

# JCM Webinar in Republic of Palau

## *Financing Programme for JCM Model Projects and JCM Global Match*

**26th February 2021**

**Global Environment Centre Foundation (GEC)**



## **1. Financing Programme for JCM Model Projects**

- **Overview and Recent trend of JCM Model Projects**
- JCM Model Projects in Republic of Palau

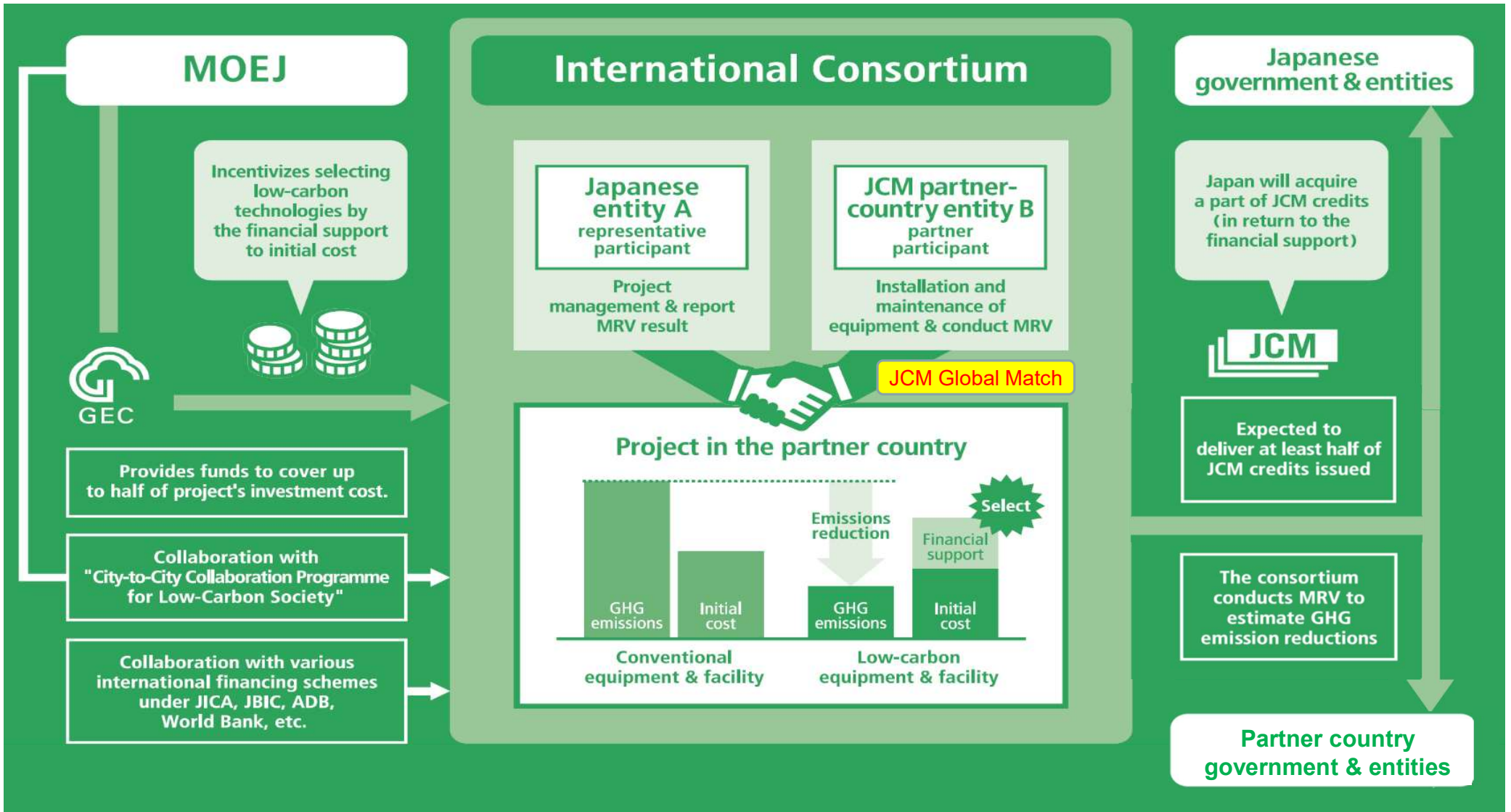
## **2. Promotion / “JCM Global Match”**

# Outline of JCM Model Projects

<b>Budget</b>	Approx. USD90million
<b>Executing Entity</b>	International Consortium that consists of a Japanese entity and a JCM partner-country entity(ies)
<b>Scope of Financing</b>	Facilities, equipment, vehicles, etc. which reduce CO2 from fossil fuel combustion as well as construction cost for installing those facilities, etc.
<b>Eligible Projects</b>	Start installation after the Contract of Finance is concluded and finish installation within 3 years.
<b>Maximum percentage of Financial Support</b>	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.
<b>Cost-effectiveness</b>	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.

**Guideline** for Submitting JCM model project proposal

# Basic Concept of JCM Model Projects



## What kind of projects are supported by this financing programme?



- Reduce energy-related CO2 emissions with leading low carbon or decarbonizing 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.

## International consortium

Jointly implement a JCM model project

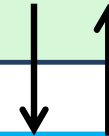
**Representative participant  
(Shall be a Japanese entity)**

Main role : Overall project management



**Partner participant(s)  
(At least one local entity  
shall be a partner)**

Main role : Installation & management of facilities



**EPC contractor**

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



## What is the criteria of cost-effectiveness?

### **JPY4,000/tCO<sub>2</sub>equivalent**

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

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

### **JPY3,000/tCO<sub>2</sub>equivalent**

In case the number of similar technological Projects in each country is 5 to 9.

### **JPY2,500/tCO<sub>2</sub>equivalent**

In case the number of similar technological Projects in each country is 10 or more.

# Categorization by applied technology type

Sector	Technology	Mongolia	Bangladesh	Ethiopia	Kenya	Maldives	Vietnam	Lao PDR	Indonesia	Costa Rica	Palau	Cambodia	Mexico	Saudi Arabia	Chile	Myanmar	Thailand	Philippines	Total
		MN	BD	ET	KE	MV	VN	LA	ID	CR	PW	KH	MX	SA	CL	MM	TH	PH	
1. Energy Efficiency	Air Conditioning System						3		1								1		5
	Chiller		2				4		4	1		1					3		15
	Refrigerator								1							2	4		7
	Absorption Chiller Using Waste Heat								2								2		4
	Swirling Induction Type Air-conditioning System																1		1
	Double Bundle-type Heat Pump						1			1							1		3
	Fridge and Freezer Showcase									1							1		2
	Boiler	2					1			3			1			2	1		10
	Water Heater Using Waste Heat										1								1
	Waste Heat Recovery System															2	1		3
	Heat Exchanger																1		1
	Transformer						4	1										1	5
	LED Lighting									2								2	4
	LED Street Lighting with Dimming System									1			1						2
	Pump						1												1
	Air Compressor						1											1	2
	Aeration System									1									1
	Regenerative Burners									1									1
	Gas Fired Furnace						1												1
	Gas Fired Melting Furnace																	1	1
	Air Conditioning Control System						1											1	2
	Frequency Inverter for Pump						1						1						2
	Loom		1							2								1	4
	Old Corrugated Cartons Process									1									1
	Battery Case Forming Device						1												1
	Electrolyzer in Chlorine Production													1				1	2
	Wire Stranding Machines						1												1
	Gantry crane																	1	1
	Electric Forklift																	1	1
	Autoclave									1									1
Multi-effect Distillation System												1						1	
Injection Molding Machine									1									1	
2. Renewable Energy	Solar Power Plant	6	1	1	2	2	2	2	2	1	5	4	3		2		10	5	48
	Solar Power Plant with Battery								2						1				2
	Small Hydropower Plant								5									4	9
	Wind Power Plant																	1	1
	Biomass Power Plant								1			1			1	1	1	1	6
	Biogas Power Plant																	1	1
	Biomass boiler						1										1		2
	Biogas boiler															1		1	2
	Biomass Co-generation															1		1	1
	3. Effective Use of Energy	Power Generation by Waste Heat Recovery								1							1	1	
Gas Co-generation									2								3		5
4. Waste Handling and Disposal	Waste-to-Energy Plant															1			1
	Power Generation by Methane Recovery											1							1
5. Transportation	Digital Tachograph System						1												1
	CNG-Diesel Hybrid Bus								1										1
	Reefer Container						1												1
Total	Number of technology : 48																		

White 0 project = Up to 50%      Yellow 1-3 project(s) = Up to 40%      Orange more than 4 projects = Up to 30%



## JCM ECO Lease Scheme

In the fiscal year 2020, “JCM Eco Lease Scheme” is newly introduced to JCM Model Project to cover leasing charges and interests. This scheme has an advantage in reducing the reporting burden of representative participants with shorter monitoring period and simple proposal document.

