



# **Webinar on the Joint Crediting Mechanism (JCM) Implementation in Republic of Maldives**

**- Utilizing the JCM during the COVID-19 Period -**

## **JCM Model Project Formation Study in Republic of Maldives**

**1<sup>st</sup> March 2021**

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

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# 1. Company profile

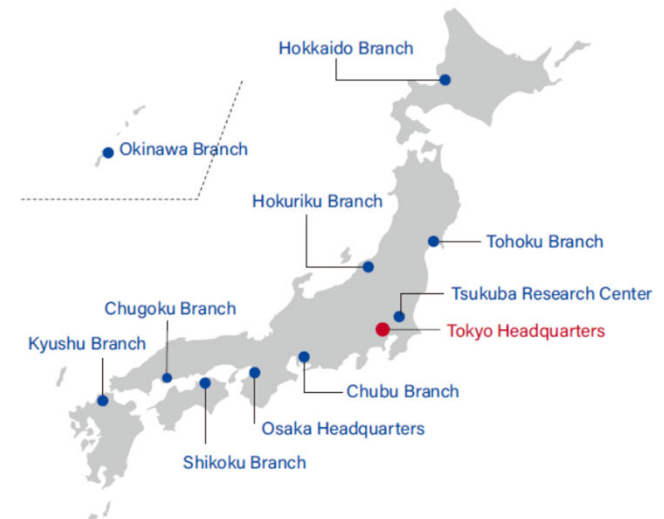
## Who we are?

### PACIFIC CONSULTANTS CO., LTD.

- ✓ September 4th, 1951 established
- ✓ 2,079 employees (as of 2020.10.01)
- ✓ Civil engineering consultants



#### Domestic and Overseas Business Locations



# 1. Company profile

## Business field



**Environmental Management**  
Riverine and Coastal Management,  
Dams, Ports, Natural Disasters, etc.



**Transportation Infrastructure**  
Roadways, Railways, Airports,  
Tunnels, Bridges, Structures, etc.



**Mechanical and Electrical Design**  
MEP Planning and Design for Large-  
Scale Infrastructure and facilities, etc.



**Public Sector Management**  
PPP, PFI, Bidding Support, Public  
Asset Management, etc.



**Information System**  
GIS and Remote-Sensing, ITS,  
e-Government, etc.



**Urban Development**  
Transportation Planning, Urban  
Planning and Design, etc.



**Environment and Energy**  
Water and Sewage, Renewable  
Energy, Waste Disposal, etc.



**Geotechnical**  
Slope Stabilization, Soil  
Liquefaction, Soil Analysis, etc.



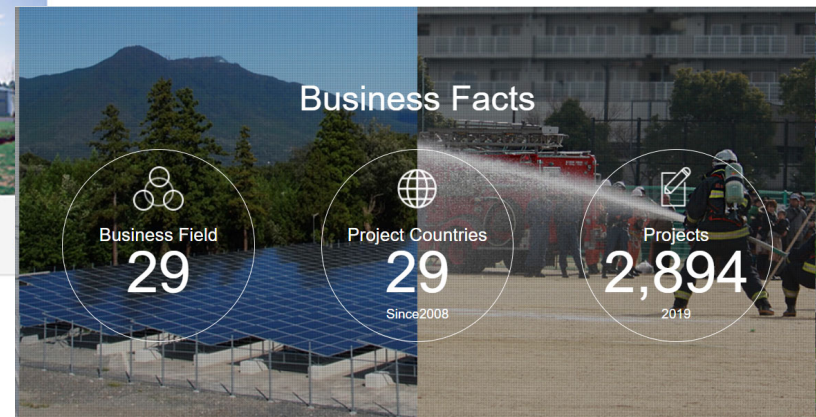
**Overseas Projects**  
ODA, Foreign Government,  
Private-Sector Clients, etc.



**New Project Development**  
Smart Community, Wellness,  
Regional Energy Management, etc.



**Research and Development**





# 1. Company profile

## Experiences on JCM Financing Programme



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

**Solar Power on Rooftop of School Building Project (Maldives)**



**Introduction of Solar PV System at Salt Factory (Kenya)**

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

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### Our Mission

Pacific Consultants Co., Ltd. has been commissioned by **Ministry of Environment Japan** :

- To identify possible project candidates,
- To assist the project candidates to develop proposal for JCM Financing Programme
- Targeted countries: Maldives, Palau, Kenya, Ethiopia and Saudi Arabia. Also, Mexico, Chile, and Costa Rica in Latin America.

