

Overview of the Financing Programme for JCM Model Projects

21th October 2019

**Global Environment Centre Foundation
(GEC)**



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

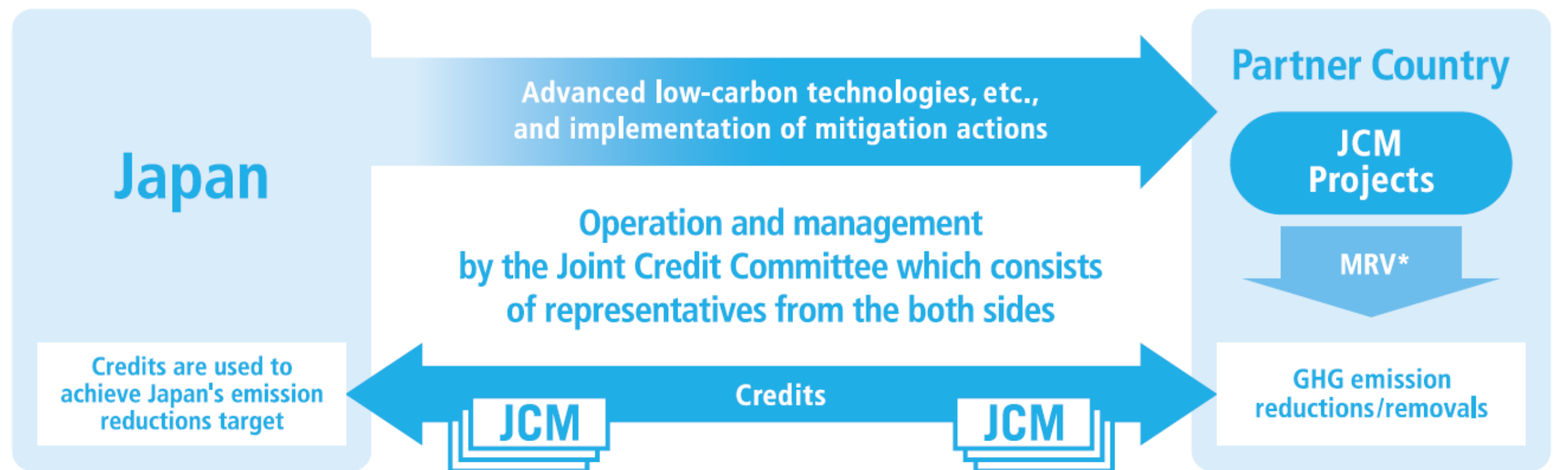
Basic concepts of JCM

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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

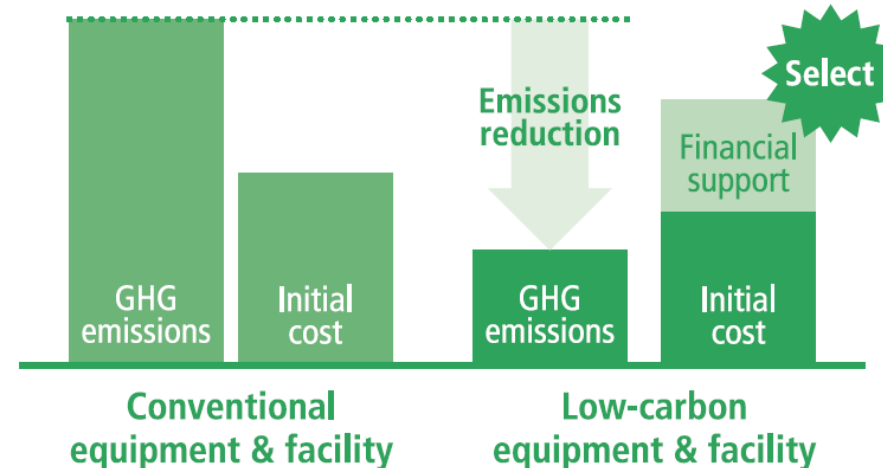
Project management & report
MRV result

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)



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

- 1 MW 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 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
- 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