<b>Representative Participant</b>	<b>Japanese leasing company</b>
<b>Amount of Financial Support</b>	<b>Up to JPY500 million for 3 years in principal</b>
<b>Percentage of Financial Support</b>	<b>Uniformly 10% of total leasing charges including leasing interests</b>
<b>Period of MRV</b>	<b>Equal to leasing period</b>
<b>Leasing Period</b>	<b>At least 5 years</b>
<b>Costs Eligible for Financing</b>	<b>Leasing charges of the costs of facilities/equipment and relevant lease interests</b>
<b>Eligible Type of Technologies</b>	<b>In principle, technologies with JCM methodology (ies) that have been either approved or proposed</b>
<b>Financial Statement for Application</b>	<b>Only financial statements of Representative Participant need to be submitted.</b>

- 1 Thailand / PACT RETAIL INC. CO., LTD.  
High Efficiency LED Lighting
- 2 Cambodia / AEON MALL Co., Ltd.  
Solar Power System and High Efficiency Centrifugal Oil Filter
- 3 Bangladesh / Aikya Refrigeration Equipment & Systems Co., Ltd.  
High Efficiency Centrifugal Chiller
- 4 Mexico / Stanley Sales Limited  
On-to-through Boiler and Fuel Switching



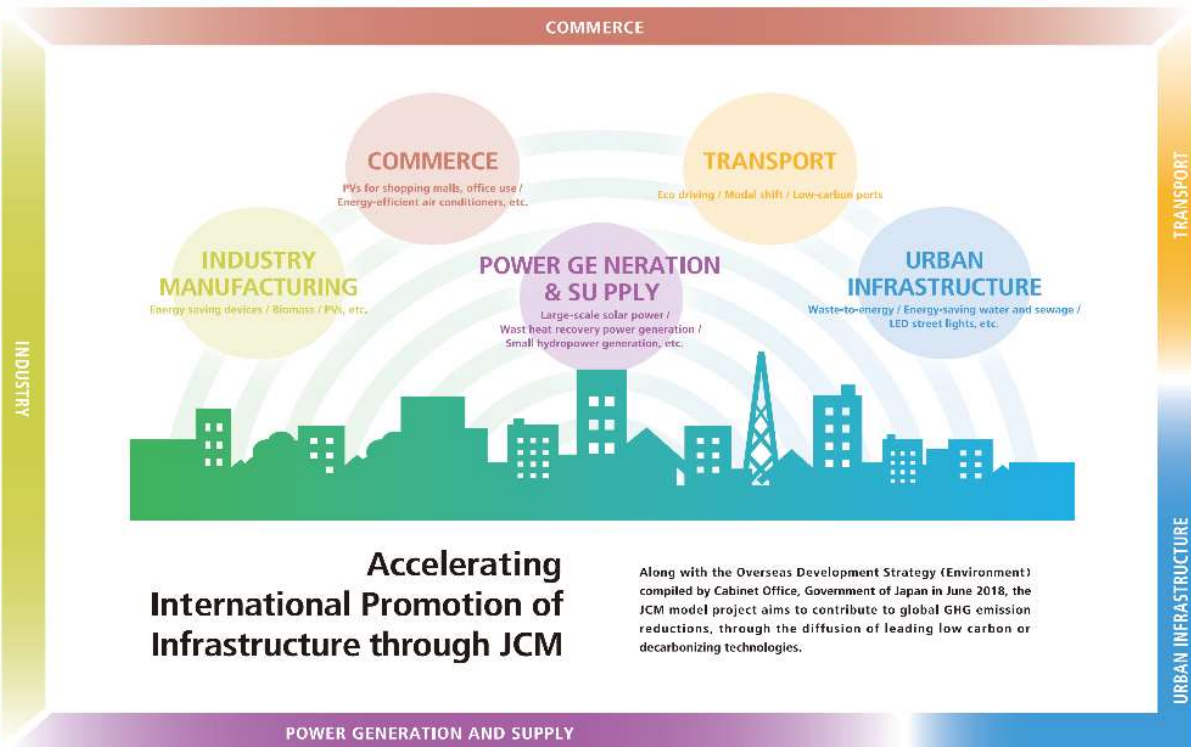
- 5 Palau / Pacific Consultants Co., Ltd.  
Solar Power Plants for commercial facilities
- 6 Indonesia / Toyota Tsusho Corporation  
Double-Bundle type Heat Pump
- 7 Indonesia / Hokusai Co., Ltd.  
On-to-through Equipment for Public Bus
- 8 Thailand / Yokohama Port Corporation  
Energy Efficient Equipment to Bangkok Port



- 1 Indonesia / Environmental Management and Technology Center  
Energy Saving in Industrial Wastewater Treatment System
- 2 Myanmar / Kinta Holdings Company Limited  
Energy Saving Brewing System
- 3 Thailand / TSD Co., Ltd.  
Floating Solar Power System
- 4 France / ILLIUM SOLAR RESEARCH & MANUFACTURING CONSULTING, Inc.  
Power Generation with Methane Gas Recovery System

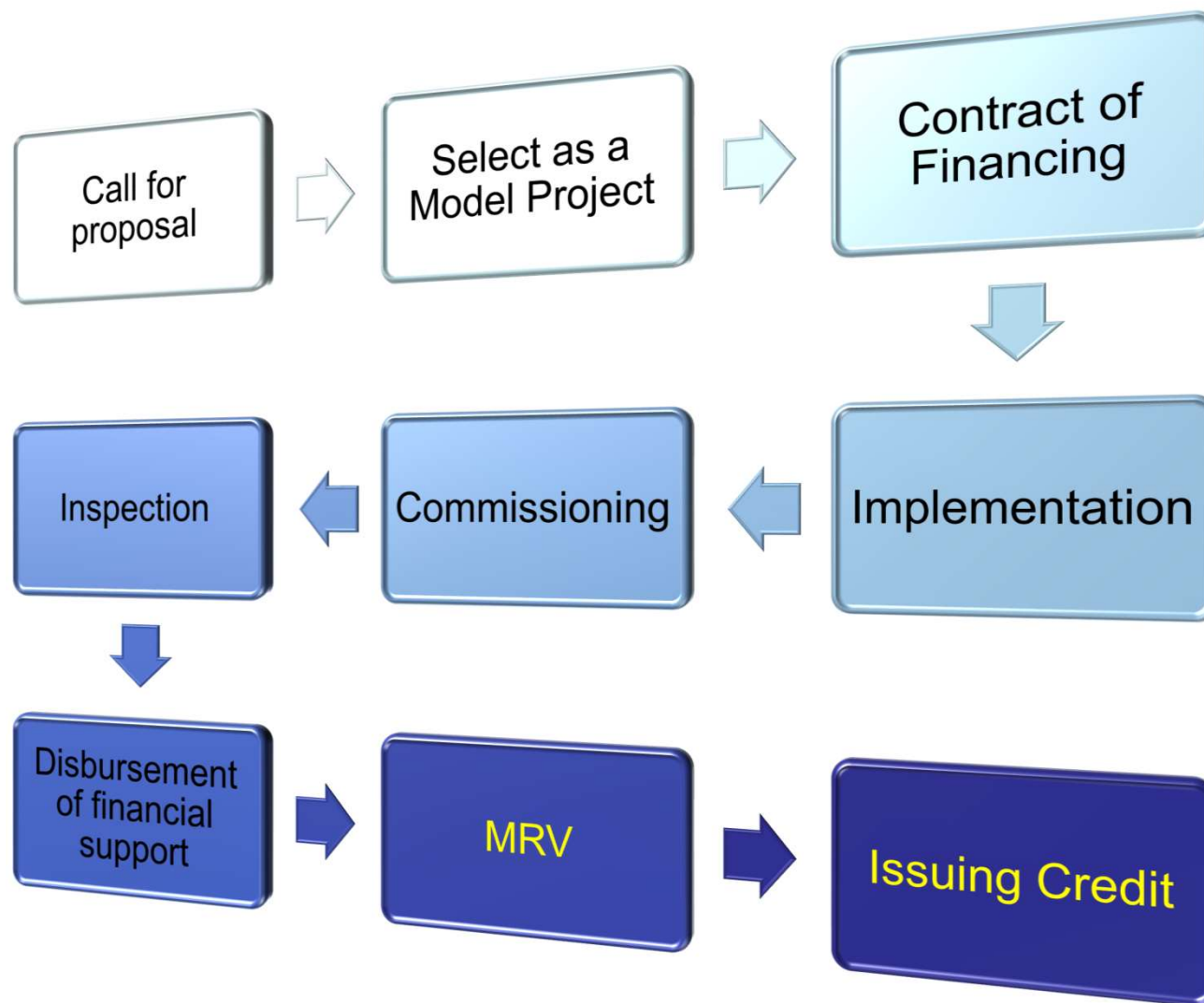


- 1 Viet Nam / Yaka Kenzo Co., Ltd.  
Amorphous High Efficiency Transformers in power grid
- 2 Viet Nam / Yokohama Water Co. Ltd.  
High Efficiency Water Pumps
- 3 Myanmar / JTC Engineering Corporation  
Waste-to-Energy Plant in Yangon City
- 4 Myanmar / Kujiko Corporation  
Silo Husk Power Generation



