

JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Introduction of 4 MW Rooftop Solar Power System in Tire Factory

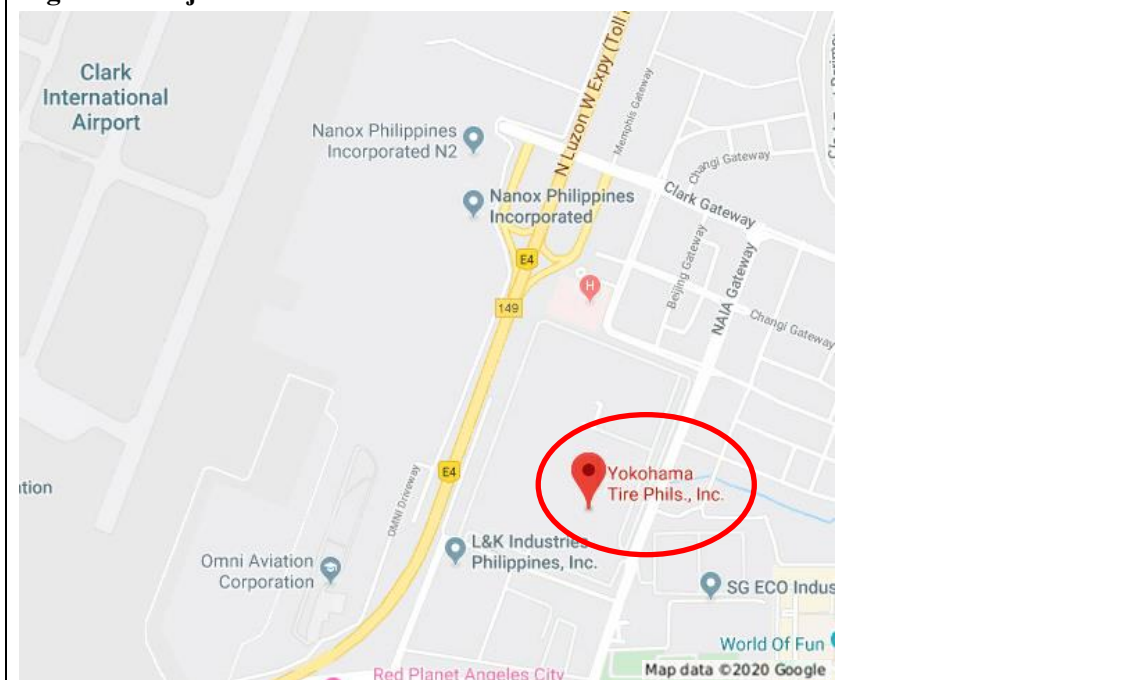
A.2. General description of project and applied technologies and/or measures

The proposed project aims to contribute to Philippines' sustainable development through the use of renewable energy and reduction in greenhouse gases (GHG) by introduction of rooftop solar power system to tire factory of Yokohama Tire Philippines Inc. (YTPI) located in Mabalacat City, Pampanga, Philippines. (Figure 1 below shows the project location).

The electricity produced by the solar PV facility will replace part of the electricity consumption from the grid and will be fully utilized for own consumption of YTPI facility within the project site.

The expected emission reductions that would be achieved by the proposed project is 24,949 tCO₂ until end of June 2028. The actual emission reductions may vary depending on the actual operation of the power plant and the sun radiation in the area throughout the year.

