JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Introduction of 11MW Solar Power Project in Savannakhet Province

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

The main purpose of this project is to reduce CO_2 emissions from the grid by installing solar power plants with a total capacity of 9MWac/11MWdc at two locations in Savannakhet Province, the Lao People's Democratic Republic (hereinafter referred to as "Laos"). The proposed project was developed by Khounxay Construction Development Group Sole Co., Ltd, who is a leading company in Laos. Laos relies heavily on hydropower and imports electricity from Thailand and Vietnam especially during the dry season. In this regard, this project enables to reduce those electricity imports. In addition, the solar systems replace the grid power and contribute to the diversification of the power supply structure in Laos which has been concentrated in hydropower. The project is implemented by Green Energy Laos Development Co., Ltd., who is a company incorporated in Laos. The power plant utilizes the crystalline silicon PV modules made by Sharp Solar Solution Asia Co., Ltd.

A.3. Location of project, including coordinates

Country	The Lao People's Democratic Republic
Region/State/Province etc.:	Savannakhet Province
City/Town/Community etc:	Houayxai Village, Champhone District
Latitude, longitude	Farm 1: latitude 16°19' 31" N, longitude 105° 8' 27" E Farm 3: latitude 16°19' 43" N, longitude 105° 8' 24" E

A.4. Name of project participants

The Lao People's Democratic Republic	Khounxay Construction Development Group Sole Co., Ltd (KXN)
	Green Energy Laos Development Co., Ltd (GLD)
Japan	Sharp Energy Solutions Corporation (SESJ)

A.5. Duration

Starting date of project operation	01/01/2021
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 in order to acquire JCM credits. The technology of advanced and efficient solar power system is introduced in the proposed project by the Japanese project participant. Further, implementation of the proposed project promotes technology transfer of low carbon technologies in Lao PDR.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	JCM_LA_AM002
Version number	Ver. 01.0

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

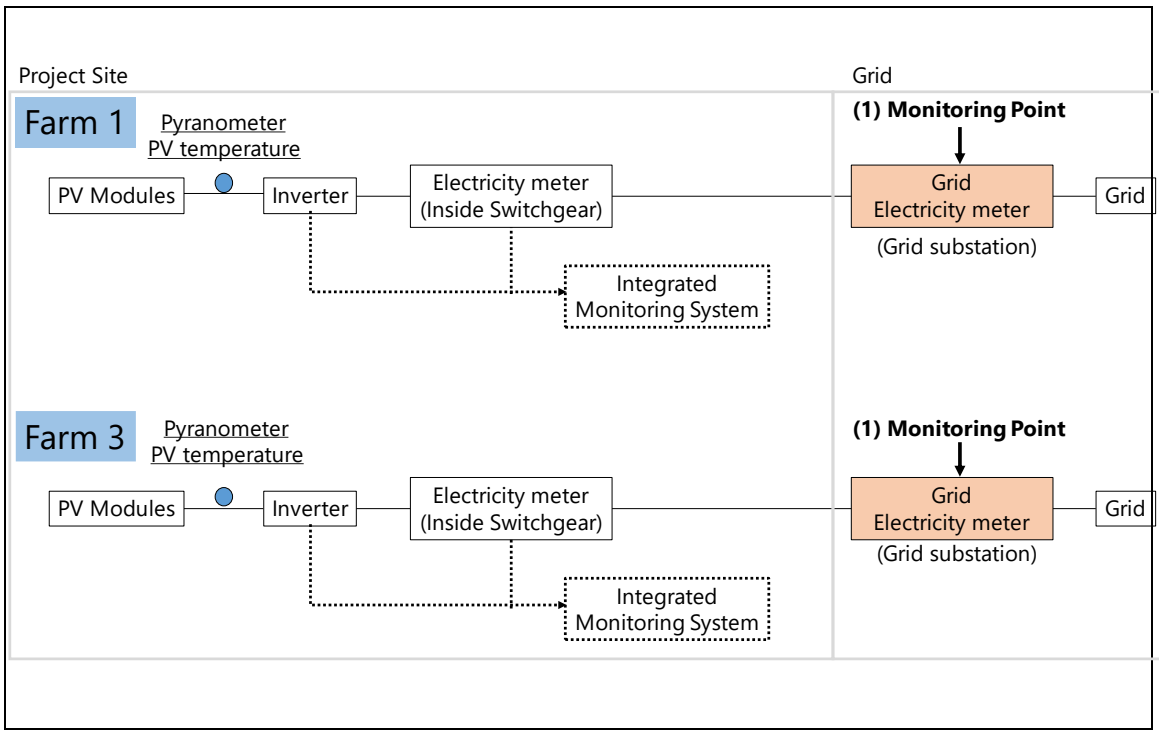
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project installs solar PV system(s).	The project installs solar PV systems with a total capacity of 9MWac/11MWdc at two locations in Savannakhet Province.
Criterion 2	The PV modules are certified for design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	The PV modules installed in the project have been certified for IEC 61215 for design qualifications and IEC 61730-1 and IEC 61730-2 for safety qualification.
Criterion 3	The equipment used for monitoring output power of the solar PV system(s) and irradiance is installed at the project site.	Electricity meter and pyranometer have been installed at the project site to monitor output power and irradiance respectively.