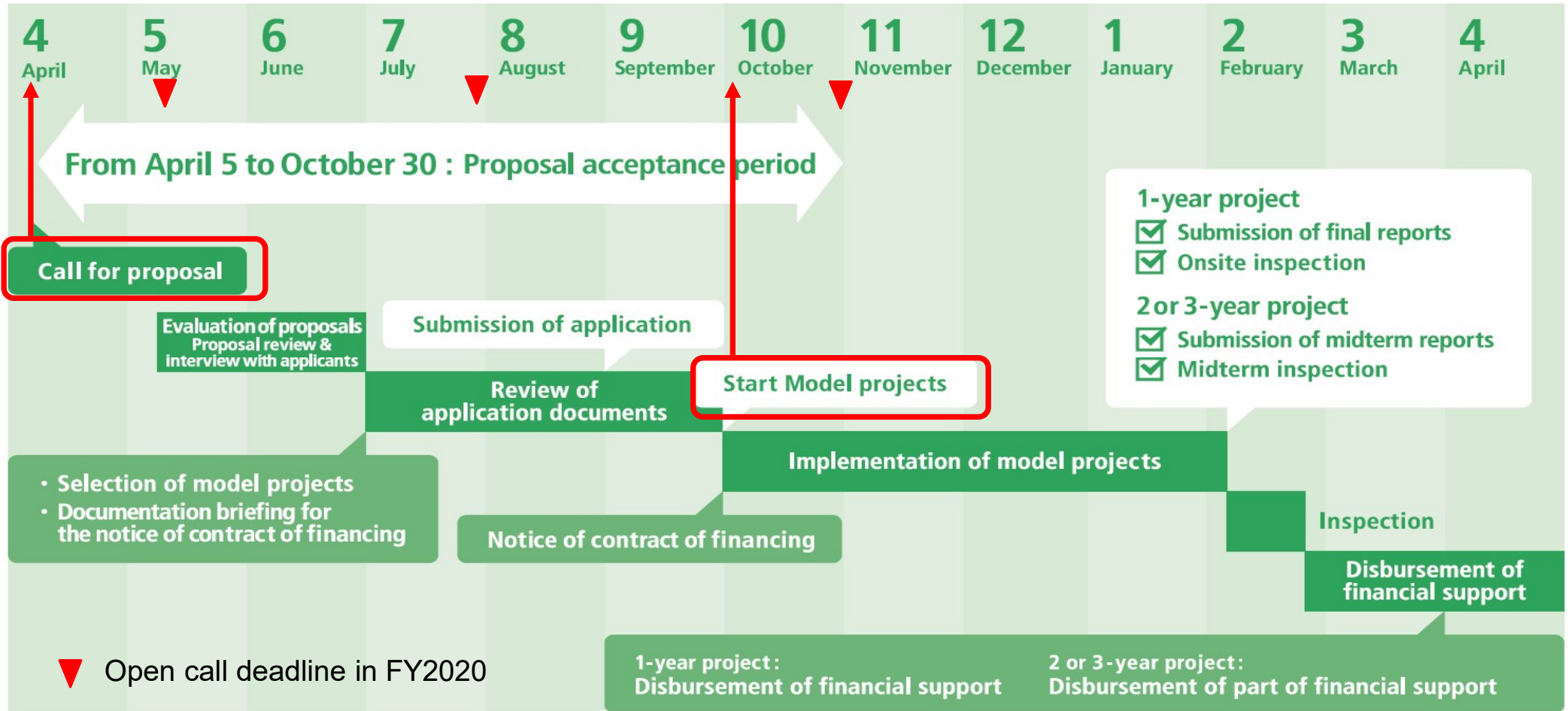
## Accelerating International Promotion of Infrastructure through JCM

Along with the Overseas Development Strategy (Environment) compiled by Cabinet Office, Government of Japan in June 2018, the JCM model project aims to contribute to global GHG emission reductions, through the diffusion of leading low carbon or decarbonizing technologies.





# JCM Model Projects Schedule in FY2020



## Guideline

for Submitting  
JCM model project proposal in FY2020

# Selection of Projects in FY2020

Partner Country	Entity	Project Title	Sector	Expected GHG Emission Reductions (tCO <sub>2</sub> /y)
Vietnam	Kanematsu KGK Corp.	57MW Solar Power Project in An Giang Province	Renewable Energy	28,208
Vietnam	DAIICHI JITSUGYO CO., LTD.	Introduction of Biomass Co-generation system to Food Factory	Renewable Energy	24,115
Vietnam	Marubeni Corporation	Introduction of Biomass Boiler to Soluble Coffee Manufacturing Plant	Renewable Energy	19,498
Vietnam	Acecook Co., Ltd.	Introduction of High Efficiency Boiler System to Food Factory	Energy Efficiency Improvement	7,631
Vietnam	Hitachi-Johnson Controls Air Conditioning, Inc	Introduction of High Efficiency Air-conditioning System to Hotel in Ho Chi Minh City	Energy Efficiency Improvement	184
Lao PDR	Kayama Kogyo Co., Ltd.	14MW Solar Power Project in Vientiane Province and Borikhamxay Province	Renewable Energy	8,104
Indonesia	NiX Co., Ltd.	6MW Mini Hydro Power Plant Project in West Pasaman, West Sumatra	Renewable Energy	18,319
Thailand	The Kansai Electric Power Company, Incorporated	Introduction of 8.1MW Rooftop Solar Power System in Motorcycle Factory and Fiber Factory	Renewable Energy	3,797
Thailand	The Kansai Electric Power Company, Incorporated	Introduction of Energy Saving Centrifugal Chillers to Machinery Factory	Energy Efficiency Improvement	225
Philippines	Mitsubishi Heavy Industries, Ltd.	29MW Binary Power Generation Project at Palayan Geothermal Power Plant	Renewable Energy	72,200
Saudi Arabia	Marubeni Corporation	400MW Solar Power Project in Rabigh Region	Renewable Energy	477,129
Chile	FARMLAND Co., Ltd.	3MW Solar Power Project Utilizing Farmland in Valparaiso Region	Renewable Energy	2,397
Myanmar	Tokyo Century Corporation	7.3MW Solar Power Project in Mandalay International Airport and Yangon City	Renewable Energy	3,276
Thailand	Sumitomo Mitsui Finance and Leasing Company, Limited	Introduction of 5MW Rooftop Solar Power System to Aluminum Building Materials Factory	Renewable Energy	2,200
Thailand	The Kansai Electric Power Company, Incorporated	Introduction of 2.6MW Rooftop Solar Power System to Semiconductor Factory	Renewable Energy	1,188
Thailand	Inabata Co., Ltd.	2.5MW Solar Power Project with Blockchain Technology in Chiang Mai University Town Community	Renewable Energy	1,041
Philippines	Tokyo Century Corporation	Introduction of 2MW Solar Power System to Shopping Mall (JCM Eco Lease Scheme)	Renewable Energy	1,476
Indonesia	Voith Fuji Hydro K.K.	5MW Hydro Power Project in Bengkulu Province	Renewable Energy	15,299
Myanmar	Yuko Keiso Co., Ltd.	Introduction of Energy Saving Equipment to Complex Buildings of Smart Urban Development Project in Yangon	Energy Efficiency Improvement	1,544
Vietnam	Idemitsu Kosan Co., Ltd.	Introduction of 2MW Solar Power System for Pellet Factory	Renewable Energy	1,024
Indonesia	Alamport Inc.	4.2MW Rooftop Solar Power Project to Pharmaceutical Factories, Vehicles Dealers, and Timber Factories	Renewable Energy	3,961
Thailand	SHIZUOKA GAS CO., LTD.	Introduction of 2MW Rooftop Solar Power System to University	Renewable Energy	868
Indonesia	AURA-Green Energy Co., Ltd.	8MW Mini Hydro Power Plant Project in Maluku Province	Renewable Energy	18,034
Chile	Sharp Energy Solutions Corporation	34MW Solar Power Project in Nuble Region	Renewable Energy	25,576
Thailand	Shizen Energy Inc.	30MW Floating Solar Power Project in Industrial Park	Renewable Energy	13,739

