JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

9.6MW Solar Power Project in Collaboration with Power-supply Company

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

The JCM proposed project aims to reduce GHG emissions by replacing a portion of fossil-derived fuel-based electricity with solar power. The electricity is used by customers (off-takers) of Manila Electric Company (MERALCO), the only power distribution company in Metro Manila and the largest in the country. MSpectrum, Inc., a subsidiary of MERALCO installs solar power generation systems on the roofs of MERALCO's customers and supplies them with renewable energy. This project will contribute to the stability of electricity supply in the Philippines and the reduction of CO2 will contribute to the renewable energy power supply target under the "National Renewable Energy Plan" announced in 2008. A total of 9.67 MW of solar power generation systems will be installed at 20 sites

A.3. Location of project, including coordinates

Country	Republic of the Philippines
Region/State/Province etc.:	Various sites in the Philippines
City/Town/Community etc:	20 buildings in total. - Metro Drug: Puratero Santa Rosa, Laguna Philippines - Xeland Marikina: Guerilla, cor Mayor Gil Fernando Ave, Marikina, 1800 Metro Manila - Ateneo: President Carlos P. Garcia Ave, Quezon City, 1108 Metro Manila - Xentro Mall Antipolo: 277-303 Sumulong Hwy, Antipolo, Rizal - Vista Mall North Molino: Molino Boulevard, Bacoor, Cavite - Vista Mall Vibal: Salawag, Dasmariñas, Cavite - Vista Mall General Trias: Arnaldo Hwy, General Trias, Cavite - Vista Mall Sliang: 87a Emilio Aguinaldo Hwy, Silang, 4118 Cavite

	- Vista Mall Sta. Maria: Santa Maria, Bulacan - Vista Mall Naga: Pan-Philippine Hwy, Naga, Camarines Sur - KLT Fruits: 2nd St, Dasmariñas, Cavite - Asian Terminals Batangas: Batangas Port Access Rd, Batangas - ATI Manila: Muelle de San Francisco, Port Area, Manila, Metro Manila - Alphatech Development: 202 Panginay Road 3015 Guiguinto, Bulacan - LRT1: Engineering BLdg, LRT A Compound, Airport Rd, Pasay, Metro Manila - Megamart Paniqui-1: Bayan ng Paniqui, Tarlac - Vigan Central Park: Brgy. III, Quezon Ave, Vigan City, Ilocos Sur - Gaisano Tubod Lanao Mall: Brgy. Poblacion, Tubod, Lanao Del Norte - Xentro Mall Calapan: Roxas Dr, Calapan, Oriental Mindoro, Philippines - Premiere Creative: 4th St, Dasmariñas, Cavite, Philippines
Latitude, longitude	20 buildings in total. - Metro Drug: N14.3054 E121.0912 - Xeland Marikina: N14.6372 E121.1015 - Ateneo: N14.6400 E121.0784 - Xentro Mall Antipolo: N14.6169 E121.1360 - Vista Mall North Molino: N14.4358 E120.9690 - Vista Mall Vibal: N14.3271 E120.9854 - Vista Mall General Trias: N14.3227 E120.9124 - Vista Mall Sliang: N14.2424 E120.9741 - Vista Mall Sta. Maria: N14.8606 E120.9900 - Vista Mall Naga: N13.6187 E123.2348 - KLT Fruits: N14.2888 E120.9313 - Asian Terminals Batangas: N13.7634 E121.0506 - ATI Manila: N14.5861 E120.9688

	- Alphatech Development: N14.8161 E120.8887 - LRT1: N14.5300 E121.0023 - Megamart Paniqui-1: N15.6690 E120.5793 - Vigan Central Park: N17.5728 E120.3856 - Gaisano Tubod Lanao Mall: N8.0434 E123.7907 - Xentro Mall Calapan: N13.4029 E121.1838 - Premiere Creative: N14.2840 E120.9359

