

JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Small Scale Solar Power Plants for Commercial Facilities in Island States II
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A.2. General description of project and applied technologies and/or measures

<p>The proposed JCM project aims to reduce CO₂ emissions by introducing a total of 445.59kW grid-connected solar photovoltaic (PV) systems at three sites: 263.64kW on top of the warehouse and staff quarter of Western Caroline Trading Company in Malakal Island (hereinafter "Subproject 1"), 80.03kW on top of West Plaza Desekel building in Koror Island (hereinafter " Subproject 2"), and 101.92kW on top of the buildings of Palau Investment and Development Company in Koror Island (hereinafter " Subproject 3"). The solar PV systems replace the grid electricity derived from diesel. The power generated by the solar PV system is basically self-consumed. When there is surplus power, it is exported to the grid utilizing the net-metering scheme*. A remote monitoring system to monitor the performance of the system is also installed.</p>
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<p>* This scheme allows end users to send surplus electricity generated by renewable energy to the grid. The electricity sent to the grid offsets the electricity consumed from the grid.</p>

A.3. Location of project, including coordinates

Country	Republic of Palau
Region/State/Province etc.:	Subproject 1: Koror State Subproject 2: Koror State Subproject 3: Koror State
City/Town/Community etc:	Subproject 1: Malakal Hamlet Subproject 2: Ngerbeched Hamlet Subproject 3: Ngerchemai Hamlet
Latitude, longitude	Subproject 1: N 7°20'6" and E 134°27'19" Subproject 2: N 7°20'28" and E 134°28'20" Subproject 3: N 7°20'45" and E 134°29'28"

A.4. Name of project participants

The Republic of Palau	Western Caroline Trading Company (Subproject 1, 2) Palau Investment and Development Company (Subproject 3)
Japan	Pacific Consultants Co., Ltd. (PCKK)

A.5. Duration

Starting date of project operation	Subproject 1: 21/01/2016
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	Subproject 2: 26/01/2016 Subproject 3: 06/02/2016
Expected operational lifetime of project	Subproject 1: 20 years Subproject 2: 20 years Subproject 3: 20 years

A.6. Contribution from developed countries

The proposed project was partially supported by the Ministry of the Environment, Japan through the financing programme for JCM model projects which provided financial supports up to 50% of initial investment for the projects in order to acquire JCM credits.

As for technology transfer, capacity building on operation and monitoring has been provided by PCKK in conjunction with a local engineering company.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	PW-AM001
Version number	Ver. 1.0

B.2. Explanation of how the project meets eligibility criteria of the approved methodology

Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project installs solar PV system(s).	A solar PV system is installed at each site. The solar PV module employed is Kyocera KU260-6MCA or KU265-6MCA. The inverter employed is SMA Sunny Boy 10000TL-US or Sunny Boy 5000TL-US.
Criterion 2	The solar PV system is connected to the internal power grid of the project site and/or to the grid for displacing grid electricity and/or captive electricity at the project site.	The solar PV system of each site is connected to the internal power grid of the project site and to the grid. The system displaces grid electricity.
Criterion 3	The PV modules have obtained a certification of design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	The installed PV module (Kyocera KU260-6MCA and KU265-6MCA) has obtained a certification of design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2).
Criterion 4	The equipment to monitor output power of the solar PV system and irradiance is installed at the project site.	The Sunny SensorBoxes are installed at the project sites to measure irradiance. An electricity meter is installed at each site to measure output power of the solar PV