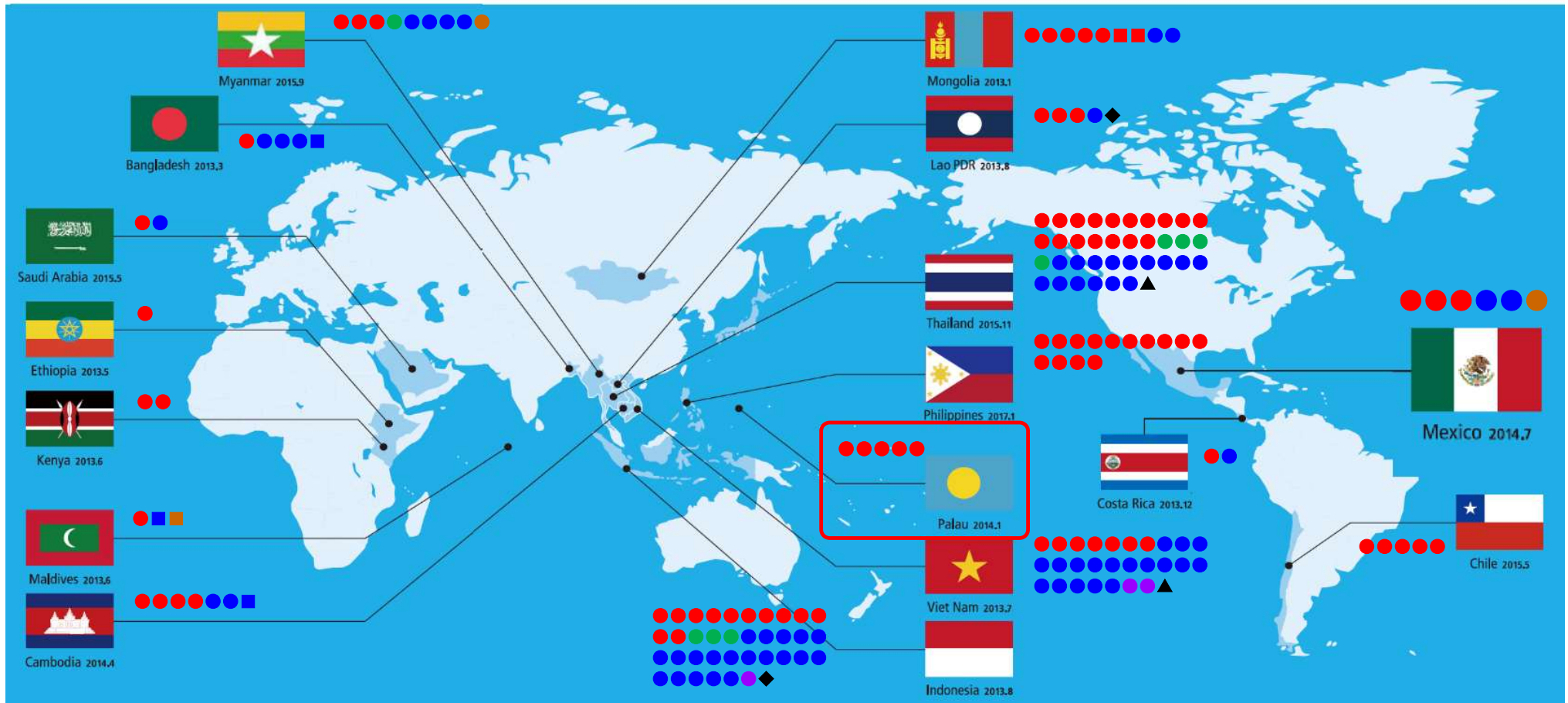
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## **2. Promotion / “JCM Global Match”**

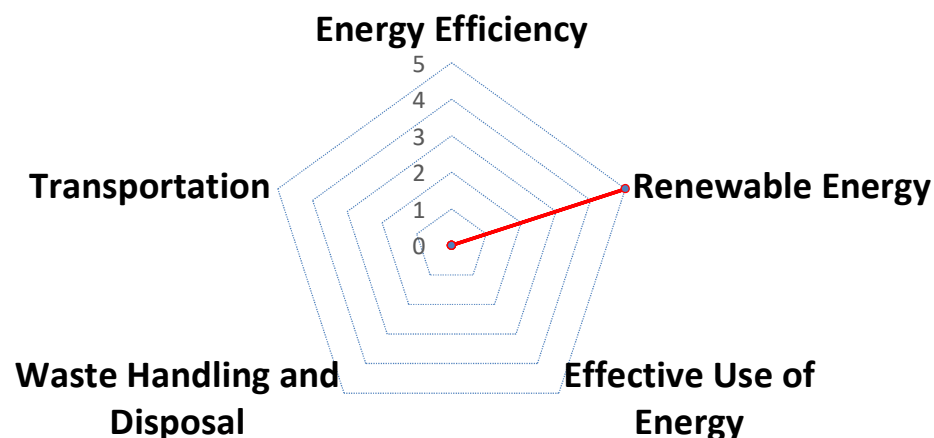


# Project Map of JCM Financing Programme, as of Jan.2021 Global Environment Centre Foundation



**Total 180 projects / 17 countries**  
 (● Model Project:170, ■ ADB:6, ◆ REDD+:2, ▲ F-gas:2)

- Renewable Energy
- Effective Use of Energy
- Energy Efficiency Improvement
- Transport
- Waste Handling and Disposal



Year	Entity	Project Title	Sector	Expected GHG Emission Reductions (tCO <sub>2</sub> /y)
2013	Pacific Consultants Co., Ltd.	Small Scale <b>Solar Power Plants</b> for Commercial Facilities in Island States	Renewable Energy	259
2014	Pacific Consultants Co., Ltd.	Small-Scale <b>Solar Power Plants</b> for Commercial Facilities Project II	Renewable Energy	320
2014	Pacific Consultants Co., Ltd.	<b>Solar PV System</b> for Schools Project	Renewable Energy	111
2018	Sharp Energy Solutions Corporation	Introduction of 0.4MW Rooftop <b>Solar Power System</b> in Supermarket	Renewable Energy	284
2019	Sharp Energy Solutions Corporation	Introduction of 1MW <b>Solar Power System</b> on Supermarket Rooftop	Renewable Energy	843

Following are new Candidate of JCM Model Projects from the Past case studies for Republic of Palau.

- 1. Introduction of Energy Saving Equipment to Complex Buildings**
- 2. Solar Power Project with Blockchain Technology**
- 3. See-through solar panels on the roof of greenhouse**
- 4. Wind Power Project**
- 5. JCM Eco Lease Scheme for small solar systems**
- 6. Introduction of CNG-Diesel Hybrid Equipment to Public Bus**
- 7. Introduction of Waste to Energy Plant**

Introduction of Energy Saving Equipment to Complex Buildings of Smart Urban Development Project in Yangon  
 PP(Japan): Yuko-Keiso Co., Ltd., PP(Myanmar): Kajima Yankin PPP Company Limited

**Outline of GHG Mitigation Activity**

KAJIMA Corporation together with Japan Overseas Infrastructure Investment Corp. (JOIN) is developing “Smart Urban Redevelopment Project” in central Yangon. This mixed-use development (consisting of offices, hotel, long-stay hotel and commercial facilities) aims to contribute to the diffusion of environmental technologies in Myanmar and encourage sustainable urban developments. This project introduces i] high efficiency chillers, ii] air conditioners with total heat exchangers, iii] hot water heat pumps and iv] Ventilation system at parking area.

Equipment	Facilities
High efficiency chillers	Hotel, Commercial facilities, Common-use space
Air conditioners equipped with total heat exchangers	Offices, Hotel
Hot water heat pumps	Long-stay hotel
Ventilation system at parking area	Common-use space



**Yankin PPP Redevelopment Project [ rendering ]**

Including Regional Contribution Facilities (Educational Facility, Transportation Square, Disaster Measures, etc.)

**Expected GHG Emission Reductions**

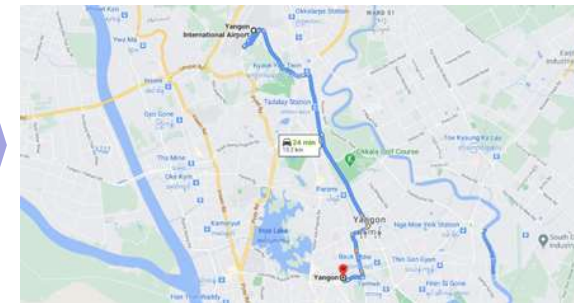
**1,544 t CO<sub>2</sub> /year**

= [Reference power consumptions - Project power consumptions] x Emission factor (EF)

- i] high efficiency chillers : 322t CO<sub>2</sub>/year
- ii] air conditioners with total heat exchangers : 239t CO<sub>2</sub>/year
- iii] hot water heat pumps : 738t CO<sub>2</sub>/year
- iv] Ventilation system at parking area : 245t CO<sub>2</sub>/year

**Sites of Project**

Approx. 13km south of Yangon International Airport



Map Data ©2020 Google

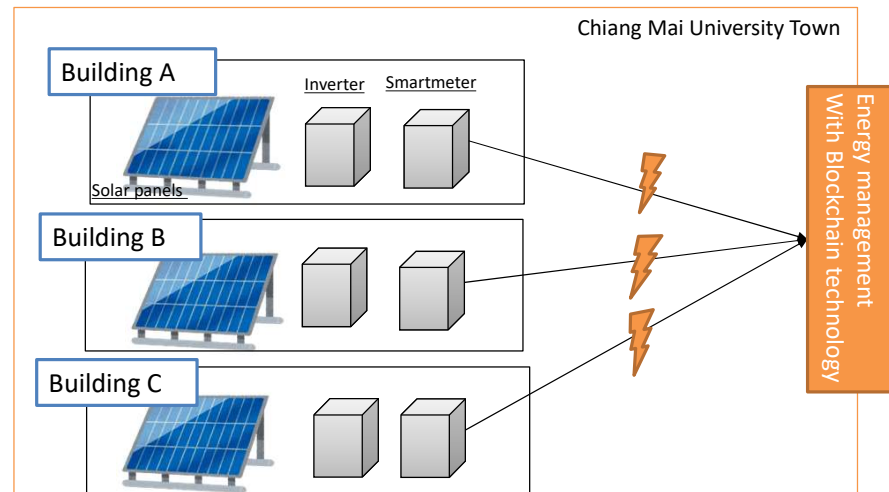
**2.5MW Solar Power Project with Blockchain Technology in Chiang Mai University Town Community**

PP (Japan): Inabata & Co.,Ltd , PP (Thailand): Thai Digital Energy Development Co.Ltd

**Outline of GHG Mitigation Activity**

This project introduces a 2.5 MW solar power generation system on the roofs of multiple buildings in Chiang Mai University, Thailand.