A.4. Name of project participants

The Republic of the Philippines	MSpectrum, Inc.
Japan	Tokyo Century Corporation

A.5. Duration

Starting date of project operation	1/7/2021
Expected operational lifetime of project	17 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 to acquire JCM credits. Further, the implementation of the proposed project promotes the diffusion of low-carbon technologies within the Philippines.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	PH_AM002
Version number	Ver1.0

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 solar PV systems are installed on the rooftops of 20 buildings.
Criterion 2	The PV modules are certified for design qualifications (IEC 61215,	The PV modules installed by the proposed project are certified for IEC

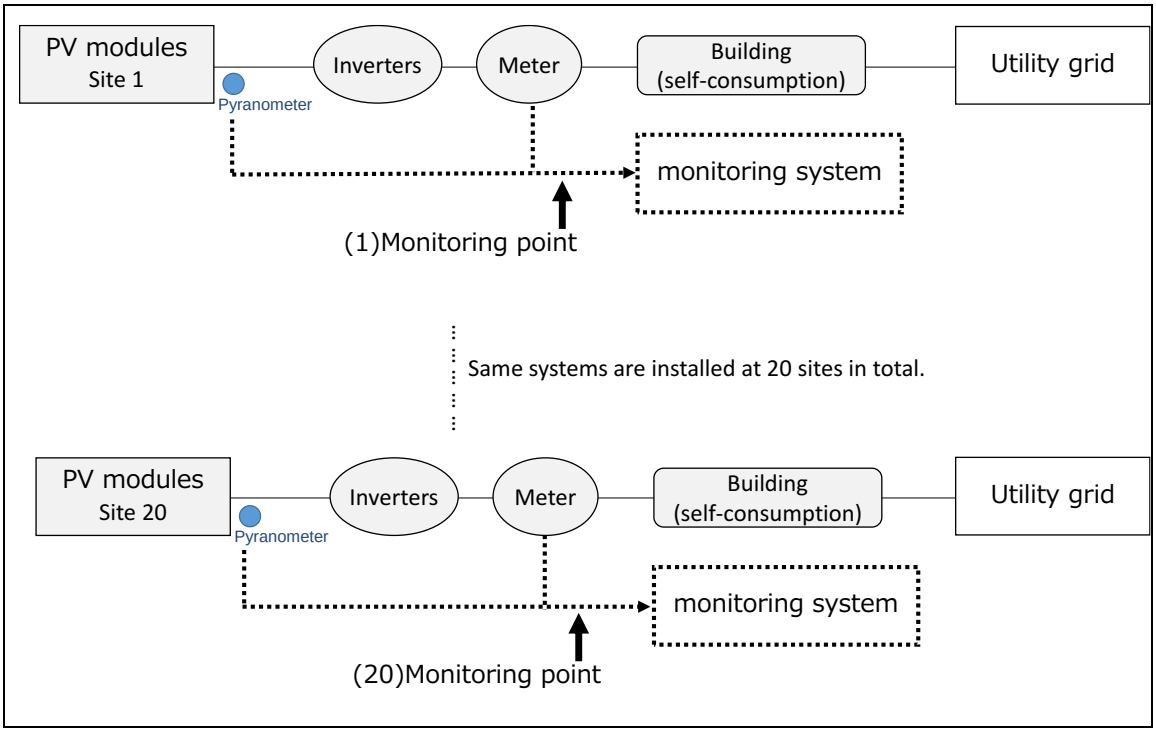
	IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	61215 and IEC 61730.
Criterion 3	The equipment used for monitoring output power of the solar PV system(s) and irradiance is installed at the project site	The equipment to monitor output power of the solar PV systems and irradiance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

