium that consists of a Japanese entity and a JCM partner-country entity (ies)	
Scope of Financing	Facilities, equipment, vehicles, etc. which reduce CO2 from fossil fuel combustion as well as construction cost for installing those facilities, etc.	
Eligible Projects	Start installation after the Contract of Finance is concluded and finish installation within 3 years.	
Maximum percentage of Financial Support	Maximum of 50% and reduce the percentage according to the number of already selected project(s) using a similar technology in each partner country. ※ Number of already selected project(s) using a similar technology in each partner country : none (0) = up to 50%, up to 3 (1-3) = up to 40%, more than 3 (>3) = up to 30%. The percentage of financial support will be determined by GEC.	
Cost-effectiveness	Cost-effectiveness of GHG emission reductions is expected to be JPY4,000/tCO2eq or better. ※ If the number of PV projects in a partner country is 5 or more, cost-effectiveness is expected to be JPY3,000/tCO2eq or better.	



- 1 Thailand / FAST RETAILING CO., LTD.
High Efficiency LED Lighting
- 2 Cambodia / AEON MALL Co., Ltd.
Solar Power System and High Efficiency Centrifugal Chiller
- 1 Bangladesh / Ebara Refrigeration Equipment & Systems Co., Ltd.
High Efficiency Centrifugal Chiller
- 2 Mexico / Suntory Spirits Limited
Once-through Boiler and Fuel Switching



- 3 Palau / Pacific Consultants Co., Ltd.
Solar Power Plants for Commercial Facilities
- 4 Indonesia / Toyota Tsusho Corporation
Double-Bundle type Heat Pump
- 1 Indonesia / Hokusan Co., Ltd.
CNG-Diesel Equipment to Public Bus
- 2 Thailand / Yokohama Port Corporation
Energy Efficient Equipment to Bangkok Port



- 3 Indonesia / Environmental Management and Technology Center
Energy Saving in Industrial Wastewater Treatment System
- 4 Myanmar / Kirin Holdings Company, Limited.
Energy Saving Brewing Systems
- 1 Thailand / TSB Co., Ltd.
Floating Solar Power System
- 2 Mexico / NIT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
Power Generation with Methane Gas Recovery System



- 1 Viet Nam / Yuko Keiso Co., Ltd.
Amorphous High Efficiency Transformers in power grid
- 2 Viet Nam / Yokohama Water Co., Ltd.
High Efficiency Water Pumps
- 3 Myanmar / JFE Engineering Corporation
Waste to Energy Plant in Yangon City
- 3 Myanmar / Fujita Corporation
Rice Husk Power Generation

Consultation by GEC

GEC provides application consultation in order to assist project formation for entities interested in JCM Model Project. Please feel free to contact us. Please send an e-mail to jcm-info@gec.jp. Subject of e-mail should be "Consultation on application for JCM Model Project (Your company name)".



Suitable for Getting advice on your proposal at various phases.



Outreach Activities of GEC

- GEC website on JCM
<http://gec.jp/jcm/>
- GEC's JCM Twitter
https://twitter.com/GEC_JCM_Info
- JCM Seminar



Cảm ơn bạn đã quan tâm!



Global Environment Centre Foundation(GEC) Tokyo Office

E-mail : jcm-info@gec.jp URL : <http://gec.jp/>