JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Installation of Solar Power System and Storage Battery to Commercial Facility

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

The proposed JCM project aims to reduce CO_2 emissions by introducing a total of 500kW solar photovoltaic (PV) system combined with a 111kwh storage battery system at AEON MALL Jakarta Garden City. The PV system is installed on the rooftop of the mall and the storage battery system is installed at the ground of the mall area. During the daytime, power generated by the PV modules is charged to the storage battery system for the night time use, while its surplus power replaces the grid electricity for part of the mall lighting system. During the night time, power is discharged from the storage battery system for part of the mall lighting to replace the grid electricity.

A.3. Location of project, including coordinates

Country	The Republic of Indonesia
Region/State/Province etc.:	Jakarta Capital Special Region
City/Town/Community etc:	Jakarta
Latitude, longitude	6°10'19.6"S 106°57'06.9"E

A.4. Name of project participants

The Republic of Indonesia	PT AEON MALL Indonesia
Japan	ITOCHU Corporation

A.5. Duration

Starting date of project operation	September 30th, 2017
Expected operational lifetime of project	3 years and 6 months

A.6. Contribution from Japan

The proposed Project was partially supported by the Ministry of Environment, Japan (MOEJ) through the Financing Program for JCM Model projects, which provide the financial support of less than half of the initial investment for projects in order to acquire JCM credits. The facility is introduced at the project site by the Japanese project participant. The Japanese

project participant transferred the technology through conducting training on operation and maintenance at the time of trial operation.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	JCM_ID_AM017
Version number	ver01.0

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 solar PV system(s) and storage battery system(s) are newly installed.	The solar PV system and storage battery system of the project are newly installed.
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 installed PV module (VBHN325SJ47) has obtained a certification of design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2).
Criterion 3	The equipment to monitor output power of the solar PV system(s) and irradiance is installed at the project site.	Solar PV Data Logger (ABB VSN700-05) is installed to monitor output power of the solar PV system and irradiance sensor (ABB VSN 800-14) is installed at the project site.
Criterion 4	In the case of replacing the existing storage battery system (s), a plan is prepared in which mercury used in the existing storage battery system (s) is not released to the environment. Execution of the prevention plan is checked at the time of verification, in order to confirm that mercury used for the existing one replaced by the project is not released to the environment.	The proposed project does not replace the existing storage battery systems. The newly installed battery for the project will not be released to the environment complying with the Indonesian regulation.

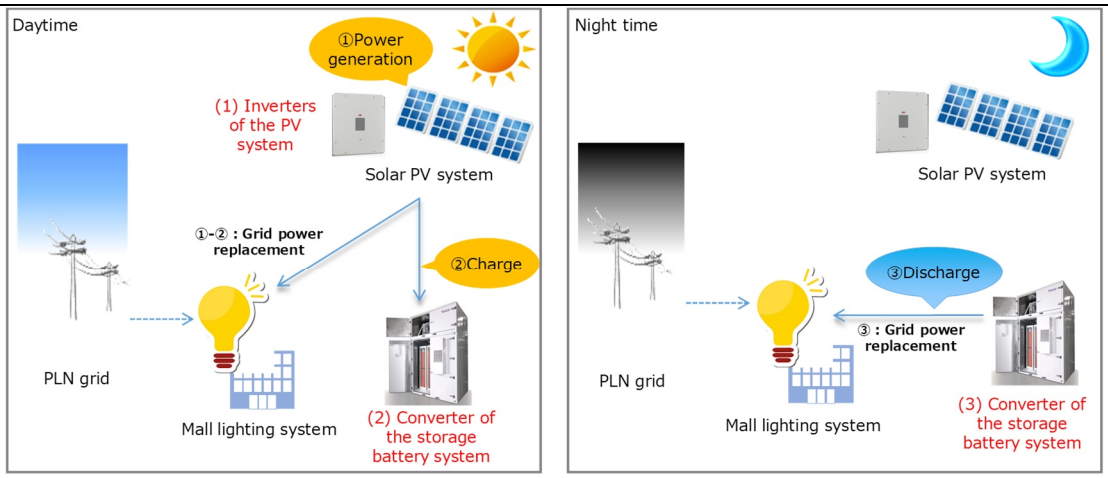
C. Calculation of emission reductions

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



Monitoring items ① power generation by the solar PV system, ② power charge to and ③ discharge from the storage battery system.
Monitoring points (1)(2)(3) of the corresponding monitoring items ①②③, all connected to the internet for remote monitoring.

C.3. Estimated emissions reductions in each year

Year	Estimated Reference emissions (tCO_2e)	Estimated Project Emissions (tCO_2e)	Estimated Emission Reductions (tCO_2e)
2017	103.98	0	103
2018	398.98	0	398
2019	305.95	0	305
2020	398.98	0	398
2021 (Jan-Mar)	99.75	0	99
2022	-	-	-
2023	-	-	-
2024	-	-	-
2025	-	-	-
2026	-	-	-
2027	-	-	-
2028	-	-	-
2029	-	-	-

2030	-	-	-
Total (tCO_2e)			1,303

Note:
The estimated emission reductions in each year are rounded down after the decimal point.

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for the proposed project	NO

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

The project participants identified the local stakeholders as follows, accommodating the suggestions by the Indonesian JCM Secretariat.

- PT Aeon Mall Indonesia
- Ministry of Energy and Mineral Resources
- Coordinating Ministry for Economic Affairs
- DKI Jakarta Provincial Government - Environmental Agency

The local stakeholder consultation (LSC) was conducted as follows with the attendance of above-mentioned local stakeholders.

Time	Venue	Program
8:30-10:00 27th Sep. 2017	HOTEL SANTIKA PREMIERE KOTA HARAPAN INDAH	Consultation meeting
10:30-11:15 27th Sep. 2017	AEON MALL Jakarta Garden City	Project site tour

Comments during the LSC are summarized in the following section E.2. No negative comments were obtained from the local stakeholders. It was also confirmed that none of the comments requires further mitigation action from the project side.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
DKI Jakarta Provincial	How long is the lifetime of the battery?	The project participant answered that the battery performance guarantees

Government		for 10 years. The battery lifetime for this application will be 15 years. No further action is required regarding this matter.
	What is the disposal process of the battery after use?	The project participant answered that the facility employs lithium battery and the disposal process is the same as that of batteries commonly used for laptop computers, for example, where disposed batteries are delivered to registered battery collectors, then recyclable material or parts are recovered, while other materials or parts are disposed complying with the laws and regulations to avoid damage to the environment. No further action is required regarding this matter.

F. References

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

Annex

Revision history of PDD		
Version	Date	Contents revised
01.0	March 23rd, 2018	First edition
02.0	December 20th, 2018	Second edition: PDD format version has been updated.
03.0	August 1st, 2019	Third edition: Section C.3. has been corrected.
04.0	February 13th, 2020	Fourth edition: Sections A.5., B.2., C.3. and E.2. have been revised during the process of validation.

	February 17th, 2021	Initial registration by the Joint Committee trough electronic decision