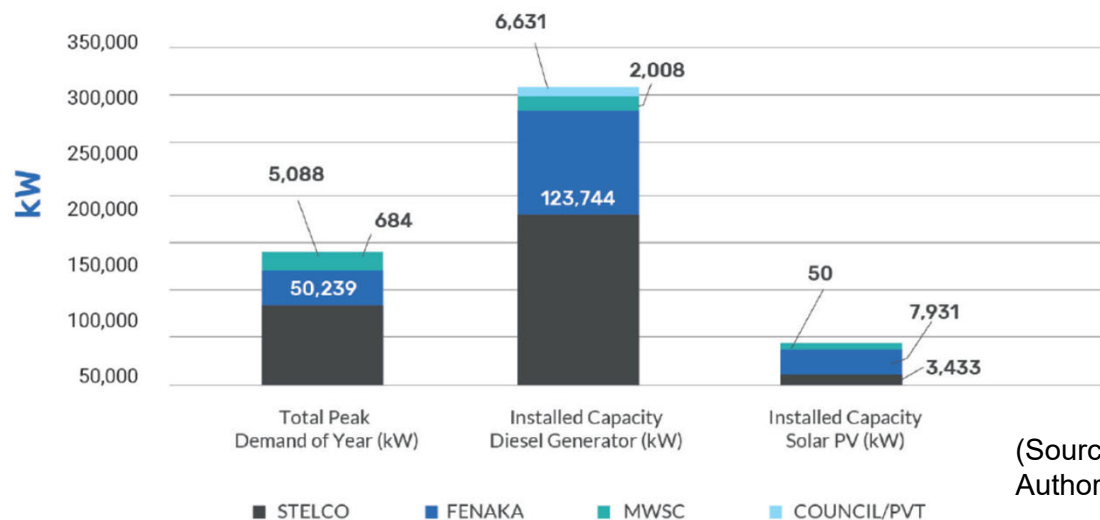
## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### Current status of energy/electricity in Maldives

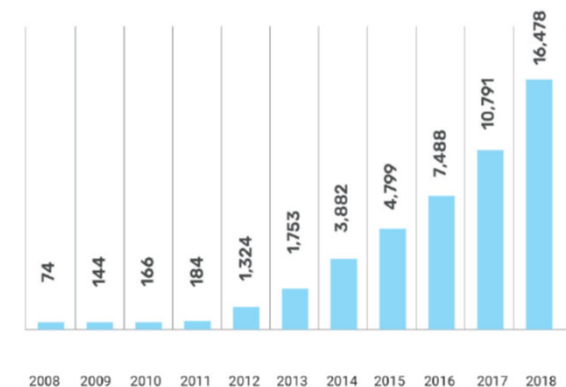
#### <Current situation>

- Energy imports to Maldives totals to 643,900 Tonnes/yr (2018)
- **Diesel fuel contributes to 81% of total fuel imports.**
- Total diesel generation installed: 530MW (2018)
- Diesel fuel consumption for Power generation (**38% of imported diesel, 213,612 kL**)
- Electricity Generation for the greater Malé region: 58%
- **Renewable Energy systems installed: 16.5MW (by 2018)**

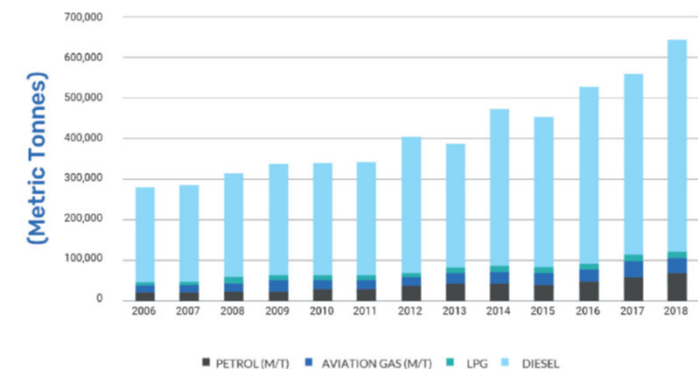
#### Inhabited Islands: Installed Capacities And Peak Demand



#### Solar PV Installed Capacity (kW)



#### Fuel Import



(Source: Island electricity Data book 2019, Maldives Energy Authority)

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

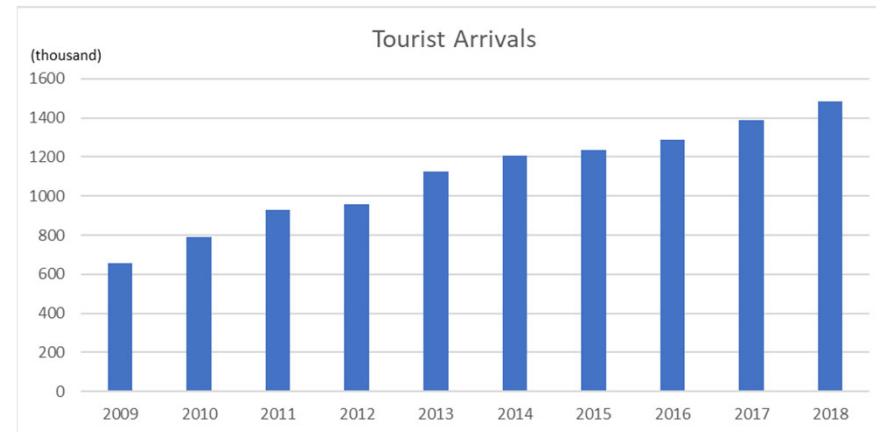
### Current status of Industry, transportation in Maldives

