JCM Proposed Methodology Form

Cover sheet of the Proposed Methodology Form	
Form for submitting the proposed methodology	

Host Country	The Republic of Palau
Name of the methodology proponents submitting this form	Inter Action Corporation
Sectoral scope(s) to which the Proposed Methodology applies	1. Energy industries (renewable - / non-renewable sources)
Title of the proposed methodology, and version number	Title: Solar power generation system in Palau Version number: 03
List of documents to be attached to this form (please check):	☐The attached draft JCM-PDD: ☐Additional information
Date of completion	09/01/2015

History of the proposed methodology

Version	Date	Contents revised
01.0	09/10/2014	First edition
02.0	09/01/2015	Second edition
03.0	02/03/2015	Third edition

1. Title of the methodology

Solar power generation system in the Republic of Palau

2. Terms and definitions

Terms	Definitions
Electricity grid	Electricity grid is an electricity supply system to which many consumers and many power plants are connected.
Solar power system	Solar power system is electricity supply system powered by solar energy

3. Summary of the methodology

Items	Summary
GHG emission reduction measures	Electricity generated by solar power system will displace the grid electricity that is generated by diesel.
Calculation of reference emissions	Reference emissions are calculated on the basis of electricity consumption from solar power system and discounting it by correction factor for conservativeness.
Calculation of project emissions	Project emissions are not considered in this methodology.
Monitoring parameters	Electricity consumed from the solar power system is monitored.

4. Eligibility criteria

This methodology is applicable to projects that satisfy all of the following criteria.

Criterion 1	The project is the installation of a solar power system in the Republic of Palau.
Criterion 2	The place of installation of the solar power system is in electrified area which is supplied by Palau Public Utilities Corporation (PPUC).
Criterion 3	The project must install electricity meter in order to measure the amount of electricity consumed by the solar power system.

Criterion 4	Photovoltaic modules is tested and certified by IEC design qualification and safety qualification.
Criterion 5	Module conversion efficiency is 15% or more.
Criterion 6	Power temperature coefficient (NOCT) of photovoltaic module is -0.45% or more.

5. Emission Sources and GHG types

Reference emissions	
Emission sources	GHG types
CO2 emissions from electricity generation in fossil fuel fired power plants	CO2
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
Project emissions	
Emission sources	GHG types
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

6. Establishment and calculation of reference emissions

F.1. Establishment of reference emissions

Reference emissions are calculated on the basis of the emissions from electricity supplied by PPUC which is displaced by the project and the correction factor for conservativeness (20%) which assumes that the renewable policy target, "20% of electricity will be provided from renewable energies in 2020", is achieved.

Since BaU scenario is considered to continue the current situation, the reference emissions with the correction factor should be below the BaU emissions.

F.2. Calculation of reference emissions

$$RE_y = EG_{PJ,y} \times EF_{CO2,def,y} \times (1 - CF)$$

RE_y	Reference emissions during the period of year y (tCO2e/y)
$EG_{PJ,y}$	Amount of net electricity consumed as a result of the implementation of the project activity during the period of year y (MWh/y)
$EF_{CO2,def,y}$	Default emission factor of the electricity displaced by the project activity (tCO2e/MWh)
CF	Correction factor for conservativeness (20%)

$$EF_{CO2,def,y} = SC_d \times NCV_d \times DCC_d \times \frac{44}{12}$$

$EF_{CO2,def,y}$	Default emission factor of the electricity displaced by the project activity (tCO2/MWh)
SC_d	Specific consumption of diesel for grid electricity (tCO2/MWh)
NCV_d	Net calorific value of diesel (GJ/t)
DCC_d	Default carbon content of diesel (t/GJ)

In case monitoring data is not available for some reason, it may be substituted by any of the following measures below. ① to ③ is order of priority to be applied.

① If any evidence that stipulates an amount of electricity sales such as invoice and/or receipt from PPUC is available;
   - It can be substituted to the same period by month as the data is not available.
② If monitoring data of the latest three years of the same period as unavailable data is available ;
   - It can be substituted to the same period as the data is not available by multiplying average

data of the latest three years and 0.7.

③ If monitoring data of the last six month of the period that the data is not available;

- It can be substituted to the value by multiplying average data of the last six month of the period that the data is not available and 0.6.

In case the solar system did not work for any reason such as out of order, it shall not be applied. Project participant must prove that the solar system was working during the period with evidence such as work record, etc. It shall be stipulated to monitoring data sheet that the date is substituted.

7.   Calculation of project emissions

$PE_y = 0$

8.   Calculation of emissions reductions

$ER_y = RE_y - PE_y$

ER_y	GHG emission reductions during the year y (tCO2e/y)
RE_y	Reference emissions during the year y (tCO2e/y)
PE_y	Project emissions during the year y (tCO2e/y)

9.   Data and parameters fixed *ex ante*

The source of each data and parameter fixed *ex ante* is listed as below.

Parameter	Description of data	Source
$EF_{CO2,def,y}$	Default emission factor of the electricity displaced by the project activity (tCO2e/MWh)	Data from PPUC and IPCC guideline 2006
CF	Correction factor for conservativeness	Palau National Energy Policy 2010