This project is operated by blockchain technology which realizes the expansion and maximum utilization of renewable energy on campus and reduces greenhouse gas (GHG) emissions by introducing renewable energy.

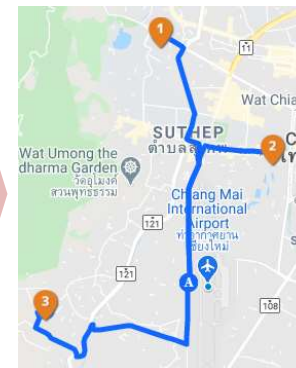


**Expected GHG Emission Reductions**

**1,041 tCO<sub>2</sub>/year**

$$= [(Reference\ power\ consumptions) - (Project\ power\ consumptions)] \times Emission\ factor\ (EF)$$

**Sites of Project**



Distance from Chiang Mai International airport

Zone 1: 7 km (NW)

Zone 2: 4 km (NE)

Zone 3: 5 km (SW)

Map data©2020 Google

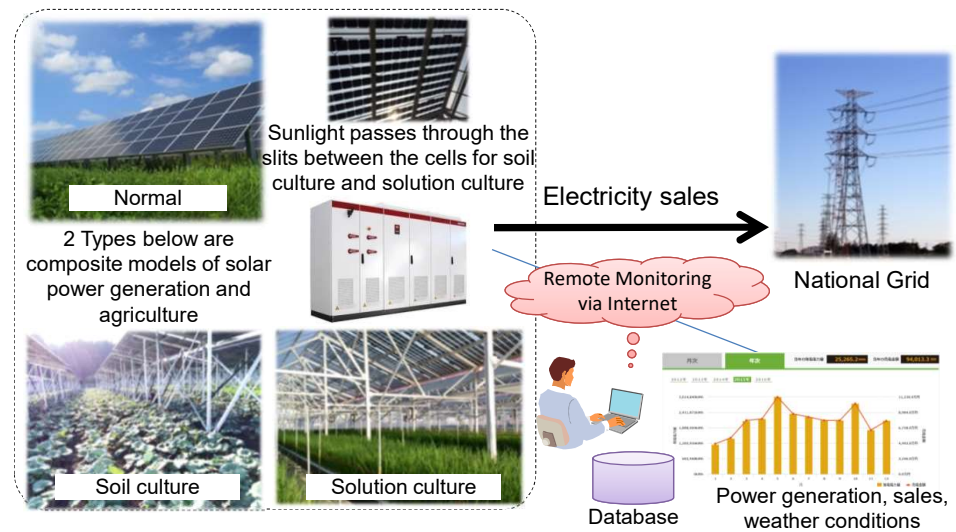


**Installation of 2.1MW Solar Power Plant for Power Supply in Ulaanbaatar Suburb**

PP (Japan): Farmdo Co., Ltd. / PP (Mongolia): Everyday Farm LLC, Bridge LLC

**Outline of GHG Mitigation Activity**

The purpose of this project is to reduce CO<sub>2</sub> emission, mitigate air pollution and stabilize power supply in Mongolia by installing 2.1MW scale solar power plants in the suburbs of Ulaanbaatar. This power plants can replace some part of power generation by coal-fired thermal power. Moreover, lots of achievements in daily life, mitigating air pollution, resolving power shortage, food supplying, etc., can be expected by synergy of agricultural and solar power generation technology.



**Expected GHG Emission Reductions**

**2,424 tCO<sub>2</sub>/year**

$$= \text{Project Electricity Generation(EG)} \times \text{Emission Factor (EF)}$$

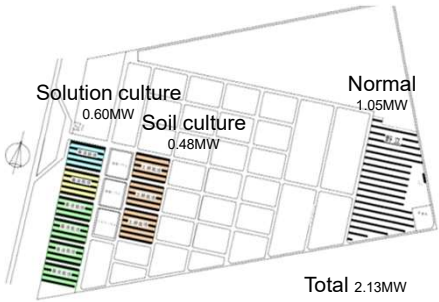
$$= \text{Power Generation Capacity[kW]} \times \text{Annual Operating Rate[\%]} \times 24\text{hours} \times 365\text{days} \times \text{EF}$$

**Site of JCM Model Project**

Monnaran Farm (24ha), District of Songinokhairkhan



Project site situated in the farm Everyday Farm owns is located 37km northwest of Ulaanbaatar city center.





**33MW Wind Power Project in Caraga Region, Mindanao**

PP (Japan): CHODAI Co., Ltd, Shizen Energy Inc.

PP (Philippines): Equi-Parco Construction Company, Equi-Parco Holdings Corporation, Caraga Wind Energy Corporation

**Outline of GHG Mitigation Activity**

This project installs wind power generation facilities with a capacity of 33 MW (4.2 MW wind turbine x 8 towers) in Agusan del Norte, Caraga Region, Mindanao.

Generated power is sold to power grid and reduces greenhouse gas (GHG) emissions by replacing grid electricity. Stable supply of wind power from these facilities also helps to develop sustainable economy in Mindanao.



**Expected GHG Emission Reductions**

**35,350 tCO<sub>2</sub>/year**

$$= (\text{Reference CO}_2 \text{ emissions}) [\text{tCO}_2/\text{year}] - (\text{Project CO}_2 \text{ Emission}) [\text{tCO}_2/\text{year}]$$

$$= ((\text{Reference Power consumption}) [\text{MWh/year}] - 0 [\text{MWh/year}]) \times \text{Emission Factor} [\text{tCO}_2/\text{MWh}]$$

**Sites of Project**



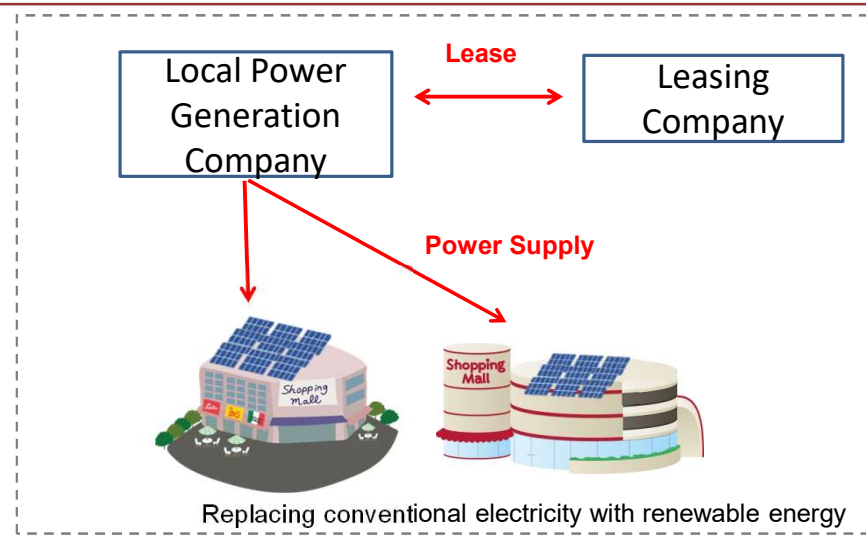
**Introduction of 2MW Solar Power System to Shopping Mall (JCM Eco Lease Scheme)**

PP (Japan): Tokyo Century Corporation, PP (Philippines): BPI Century Tokyo Rental Corporation (BPICTR)

**Outline of GHG Mitigation Activity**

This project introduces a total of 2MW Solar System on the roofs of two shopping malls, which are operated by a conglomerate in Philippines, using JCM Eco Lease Scheme.

Reduction of greenhouse gas (GHG) emissions is made by partially replacing conventional fossil fuel electricity to renewable energy.