#### <Main industries>

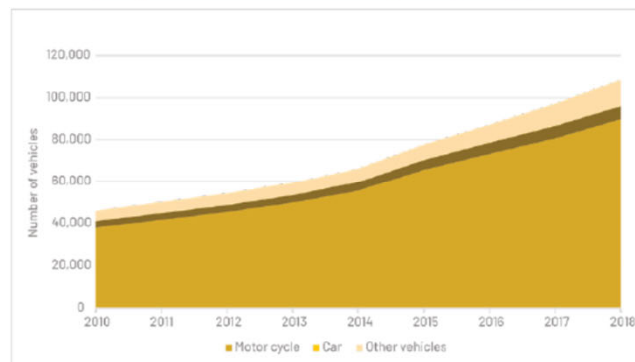
- Tourism
- Fisheries

#### <Transpiration system>

- Boat, bus, taxi, motorbike
- Registered vehicles: 108,532, Registered vessels: 14,003 (2018)



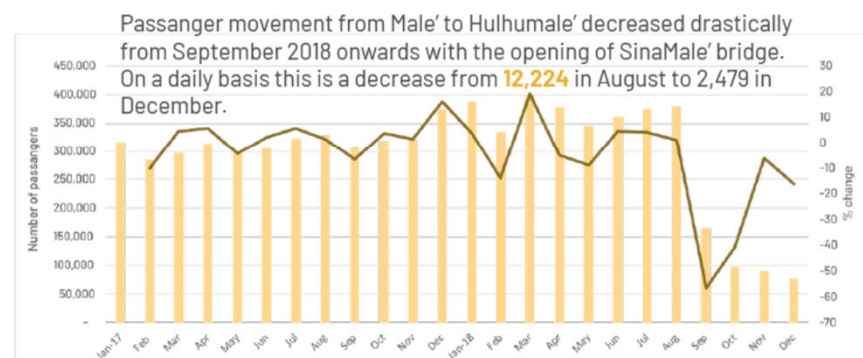
Registered vehicles by major types, 2010 to 2018



Registered motor vehicles have been increasing rapidly and more than doubled in numbers from **35,794** in 2009 to **89,897** by 2018.

Motorcycles account for **83%** of all registered vehicles in 2018.

Monthly passenger movement by ferry from Male' to Hulhumale' and percentage change, 2017 to 2018



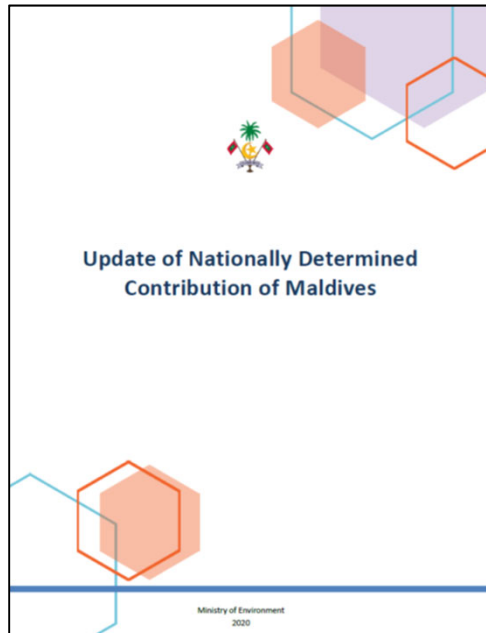
Passenger movement from Male' to Hulhumale' decreased drastically from September 2018 onwards with the opening of Sina Male' bridge. On a daily basis this is a decrease from **12,224** in August to **2,479** in December.

(source: Statistical Pocketbook Maldives 2019, National Bureau of Maldives)



## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### NDC of Maldives



#### <Goals setting in the NDC>

- **26% reduction of emissions in 2030** (under a BAU) in a conditional manner, in the context of sustainable development, supported and enabled by availability of financial resources, technology transfer and capacity building.