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

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

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	Expected GHG Emission Reductions (tCO2/y)
2013	Ebara Refrigeration Equipment & Systems Co., Ltd.	Energy Saving for Air-conditioning and Process Cooling at Textile Factory 2	Energy Efficiency	152
2013	Lawson, Inc.	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	Energy Efficiency	141
2013	Mayekawa Manufacturing Co., Ltd.	Energy Efficient Refrigerants to Cold Chain Industry	Energy Efficiency	165
2013	Toyota Tsusho Corporation	Energy Saving by Installation of Double Bundle-type Heat Pump	Energy Efficiency	175
2013	Ebara Refrigeration Equipment & Systems Co., Ltd.	Energy Saving for Air-conditioning and Process Cooling at Textile Factory 1	Energy Efficiency	117
2014	Toyotsu Machinery Corporation	Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer	Energy Efficiency	91
2014	Ebara Refrigeration Equipment & Systems Co., Ltd.	Energy Saving for Textile Factory Facility Cooling by High-efficiency Centrifugal Chiller	Energy Efficiency	205
2014	Kanematsu Corporation	Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory	Energy Efficiency	19,011
2014	Toray Industries, Inc.	Reducing GHG Emission at Textile Factories By Upgrading to Air-saving Loom	Energy Efficiency	742
2014	JFE Engineering Corporation	Power Generation by Waste-heat Recovery in Cement Industry	Effective Use of Energy	149,063
2014	Itochu Corporation	Installation of Solar Power System and Storage Battery to Commercial Facility	Renewable Energy	385

2015	Toyota Tsusho Corporation	Installation of Gas Co-generation System for Automobile Manufacturing Plant	Effective Use of Energy	21,793
2015	Sharp Energy Solutions Company	1.6MW Solar PV Power Plant Project in Jakabaring Sport City	Renewable Energy	917
2015	Sumitomo Rubber Industries, Ltd.	Introduction of High Efficiency Once-through Boiler in Golf Ball Factory	Energy Efficiency	148
2015	NTT FACILITIES, INC.	Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller	Energy Efficiency	398
2015	NTT FACILITIES, INC.	Energy Saving for Industrial Park with Smart LED Street Lighting System	Energy Efficiency	543
2015	Mitsubishi Chemical Corporation	Introduction of High-efficiency Once-through Boiler System in Film Factory	Energy Efficiency	363
2016	Toyo Energy Farm Co., Ltd.,	10MW Mini Hydro Power Plant Project in North Sumatra	Renewable Energy	47,182
2016	FAST RETAILING CO., LTD.	Introduction of LED Lighting to Sales Stores	Energy Efficiency	2,583
2016	Nisshinbo Textile Inc.,	Introduction High Efficiency Looms in Weaving Mill	Energy Efficiency	430
2016	EMATEC:Environmental Management and Technology Center	Energy Saving in Industrial Wastewater Treatment System for Rubber Industry	Energy Efficiency	403
2016	Next Energy & Resources Co., Ltd.	Introduction of 0.5MW Solar Power System to Aroma and Food Ingredients Factory	Renewable Energy	369

2017	DENSO	Introduction of Gas Co-generation System and Absorption Chiller to Motor Parts Factory	Effective Use of Energy Energy Efficiency	4,629
2017	Tokyo Century Corporation	Introduction of Absorption Chiller to Chemical Factory	Energy Efficiency	917
2017	CHODAI Co.,Ltd.	10MW Mini Hydro Power Plant Project in Lae Ordi River in North Sumatra	Renewable Energy	37,699
2018	Tokyo Century Corporation	Introduction of High Efficiency Injection Molding Machine to Plastic Parts Factory	Energy Efficiency	4,380
2018	Aura Green Energy Co., Ltd	12MW Biomass Power Plant Project in Ache Province, Sumatera	Renewable Energy	31,322
2018	Voith Fuji Hydro K.K.	Rehabilitation Project of Power Generation System at Karai 7 Mini Hydro Power Plant	Renewable Energy	1,133
2018	Hokusan Co., Ltd.	Introduction of CNG-Diesel Hybrid Equipment to Public Bus in Semarang	Transport	2,667
2018	Otsuka Pharmaceutical Factory, Inc.	Energy Saving by Introducing High Efficiency Autoclave to Infusion Manufacturing Factory	Energy Efficiency	1,949