**Expected GHG Emission Reductions**

**1,476 tCO<sub>2</sub>/year**

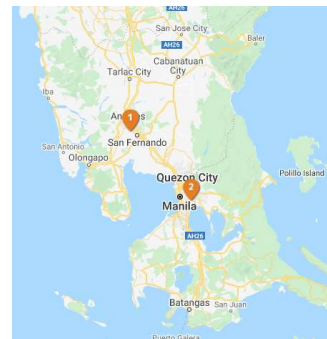
$$= (\text{Reference CO}_2 \text{ emissions}) - (\text{Project CO}_2 \text{ emissions})$$

- Reference CO<sub>2</sub> emissions = (Quantity of the electricity generated by the project) [MWh/year]

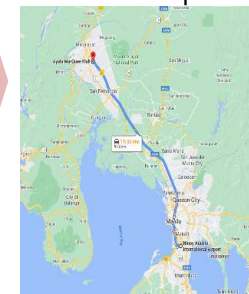
$$\times \text{Emission factor [tCO}_2\text{/MWh]}$$

- Project CO<sub>2</sub> emissions = 0 [tCO<sub>2</sub>/year]

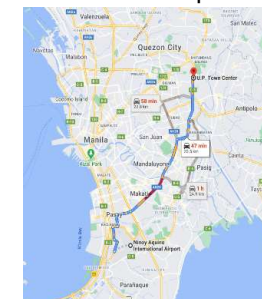
**Sites of Project**



Site 1: 98 km northwest from Ninoy Aquino International Airport



Site 2: 20 km northeast from Ninoy Aquino International Airport

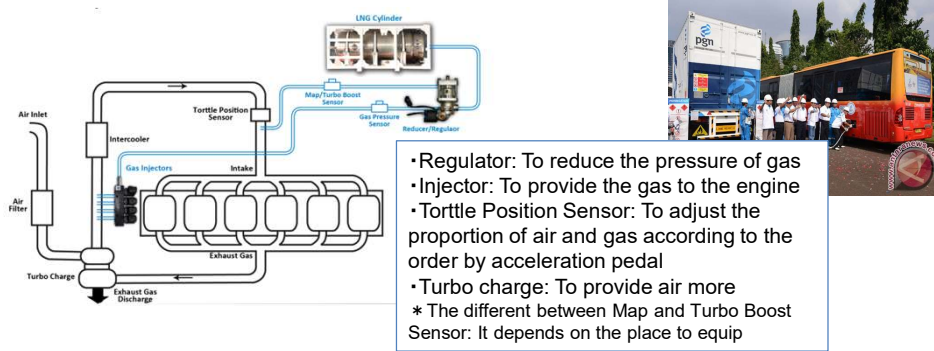


Introduction of CNG-Diesel Hybrid Equipment to Public Bus in Semarang

PP from Japan: Hokusan Co.,Ltd. / PP from Indonesia: BLU UPTD Trans Semarang

Outline of GHG Mitigation Activity

Toyama City has concluded a cooperation agreement between Semarang City to realize low carbon society under inter-city cooperation. Based on the cooperation agreement, this project aims to reduce GHG emissions through fuel switch from diesel to CNG. In the project, 72 diesel buses owned by Trans Semarang, including 25 large-sized buses and 47 mid-sized buses, are retrofitted from diesel engine to hybrid engine with CNG system available. These buses are considered more cost-effective through fuel switching.



The diagram shows the flow of air and gas into an engine. Air enters through an air filter and turbocharger, passes through an intercooler, and then through gas injectors into the intake manifold. Gas from an LNG cylinder passes through a pressure sensor, a regulator, and a reductor/regulator before entering the engine. A throttle position sensor is also connected to the system. Exhaust gas is shown exiting through an exhaust gas discharge pipe.

**Legend:**

- Regulator: To reduce the pressure of gas
- Injector: To provide the gas to the engine
- Throttle Position Sensor: To adjust the proportion of air and gas according to the order by acceleration pedal
- Turbo charge: To provide air more
- \* The different between Map and Turbo Boost Sensor: It depends on the place to equip

Sites of Project



Expected GHG emission reduction

**2,667 tCO<sub>2</sub>/year**

$$\leftarrow \text{Reference GHG emission} - \text{Project GHG emission}$$

$$= \text{Reference fuel consumption} \times \text{Fuel-based emission factor} - \text{Project fuel consumption} \times \text{Fuel-based emission factor}$$

Reference fuel consumption

$$= \text{Diesel fuel consumption based for bus operation} \times \text{emission factor of Diesel fuel}$$

Project fuel consumption

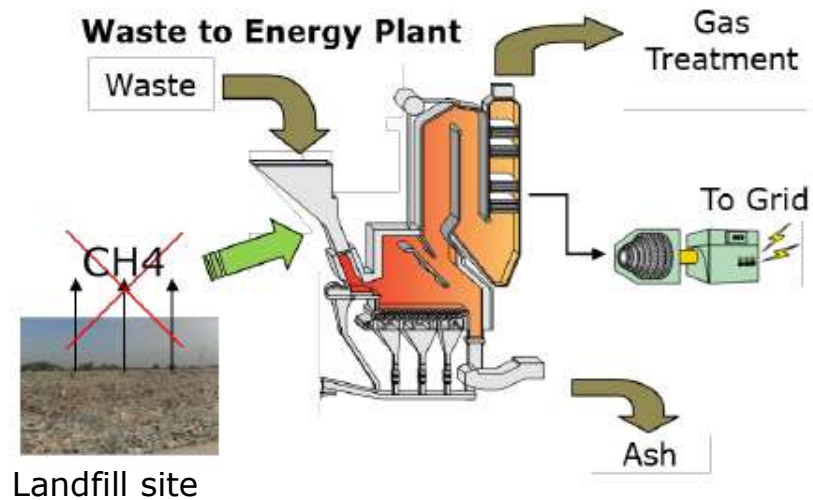
$$= \text{CNG fuel consumption for bus operation} \times \text{emission factor of CNG} + \text{Diesel fuel consumption for bus operation} \times \text{emission factor of Diesel fuel}$$

**Introduction of Waste to Energy Plant in Yangon City**

PP(Japan): JFE Engineering Corporation / PP(Myanmar): Yangon City Development Committee

**Outline of GHG Mitigation Activity**

The objective of this project is to build and operate a waste-to-energy plant that (1) generates electricity, some of which will be supplied to a power company, resulting in reduction of fossil fuel consumption at the power plant, (2) mitigates electricity shortage, (3) reduces CH<sub>4</sub> emissions from landfill disposal, and (4) improvement of waste management in Yangon City. This is a pilot project conducted by Yangon City for promotion of waste-to-energy, with relatively small capacity (60t of waste per day).



**Expected GHG Emission Reductions**

**4,125tCO<sub>2</sub>/year**

\*Average of emission reductions from 2017 to 2030

**Sites of JCM Model Project**



Near Hlawga Lake, 35km north from central area of Yangon City



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- JCM Model Projects in Republic of Palau

## 2. Promotion / “JCM Global Match”

## ■ GEC's Website on JCM

<http://gec.jp/jcm/>

## ■ GEC's JCM Twitter

[https://twitter.com/GEC\\_JCM\\_Info](https://twitter.com/GEC_JCM_Info)

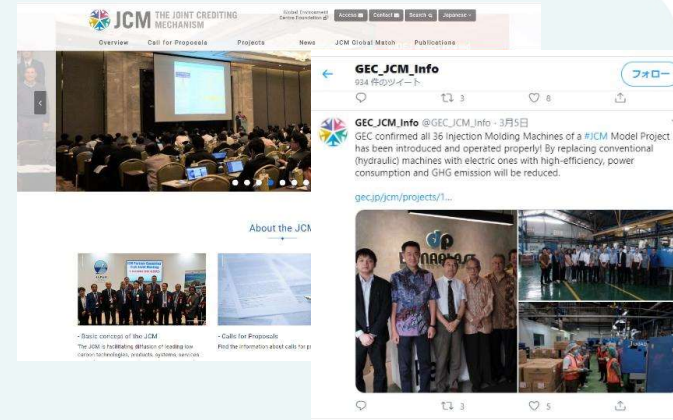
## ■ JCM Booklet

<http://gec.jp/jcm/jp/publications/>

## ■ Business matching site

### "JCM Global Match"

<https://gec.force.com/JCMGlobalMatch/>





**What is the “JCM Global Match”?**

<https://gec.force.com/JCMGlobalMatch/>

A platform to connect the JCM participants for the better and effective project development.



## Features of the “JCM Global Match”

Launched in July 2019

>Many matchings have already been recognized to realize JCM projects.

Reformed on December 2<sup>nd</sup> 2020!

1. Simple registration (only 5 items to start)
2. Search of your possible partners by any key word
3. Useful communication among all participants (Open Discussion, Invitation Salon)
4. Opportunity to promote your company by Profile and Specialties sections
5. 1 to 1 Communication by private chat and Email addresses exchange
6. Reservation of your Scheduled Meetings

\*Google Chrome and Firefox are recommended browsers.