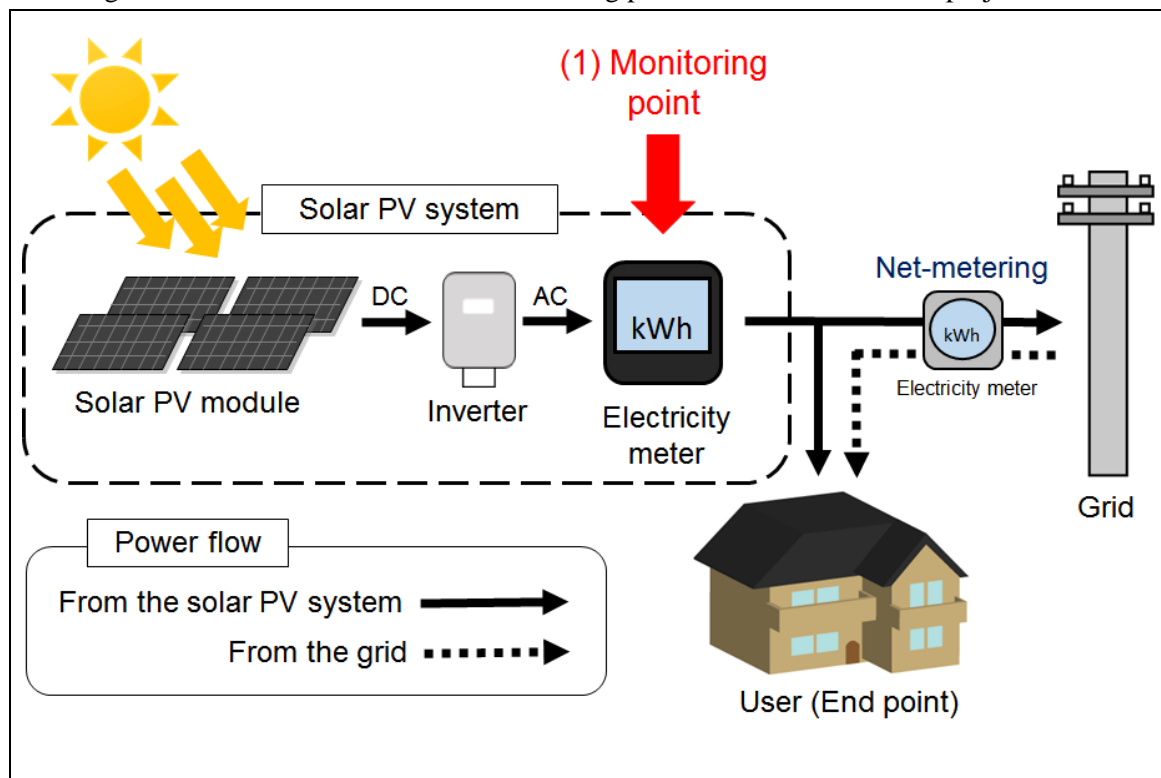
	system.
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C. Calculation of emission reductions

C.1. All emission sources and their associated greenhouse gases relevant to the JCM project

Reference emissions	
Emission sources	GHG type
Consumption of grid electricity	CO ₂
Project emissions	
Emission sources	GHG type
Generation of electricity from solar PV system(s)	N/A

C.2. Figure of all emission sources and monitoring points relevant to the JCM project



C.3. Estimated emissions reductions in each year

Year	Estimated Reference Emissions (tCO _{2e})	Estimated Project Emissions (tCO _{2e})	Estimated Emission Reductions (tCO _{2e})
2016	299.16	0	299.16
2017	320.74	0	320.74
2018	320.74	0	320.74

2019	320.74	0	320.74
2020	320.74	0	320.74
Total (tCO _{2e})	1,582.12	0	1,582.12

D. Environmental impact assessment

Legal requirement of environmental impact assessment for the proposed project	NO
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E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

The main stakeholders of the project are employees of the project participants. In order to collect comments from these stakeholders, the project participants requested face-to-face interviews.

Date and time	Venue	Participants
15 September 2015 10:00-11:00	Meeting room of Western Caroline Trading Company	Project manager, mechanic and other employees of Western Caroline Trading Company
15 September 2015 13:30-14:30	Office room of Palau Investment and Development Company	Project manager, mechanic and other employees of Palau Investment and Development Company

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Employees of WCTC	What is the procedure to prepare the Modalities of Communication?	PCKK explained that only signing by the project manager and the alternate is required. The questioner was eventually convinced.
Employees of PIDC	Why does project participants have to report the meter reading on electricity production to PCKK once a month?	PCKK explained that the reading will be used when the project participants claim the CO ₂ credit. The questioner was eventually convinced.

Employee of PIDC	Clarify the purpose of two kind of electricity meter.	PCKK explained that the meter set up between the inverter and distribution panel is for carbon offset. And the other meter, provided by utility, installed between distribution panel and the grid is for net-metering. The questioner was eventually convinced.
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F. References

N/A

Reference lists to support descriptions in the PDD, if any.

Annex

N/A

Revision history of PDD

Version	Date	Contents revised
01.0	08/02/2016	First edition
02.0	07/03/2016	Second edition
03.0	22/03/2016	Third edition