#### <Strategies, plans and actions>

- **Increase of electricity production by renewable energy (RE) with storage and grid stabilization**. Efforts will be made to increase the installed the **RE share to 15% of the energy mix**, which includes the public and private sector
- Increase supply and demand side efficiency
- Waste to energy
- **Establishment of vehicle/vessels emissions standard and establishment of efficient transport management system** and promotion of hybrid-vehicles.
- Use of Liquefied Natural Gas (LNG) for electricity generation within greater Malé region.

(Source: Update of Nationally Determined Contribution of Maldives, Ministry of Environment, 2020)

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

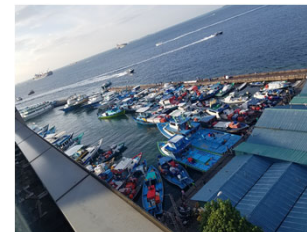
### Principles of the study and results

To support achievement of the NDC goals of Maldives

- Enhance renewable energy with battery introduction
- Expand renewable energy utilization into other sector such as transportation

#### Focused sectors in the study

- Renewable Energy
  - Solar PV
  - Wind power
- Energy Efficiency improvement
  - Replacement transformers of the grid, refrigerators
- Transport
  - Electric vehicle/ bus
  - Electric boats



#### Results of the study on FY 2020

Solar PV installation on the roof top of the buildings /factories

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### Challenges for JCM Model Project formation

#### Challenge 1: Project scale and amount of financial support

- Although the needs for renewable energy from private companies are high, project scale is often **small, like several hundred kW**, which would be difficult to apply the JCM Financing Programme.
- Because, in practical, **amount of financial support will not be much** for a representative Japanese company to manage a JCM project for a long period of time. It means that amount of financial support is **not so attractive for partner participants**, too.

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### Challenges for JCM Model Project formation

#### Challenge 2: Difficulties of transportation project

- Since the main means of transportation for people in Maldives are private vehicles. It is desirable to form a project that can reduce traffic congestion and CO2 from them.
- However, it is difficult to form a JCM Model Project in transportation sector, because;
  - ✓ **alternative low-carbon mobility**, including low-carbon private and public mobility and infrastructure and maintenance chain, is difficult to be prepared because **those project needs large amount of investment cost**
  - ✓ **MRV for private mobility is too complex to implement**
  - ✓ **Amount of CO2 reductions** will not be so much if the number of the target cars **are not so huge**.

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### Challenges for JCM Model Project formation

#### Challenge 3: Project finance

- **Interest rates** of commercial banks for raising funds for renewable/energy saving project **are high**
- It is difficult for SMEs to **prepare initial investment costs** for implementing such projects



## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

### Possible solutions

#### **Solution 1: Issues on project scale and amount of financial support**

- **Bundling several small scale projects** owned by one project owner is thought as an option.
- Find out certain scale projects such as IPP
- Utilize **JCM Eco-lease scheme** (if the leasing company can cover the area)
- **Additional financial support** according to **contribution for sustainable development**
- **Fix the financial support rate** for projects in islands

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

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### Possible solutions

#### **Solution 2: Issues on transportation project**

- Develop **simple MRV methodology** for private mobility
- **Additional financial support** according to contribution for sustainable development
- **Fix the financial support rate** for projects for transportation project in islands

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

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### Possible solutions

#### Solution 3: Issues on project finance

- Utilizing Eco-lease
- Allow a certain amount of financial support **payment in advance** early after the adoption of the JCM Model project
- Allow the project owner to consider such advanced payment **as a finance source**
- Find out certain scale projects, such as IPP, **which Japanese entity have interested and will invest**

## 2. Outline of the JCM Model Project Formation Study in Republic of Maldives

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### Possible solutions

#### **Solution 4: To cover wider range of sectors**

- Strengthening cooperation with JICA international cooperation project, other donor/funds
- Consult with companies aiming to introduce new technologies such as hydrogen energy utilization

### 3. Request for your project information

#### JCM Financing Programme

How can I use this grant?

Budget for projects starting from FY 2020 is **9 billion JPY** (approx. **USD 84 million**) in total by FY 2022 (1USD=110JPY)

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 CO<sub>2</sub> 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.

#### Tips!

- To apply and utilize JCM Model project well, understanding this program is very important
- Pacific Consultants Co.,Ltd. can support the project owner to understand the JCM Financing Programme



### 3. Request for your project information

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Consulting service of Pacific Consultants Co.,Ltd.

**If you will face to any questions, please contact us.**

**Pacific Consultants Co.,Ltd. can help you to understand JCM Financing Programme and assist formulating a new project!**

- **Any questions on**

JCM and JCM Financing Programme

- **Interested in introducing the following:**

- ✓ **Renewable energy:**

- Solar, Wind power etc.

- Grid connected or self-consumption

- ✓ **Energy saving:**

- Original power sourced from  
national grid or generated by the project owner

- ✓ **Transportation project**

# Contact Information

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