<https://gec.force.com/JCMGlobalMatch/>

The screenshot displays the JCM Global Match website interface. At the top, there is a navigation bar with links for 'What is JCM', 'How to Use', 'Good Practices', 'Open Discussion', 'Invitation Salon', 'Specialty', 'Scheduled Meetings', 'FAQ', and 'Inquiry'. A search bar is located in the top right corner. Below the navigation bar, the main heading reads 'JCM Global Match' with the subtitle 'A match-making platform for climate technology projects'. The interface is divided into several sections: 'Open Discussion' with sub-sections for 'Discussion by Country' and 'Discussion by Technology'; 'Invitation Salon' with a button to 'Create a new Invitation Salon as a host' and a section for '私のグループ' (My Groups) listing 'Solar power technology in Chile' and '太陽光発電' (Solar Power Generation); 'Find your partner by Type and Specialty' with categories for 'Seller', 'Buyer', 'Consultant', and 'Financier'; 'Matching / Scheduled Meetings' with a table for 'MY MATCHING (PROGRESS)'; and 'Official Twitter by GEC' with a tweet from @GEC\_JCM\_Info. A footer section contains the text 'Your Company's Specialties' and a button 'Register My Company's Specialties'.

Matching Name	Status	Name	Own
20201202-20	Matching	Aoyama Nanako	Aoya
20201203-21	Matching	Aoyama Nanako	Aoya

## Access Information

URL:

Search...

Search

Login

<https://gec.force.com/JCMGlobalMatch/>

Or search with "JCM Global Match"!

JCM Global Match

A match-making platform for climate technology projects

Create Your Account

Official Twitter by GEC

For Guests (With no account yet)

You can sign up here. Using this website is free of charge.

[Click here to see How to sign up the website.](#)

Create Your Account

Tweets by @GEC\_JCM\_Info

 GEC\_JCM\_Info  
@GEC\_JCM\_Info

Our business matching website, "JCM Global Match", has been reborn on Dec 2nd in 2020. The user interface has been upgraded, and more helpful functions to support your efficient match making have been added. Check the new website out from the link below; [gec.force.com/JCMGlobalMatch/](https://gec.force.com/JCMGlobalMatch/)

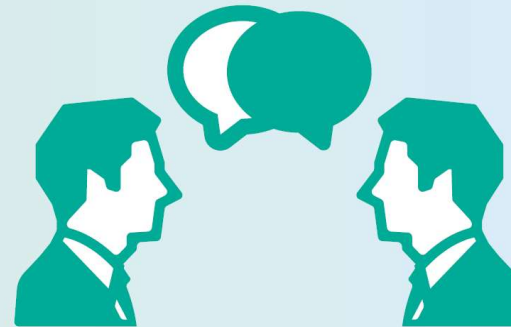
**\*Google Chrome and Firefox are recommended browsers.**

**Please register and find your partner now!**

Contact : [jcm-gm@gec.jp](mailto:jcm-gm@gec.jp)

## 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](mailto: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.

### ■ Contact:

**Satoru Tango, Norio Takeyama**

**Global Environment Centre Foundation (GEC) Tokyo Office**

**E-mail : [jcm-info@gec.jp](mailto:jcm-info@gec.jp)**

※Currently, due to COVID-19, we are partially doing telework, and provide application consultation at web conference. Please send an e-mail to contact us.

*Me Sulang !*  
ありがとうございました。

**Global Environment Centre Foundation(GEC) Tokyo Office**

**3rd Floor, Hongo Ozeki Bidg 3-19-4, Hongo, Bunkyo-ku,  
Tokyo 113-0033, JAPAN**

**Phone : +81-3-6801-8773 / FAX : +81-3-6801-8861**

**E-mail : [jcm-info@gec.jp](mailto:jcm-info@gec.jp)**

**URL : <http://gec.jp/>**





# *Appendix*



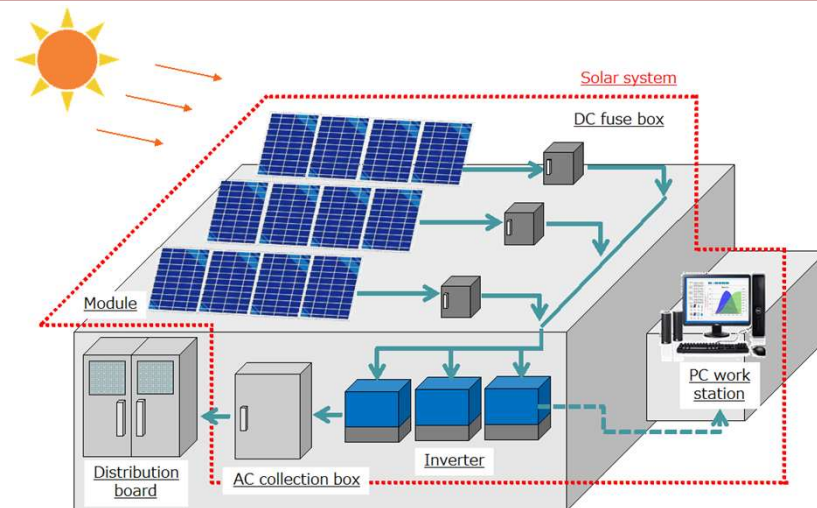
**Palau/ Introduction of 1MW Solar Power System on Supermarket Rooftop**

PP (Japan): Sharp Energy Solutions Corporation, PP (Palau): Surangel & Sons Company

**Outline of GHG Mitigation Activity**

1MW solar power system is installed on the rooftop of a new supermarket to be built in Airai State, Republic of Palau, for self-consumption purposes. This is the first introduction of a mega solar system in Palau.

This project contributes to the achievement of Palau's policy for a renewable energy ratio target of 45% in 2025.



**Expected GHG Emission Reductions**

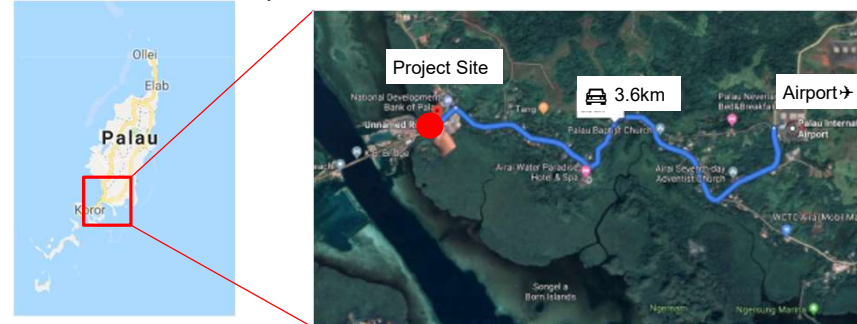
**843 tCO<sub>2</sub>/year**

$$= (\text{Reference CO}_2 \text{ Emissions}) [\text{tCO}_2/\text{year}] - (\text{Project CO}_2 \text{ Emissions}) [\text{tCO}_2/\text{year}]$$

$$= ((\text{Reference Power Consumption}) [\text{MWh}/\text{year}] - 0 [\text{MWh}/\text{year}]) \times \text{Emission Factor} [\text{tCO}_2/\text{MWh}]$$

**Site of Project**

Installation Site : Approx. 4km west of Palau International airport

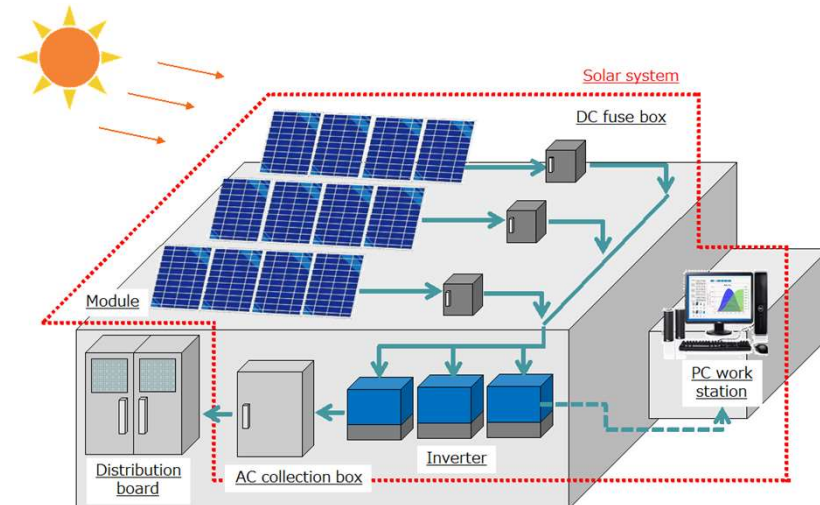


**Introduction of 0.4MW Rooftop Solar Power System in Supermarket**

PP (Japan): Sharp Energy Solutions Corporation PP (Palau): Western Caroline Trading Company, Inc. (WCTC)

**Outline of GHG Mitigation Activity**

Sharp and Western Caroline Trading Company, Inc. (WCTC) introduce a approx. 0.4MW rooftop PV system in Koror, Palau, for the self-consumption. This project contributes to Palau’s renewable energy policies and the increase of renewable energy source in Palau.