Figure 1: Project locations



A.3. Location of project, including coordinates

Country	The Republic of the Philippines
Region/State/Province etc.:	Pampanga
City/Town/Community etc:	Mabaralat City, Clark Free Port Zone
Latitude, longitude	Latitude: N 15° 10' 20.10" Longitude: E 120° 34' 18.68"

A.4. Name of project participants

The Republic of the Philippines	Yokohama Tire Philippines Inc.
Japan	Sharp Energy Solutions Corporation

A.5. Duration

Starting date of project operation	01/07/2019
Expected operational lifetime of project	9 years

A.6. Contribution from Japan

The proposed project was partially supported by the Ministry of the Environment, Japan (MOEJ) through the Financing Programme for JCM Model projects, which provided financial support of less than half of the initial investment for the projects in order to acquire JCM credits. Further, implementation of the proposed project promotes technology transfer of low carbon power generation technologies within the Philippines. Through the MOEJ program, know-hows on operation and monitoring of solar power generation are transferred to the project sites.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	JCM_PH_AM002
Version number	Version01.0

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).	The proposed project installs a new solar PV system.

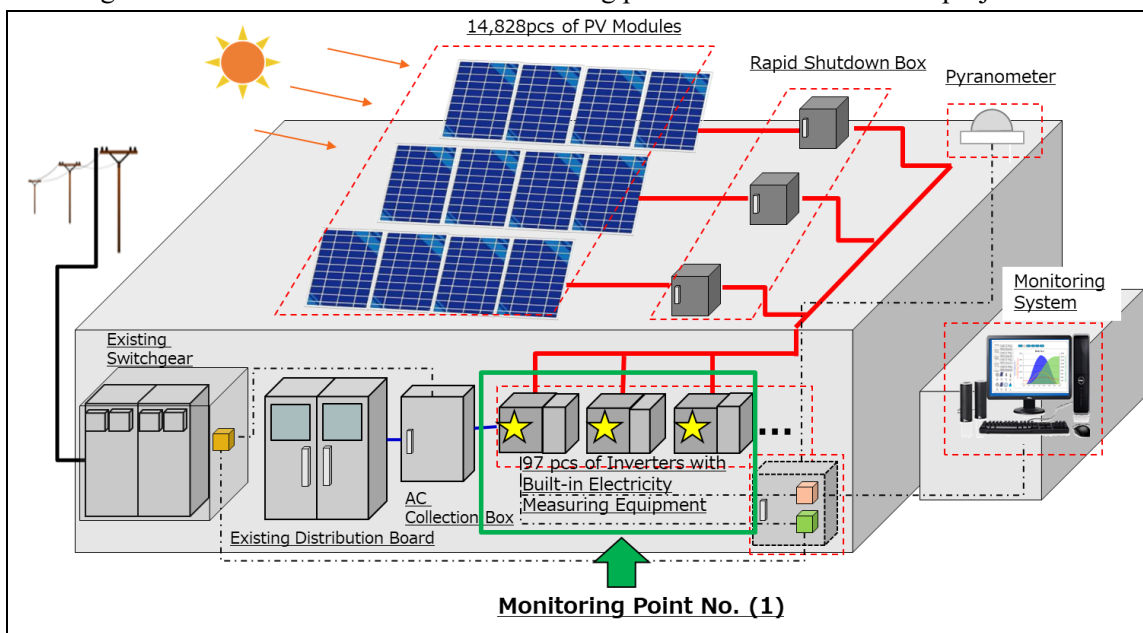
Criterion 2	The PV modules are certified for design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	The PV modules installed in the proposed project are certified for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and 61730-2).
Criterion 3	The equipment used for monitoring output power of the solar PV system(s) and irradiance is installed at the project site	The equipment to monitor output power of the solar PV system(s) and irradiance is installed at the proposed project site.

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 and/or captive electricity	CO ₂
Project emissions	
Emission sources	GHG type
Generation of electricity from the 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 ₂ e)	Estimated Project Emissions (tCO ₂ e)	Estimated Emission Reductions (tCO ₂ e)
2019 (6 months)	1,386.0	0	1,386
2020	2,772.1	0	2,772
2021	2,772.1	0	2,772
2022	2,772.1	0	2,772
2023	2,772.1	0	2,772
2024	2,772.1	0	2,772
2025	2,772.1	0	2,772
2026	2,772.1	0	2,772
2027	2,772.1	0	2,772
2028 (6 months)	1,386.0	0	1,386
Total (tCO ₂ e)			24,948

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

As part of JCM process, the project participants held a local stakeholder consultation meeting in order to take due steps to engage stakeholders and solicit comments for the proposed project. Details of the local stakeholder consultation meeting is summarized as follows:

Date and Time: Friday, November 8, 2019, 13:00-14:25

Venue: Yokohama Tire Philippines Inc.

