JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Introduction of Solar PV System at Salt Factory

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

The proposed JCM project aims to reduce CO2 emissions by introducing a 991.1kW grid-connected solar photovoltaic (PV) system adjacent to a salt refinery of Krystalline Salt Limited. The power from the solar PV system replaces the grid electricity and power from the diesel genset. All of the power generated by the solar PV system is self-consumed and not fed into the grid. A remote monitoring system to monitor the performance of the system is also installed.

A.3. Location of project, including coordinates

Country	Kenya
Region/State/Province etc.:	Kilifi County
City/Town/Community etc:	Gongoni, Malindi
Latitude, longitude	S 3° 02' 04.1" and E 40° 08' 24.4"

A.4. Name of project participants

The Republic of Kenya	Krystalline Salt Limited
Japan	Pacific Consultants Co., Ltd.

A.5. Duration

Starting date of project operation	14/12/2016
Expected operational lifetime of project	10 years

A.6. Contribution from Japan

The proposed project was partially supported by the Ministry of the Environment, Japan 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. As for technology transfer, capacity building on operation and monitoring has been provided by Pacific Consultants Co., Ltd. (PCKK) in conjunction with the EPC company.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	KE_AM002
Version number	Ver. 01.0

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

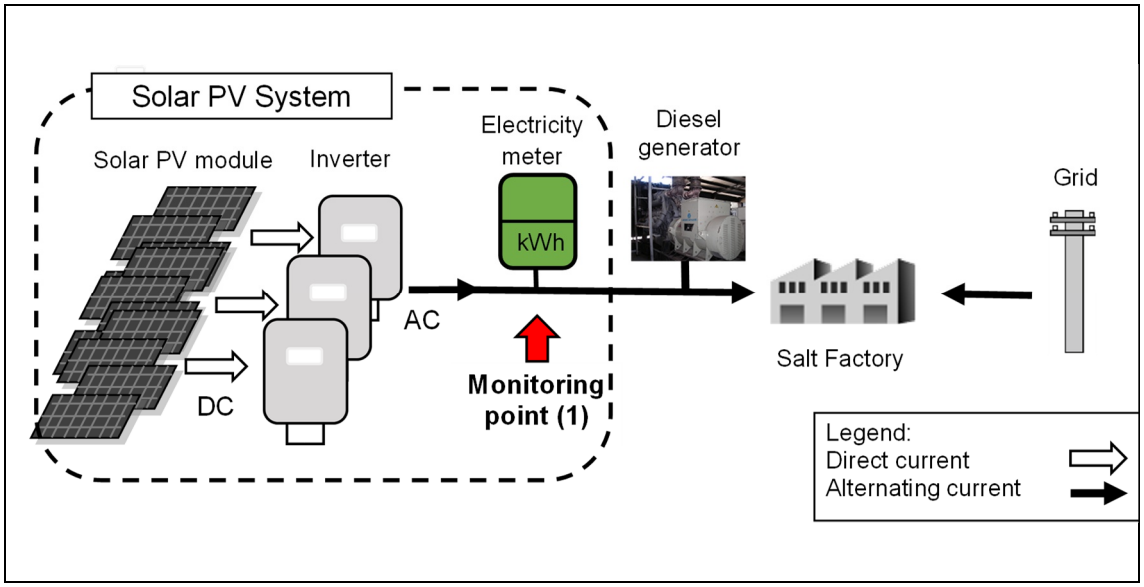
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project installs solar PV system(s).	A solar PV system is installed. The solar PV module employed is Kyocera polycrystalline solar module KT265-6MCA. The inverter employed is SMA Tripower 25000TL.
Criterion 2	The PV modules have obtained a certification of design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	The installed PV module Kyocera polycrystalline solar module KT265-6MCA 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 the output power of the solar PV system(s) and irradiance is installed at the project site.	An electricity meter is installed to measure output power of the solar PV system. A pyranometer is installed at the site to measure irradiance.

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 and/or captive electricity	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})
2013	-	-	-
2014	-	-	-
2015	-	-	-
2016	39.0	0	39
2017	786.7	0	786
2018	781.3	0	781
2019	776.0	0	776
2020	770.1	0	770
Total (tCO_{2e})	3,153.1	0	3,152

D. Environmental impact assessment/ social impact assessment/ strategic environmental assessment	
Legal requirement of environmental impact assessment/ social impact assessment/ strategic environmental assessment for the proposed project	Yes

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

The stakeholders were consulted in the course of an EIA before the construction started. Three Kenyan EIA experts hired by Krystalline Salt Limited conducted a questionnaire survey in the first half of 2016 targeting the local communities around the salt factories, in Gongoni and Marereni as a part of the EIA. Furthermore, a seminar for the salt factory employees in Gongoni was organized by PCKK on 20 February 2017.

No.	Date	Venue	Method	Participants
1	First half of 2016	-	Questionnaire survey	Local schools, community organized group, religious institution, and representatives of local communities
2	20 February 2017	Meeting room of salt factory in Gongoni	Seminar	Representatives of employees from each section of the salt factory in Gongoni

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Local institutions and the representatives of local communities	Some of the respondents highlighted solar energy as a source of environmentally friendly energy. Some requested considerations to safer disposal mechanism before the disposal of solar panels. Some raised a need of awareness raising programme for local community regarding the impact of the solar project. However, no concerns specific to this project were raised according to the EIA report.	Because there were no concerns specific to this project, no action was taken. However, waste management is included in the proposed mitigation measures in the EIA report. Proper waste management for the solar panels was ensured during the construction according to the provisions of EIA license.

Employees of the salt factory in Gongoni	No comments or concerns regarding the project were raised.	No action is needed.

F. References

1. Proposed Solar Farm at Krystalline Salt Works Gongoni and Mini Solar Farms at Krystalline Salt Works Gongoni and Marereni on Land Reference Number 10755 (Gongoni) and Land Reference Number 13427 (Marereni), Kilifi County, Environmental Impact Assessment Project Report 2016
2. National Environment Management Authority Environmental Impact Assessment License, NEMA/EIA/PSL/3818

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

Annex

N/A

Revision history of PDD

Version	Date	Contents revised
01.0	02/10/2017	First edition
02.0	26/10/2017 27/01/2020	Second edition Initial registration at JC4