**Expected GHG Emission Reductions**

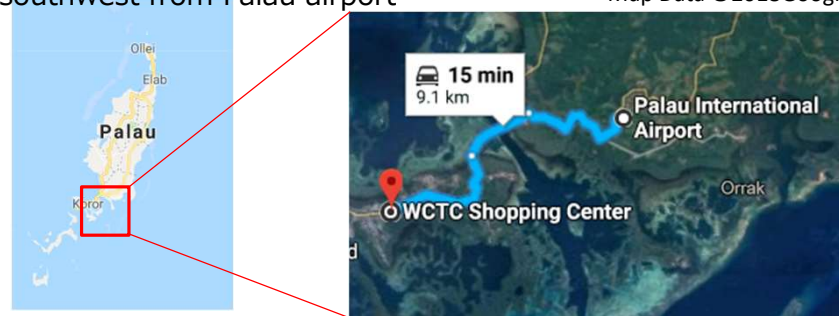
**284 tCO<sub>2</sub>/year**

- = (Reference CO<sub>2</sub> emissions) [tCO<sub>2</sub>/year]
- (Project CO<sub>2</sub> Emission) [tCO<sub>2</sub>/year]
  
- = ((Reference Power consumption) [MWh/year]
- 0 [MWh/year]) × Emission Factor [tCO<sub>2</sub>/MWh]

**Sites of Project**

Installation Site : Supermarket in Koror City, Palau  
5km southwest from Palau airport

Map Data ©2018Google

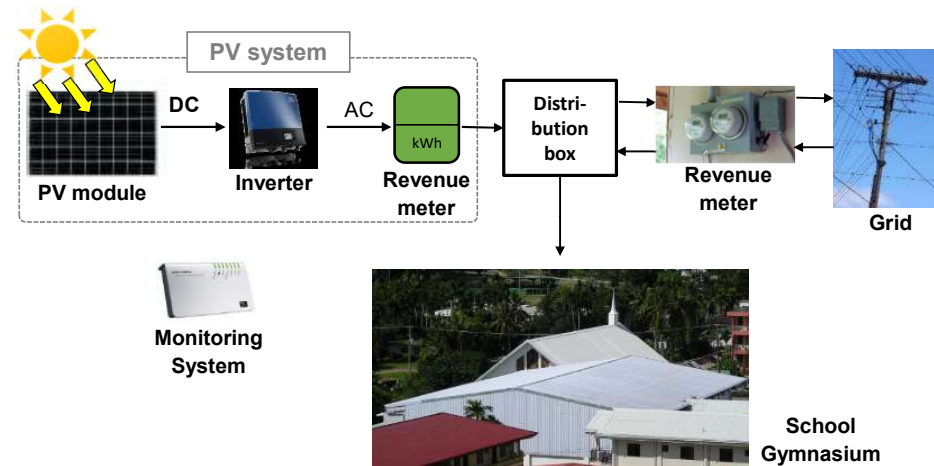


Solar PV System for Schools Project

PP (Japan) :Pacific Consultants Co., Ltd., InterAct Inc.  
 PP(Palau) :Palau Adventist Schools

Overview of GHG emissions reductions project

A grid-connected solar PV system will be installed at two sites. Palau Seventh-Day Adventist Elementary School (Site A) and Palau Mission Academy (Site B) shall have a 51.675kW and 103.350 kW system respectively. The generated power will mainly be self-consumed. On school holidays, the power will be fed into the grid using the net-metering scheme. A remote monitoring system to monitor the performance of the system will also be installed.



Estimated GHG emissions reductions

**111 tCO<sub>2</sub>/year**

CO<sub>2</sub> emission reduction  
 = PV generation (a) × Reference emission factor (b)  
 = 209.36 MWh/year × 0.533 tCO<sub>2</sub>/MWh

Financing Programme Project site



A: Palau Seventh-Day Adventist Elementary School Gymnasium  
 B: Palau Mission Academy Gymnasium

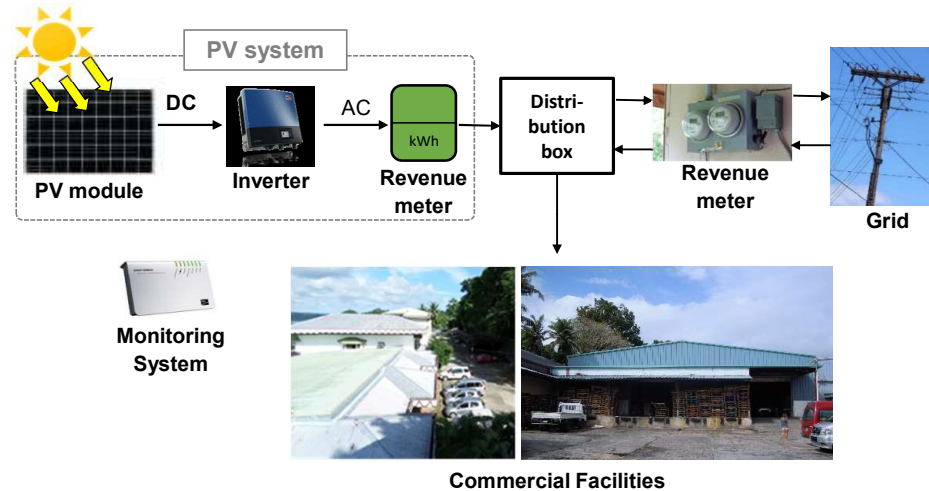
Small-Scale Solar Power Plants for Commercial Facilities Project II

PP (Japan): Pacific Consultants Co., Ltd., / InterAct Inc.

PP (Palau): Western Caroline Trading Company / NECO Yamaha Corporation / Palau Investment and Development Company

Overview of GHG emissions reductions project

A grid-connected solar PV system will be installed at three sites. Western Caroline Trading Company, NECO Yamaha Corporation and Palau Investment and Development Company shall install a 263.64 kW, 80.03 kW and 101.92 kW system respectively. The generated power will normally be self-consumed. On non-business days, the power will be fed into the grid using the net-metering scheme. A remote monitoring system to monitor the performance of the solar PV system will also be installed.



Estimated GHG emissions reductions

**320 tCO<sub>2</sub>/year**

CO<sub>2</sub> emission reduction  
 = PV generation (a) × Reference emission factor (b)  
 = 601.77 MWh/year × 0.533 tCO<sub>2</sub>/MWh

Financing Programme Project site





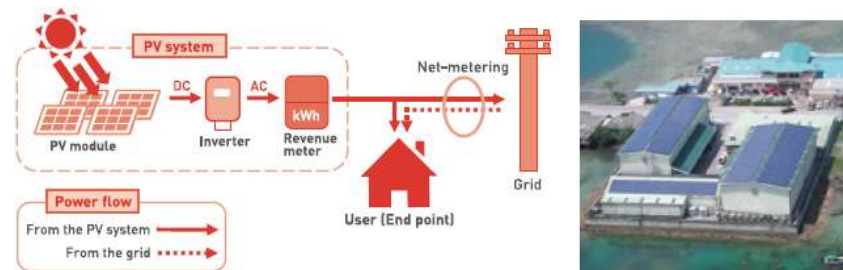
**Small Scale Solar Power Plants for Commercial Facilities in Island States**

PP (Japan):Pacific Consultants Co., Ltd., InterAct Inc.

PP(Palau) :Western Caroline Trading Company / Surangel and Sons Company / Melekau Environmental Consulting.

**Outline of GHG Mitigation Activity**

A grid-connected photovoltaic (PV) system is installed on the rooftops of commercial facilities (220.5kW on a warehouse in Subproject 1 and 150kW on a supercenter building in Subproject 2). This project uses high quality PV modules of a Japanese manufacturer and general-purpose inverters with easy maintenance suitable for small-scale applications. The power generated by the PV system is normally consumed in-house. When there is a surplus, it is supplied to grid. Taking into account the recent large typhoons, PV modules with strong wind resistance are introduced.



**Expected GHG Reductions**

259 tCO<sub>2</sub>/year

**Sites of JCM Model Project**



Koror State, Palau



## **Impact on Projects**

- **Government services stall, licenses and permits delay**
- **Design work delay / supply delay due to suspension of factory operation**
- **Installation work delay due to difficulty in securing labor for construction / engineers unable to enter the project site.**
- **Deterioration of cash flow of the project partner / reduction of investment budget, difficulty in raising funds**
- **Suspension of banking operations (delay on loan contracts, remittances)**
- **Reassessment of the project feasibility / change or reduction of project plan (especially in tourism and transportation)**


## **Impact on Operation for JCM Model Projects**

- **Restricted face to face meeting:**
  - **Evaluation interviews**
  - **Meeting with participants**
  - **Consultation for prospect entities**

Support by MOEJ/GEC



Foresee and make allowance with well contemplated schedule

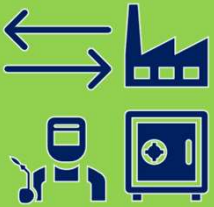


Online Meeting with participants  
Consultation for prospect entities




Modify Project plan flexibly

- Design
- Manufacturer
- Contractor
- Financer, etc.




Online Inspection

- remote camera
- Photos
- Video
- online discussion



Promotion via Webinar  
Online Seminar  
Symposium



Break stagnated Permission  
to promote Projects