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_2e)	Estimated Project Emissions (tCO_2e)	Estimated Emission Reductions (tCO_2e)
2020			
2021	609.5	0	609
2022	1,396.2	0	1,396
2023	4,345.8	0	4,345
2024	6,632.9	0	6,632
2025	6,632.9	0	6,632
2026	6,632.9	0	6,632
2027	6,632.9	0	6,632
2028	6,632.9	0	6,632
2029	6,632.9	0	6,632
2030	6,632.9	0	6,632
2031	6,632.9	0	6,632
2032	6,632.9	0	6,632
2033	6,632.9	0	6,632
2034	6,632.9	0	6,632
2035	6,632.9	0	6,632
2036	6,632.9	0	6,632
2037	6,632.9	0	6,632
2038	5,789.1	0	5,789
2039	4,920.5	0	4,920
2040	1,230.1	0	1,230
Total (tCO_2e)			**111,137**

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for the proposed project	N/A

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

To solicit comments from local stakeholders, a consultation meeting was planned by the project

participants, and the project participants invited various stakeholders. Details of the local stakeholders consultation meeting is summarized as follows:

Date and Time: 29th September 2023, Philippines 13:00 - 14:00, Japan 14:00 - 15:00
Venue: Teleconference by Zoom

Following organization from the Philippines side were invited to the consultation meeting:
- MERALCO

At the meeting, the details of the proposed JCM project and the technology to be introduced were explained by the representative of Tokyo Century Cooperation. And MSpectrum, Inc. introduced the overview of the project.
There were no negative comments toward the proposed project expressed during the stakeholders meeting by the attendees. The comments received during the local stakeholders meeting are summarized in the following section.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
MERALCO	Are there any constraints on the capacity or other limitations for executing projects using JCM?	There is no limit to the number of applications, but the Japanese government sets a maximum budget for all JCM signatory countries. Therefore, proposals may be submitted until the maximum budget is reached.
MERALCO	Are projects utilizing JCM limited to Japanese companies, or can they be implemented by any company in the Philippines?	The representative company for the project must be a Japanese entity. It cannot be a mere name loan, and its role within the project must be clearly defined. However, there are no limitations on partner companies beyond the representative business entity. Therefore, any company or office in the Philippines is eligible to participate.

MERALCO	Is it accurate to acknowledge that JCM covers a fraction of the capex?	The Japanese government provides a subsidy towards a portion of the initial capital investment for the deployment of low-carbon technologies, such as photovoltaic systems.
MERALCO	Is there a criterion for identifying the capex portion of the project? Or is there a limit, such as a certain percentage or a specific capex portion? I recall that some facilities and equipment were not eligible for subsidies from JCM.	The maximum subsidy for a 17-year scheme can be determined by multiplying the emissions reductions across this duration with the amount per t-CO2 specified by the Japanese Government.
MERALCO	Is the same true for the eco-lease scheme?	It should be noted that in the case of eco-leasing schemes, the subsidy percentage is reduced. The eco-leasing scheme is a simple procedure and there is not that much documentation required for the proposal. The monitoring period for our project is 17 years, while in the eco-leasing scenario, it is proposed to be between five and nine years, regardless of the specifics of the lease.
MERALCO	Does the subsidy cover all equipment types? For example, are photovoltaic panels, solar inverters, or panel boards eligible for subsidies?	Only items that reduce carbon dioxide emissions are eligible for assistance. Panels and inverters, for instance, contribute to the reduction of greenhouse gas emissions. However, it is challenging to qualify a trestle as a subsidized item since it solely comprises steel plates and does not contribute to carbon dioxide emissions reduction.
MERALCO	Has the previous arrangement wherein a part of the subsidy was transferred to Tokyo Century as a	The Japanese government pays a subsidy to Tokyo Century. However, they don't specify how it should be

	commission persisted today? Alternatively, can the partner company receive the entire subsidy?	allocated. As a result, negotiations need to take place within your team to determine the appropriate distribution. The present subsidy rate stands at 30%, but there are attempts to decrease it for solar projects since they have become immensely competitive.

F. References

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

Annex
N/A

Revision history of PDD		
Version	Date	Contents revised