The following public and private entities have been identified as stakeholders and invitations were provided through letter or e-mail followed up by telephone calls.

1	Department of Environment and Natural Resources (DENR) (JCM Secretariat)
2	Clark Development Corporation (CDC)
3	Clark Electric Distribution Corporation (CEDC)
4	Clark Investors and Locators Association (CILA)
5	Sharp Energy Solutions Corporation
6	Yokohama Tire Philippines, Inc. (YTPI)

The total of 14 stakeholders from the invited public and private entities attended the meeting with the following agenda:

- Opening Remarks
- Overview of JCM and Financing Programme
- Background of Introduction of Solar Power System
- Overview of the Project and Introduced Technology
- Question and Answer Session
- Closing Remarks

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Yokohama Tire Philippines, Inc. (YTPI)	Why is Saudi Arabia included in the 17 countries for JCM subsidy program?	Basically, so called developing countries are partner countries for JCM. Saudi Arabia is also a developing country and became a JCM partner country as a result of bilateral discussion with Japan. (No action is needed.)
Clark Development Corporation (CDC)	What would be maintenance work for the roof after rooftop solar system is installed?	In the event of maintenance, partial solar PV array may be required to be removed and reinstalled. However, rooftop solar system will reduce the direct hit of sunlight on the roof and result in slowing the deterioration of the roof. (No action is needed.)
Clark Electric Distribution	What is the frequency of solar panel maintenance?	First, breakdown of solar panel does not happen so often. Standard maintenance

Corporation (CEDC)		<p>menu has annual inspection to check physical breakdown or loose of clamp of module. With regards to electrical failure, failed module will be detected by checking the difference in voltage and ampere among solar PV strings. PV module cleanings may be planned one to four times in a dry season, but it depends on the surrounding environment of the installed location.</p> <p>(No action is needed.)</p>
Clark Electric Distribution Corporation (CEDC)	What are the warranty conditions of the PV module?	<p>Ten years for equipment warranty and 25 years for output warranty.</p> <p>(No action is needed.)</p>
Yokohama Tire Philippines, Inc. (YTPI)	How is JCM subsidy ratio determined?	<p>One is a combination of technology and country awarded the subsidy in the past. As the number of the combination increases, the subsidy ratio will be reduced from 50%, 40% and 30%. Another criterion is cost effectiveness of emission reductions. The subsidy amount must not exceed the amount calculated by total CO₂ emission reductions multiplied by 4,000 JPY/tCO₂.</p> <p>(No action is needed.)</p>
Yokohama Tire Philippines, Inc. (YTPI)	For this project, YTPI is a Japanese company. Does JCM subsidy scheme have such conditions?	<p>Although a representative entity of international consortium must be a Japanese company, constituent entities in partner countries can be both local companies and Japanese companies. Local companies are rather welcome.</p> <p>(No action is needed.)</p>
Yokohama Tire	When does a company in	Basically, JCM subsidy can be claimed

Philippines, Inc. (YTPI)	a partner country receive JCM subsidy?	after equipment installation and payment completion. In other words, 100% payment must be made before the subsidy request. (No action is needed.)
Yokohama Tire Philippines, Inc. (YTPI)	How many projects have been selected as JCM Model project so far?	According to the publication, 11 projects have been selected in the Philippines. (No action is needed.)

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	17/09/2020	First Edition
02.0	20/04/2021 <u>04/11/2021</u>	Second Edition <u>Initial registration by the Joint Committee through electronic decision</u>