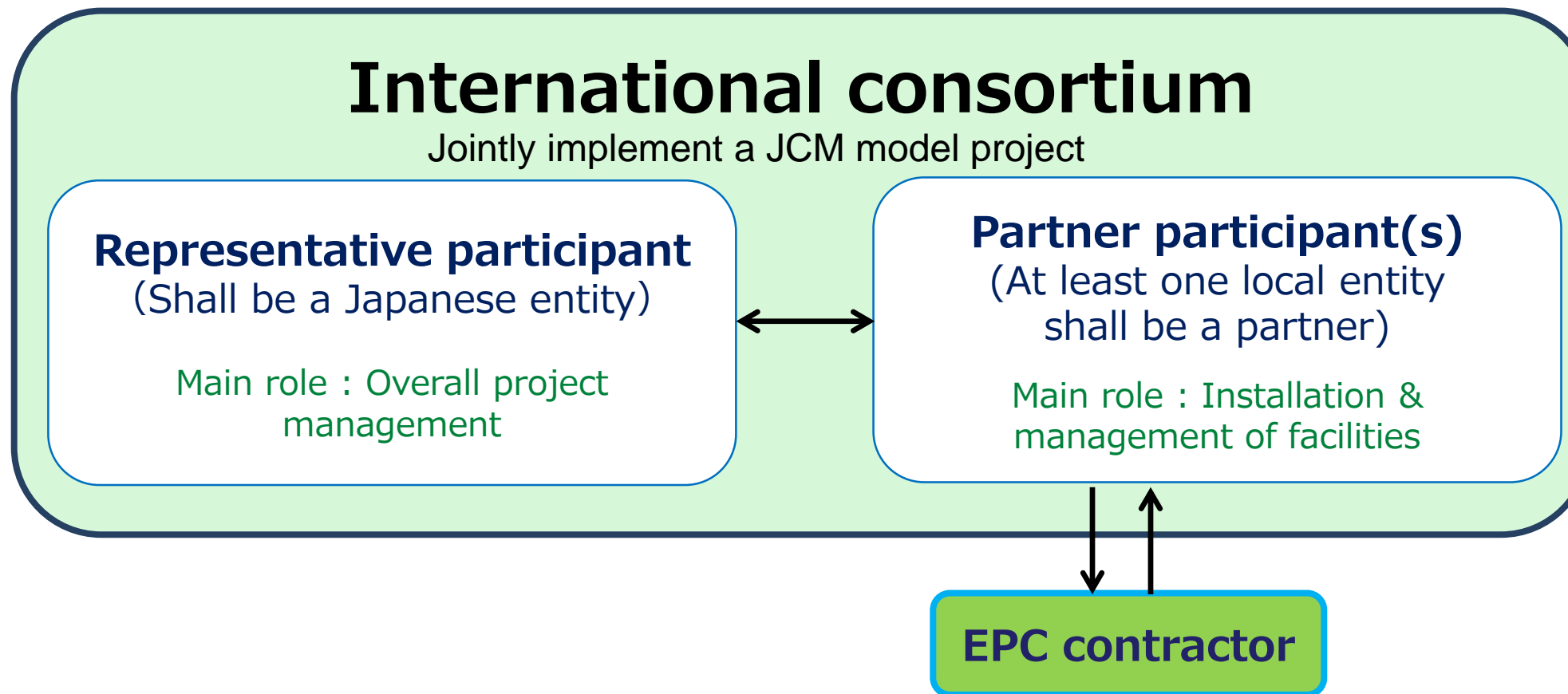
Total 30 Projects

- **Energy Efficiency: 20**
- **Effective Use of Energy: 3**
- **Renewable Energy: 7**
- **Transport: 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)