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	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)
2021	4,795.0	0.0	4,795
2022	4,795.0	0.0	4,795
2023	4,795.0	0.0	4,795
2024	4,795.0	0.0	4,795
2025	4,795.0	0.0	4,795
2026	4,795.0	0.0	4,795
2027	4,795.0	0.0	4,795
2028	4,795.0	0.0	4,795
2029	4,795.0	0.0	4,795
2030	4,795.0	0.0	4,795
Total (tCO_2e)			47,950

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for	YES

the proposed project	

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 sent out invitation letters to the consultation meeting to various stakeholders. Details of the local stakeholders' consultation meeting are summarized as follows:

<Meeting outline>
Date and Time: Oct. 26, 2021 9:00 – 10:00 (ICT)
Venue: Online Meeting (Zoom)

<Meeting agenda>

#	Time	Program	Remarks
1	9:00 - 9:10	Opening remarks	GEC and Green Energy Laos Development Co., Ltd.
2	9:10 – 9:15	Explanation of JCM	Nippon Koei Co, Ltd.
3	9:15 – 9:25	Overview of the project	Green Energy Laos Development Co., Ltd.
4	9:25 – 9:35	Explanation of technology (PV) introduced in this project	Supplier (Sharp Energy Solutions Corporation)
5	9:35 – 9:50	Question and answers	All participants
6	9:50 - 10:00	Closing remarks	Green Energy Laos Development Co., Ltd. and Sharp Energy Solutions Corporation

<Meeting summary>
In order to share the information of Joint Crediting Mechanism (JCM) model project in Savvannakhet province and collect the comments/opinions from the persons concerned, the local stakeholder consultation (LSC) was conducted in accordance with above agenda.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Electricite du Laos (EDL)	EDL expects to make another project to expand capacity of this project because demand of electricity is unstable and supply power from this project is not enough. Is there any idea on expansion of this project?	To respond EDL's request, Sharp would like to work with GLD and provide solutions to improve the Lao grid. No further action is needed.
Department of Natural Resources and Environment (DNRE)	What is the benefit for the project site and the local community?	Electricity is imported from overseas currently, and the project site is located nearby demand areas. Thus, it is expected to reduce transmission losses. No further action is needed.

	How do you estimate carbon emission reduction?	The emission factor for carbon dioxide (CO_2) emissions during normal power generation (mainly thermal power generation) has been provided by the Lao government. And carbon emission reduction is considered that the power generation in this project has reduced the CO_2 emissions that would normally have been generated. In other words, the carbon emission reductions are calculated from the emission factor and the amount of electricity generated. No further action is needed.
	How will the JCM credit allocation for this project be determined?	The detailed percentage will be discussed with Japanese and Lao government. More than 50% of credit will be issued to Japanese government and the other credit will be shared with Sharp Japan and Lao side including KXN-GLD. No further action is needed.

F. References
ENVIRONMENT MANAGEMENT AND MITIGATION PLAN (September 2020) Certificate of Environment (27/10/2020) approved by Natural Resources and Environment

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

Annex
N/A

Revision history of PDD		
Version	Date	Contents revised
01.0	22/11/2021	First edition
02.0	03/02/2022 22/06/2022	Second edition Initial registration by the Joint Committee through electronic decision