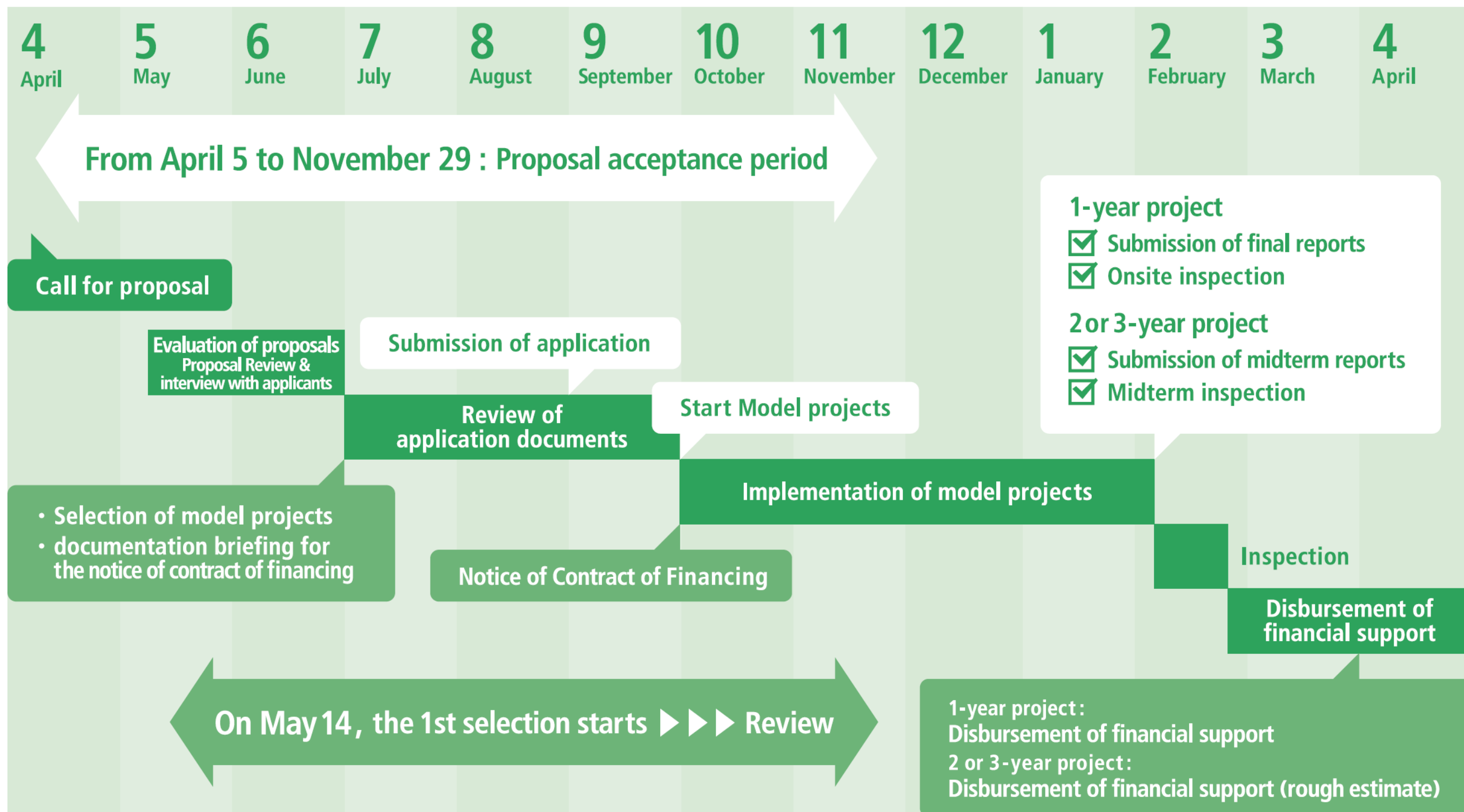
Budget	JPY9.9 billion (Approx. USD90million)	<div>Financial support per project</div> <div>From ¥50million to ¥2billion (approx.)</div>
Executing Entity	International Consortium that consists of a Japanese entity and a JCM partner-country entity (ies)	
Scope of Financing	Facilities, equipment, vehicles, 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.	

JCM Model Projects Schedule in FY2019



Global Environment Centre For

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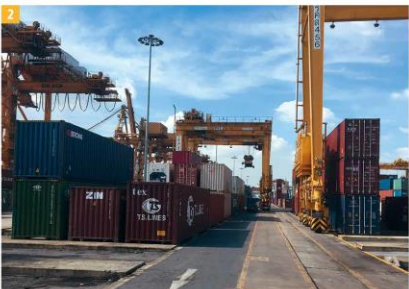
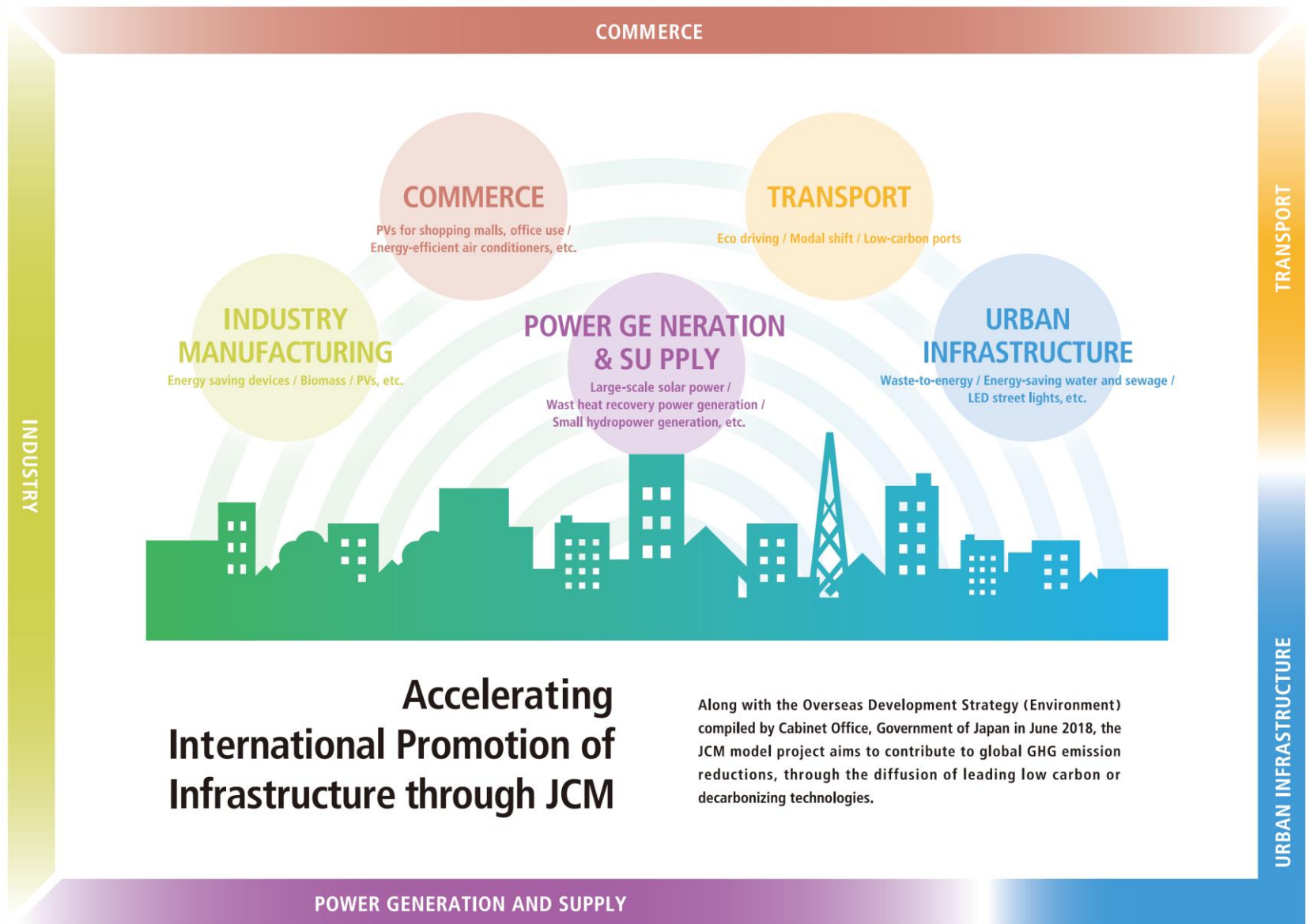
Guideline

for Submitting
JCM model project proposal in FY2019

- 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



Terima kasih banyak!

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