

## Joint Crediting Mechanism Project Design Document Form

### A. Project description

#### A.1. Title of the JCM project

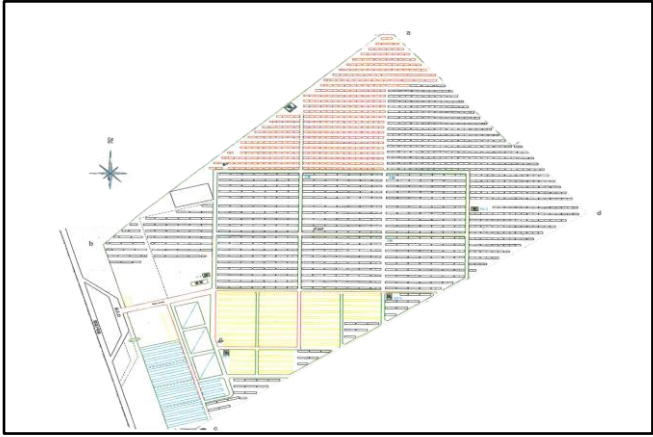
Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb

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

Solar power plant is installed by the proposed project in Songinokhairkhan district located on the outskirts of Ulaanbaatar. The project site is in northwest 37km from Ulaanbaatar city center. The purpose of this project is to reduce CO2 emissions, mitigate air pollution and stabilize power supply in Mongolia. The solar power plant of the proposed project is connected to the national grid. This solar power plant can replace some parts of power generation from coal fired power plants of the national grid by renewable energy.

At the validation, 2.3MW solar PV modules were planned to install. After the validation, this project started operation in August 2017 with 2.3MW and in November with 12.7MW finally

#### A.3. Location of project, including coordinates

Country	Mongolia
Region/State/Province etc.:	Ulaanbaatar, Songinokhairkhan district
City/Town/Community etc:	West-61/2km west of the crossing 361
Latitude, longitude	<p>Location is the place enclosed by a,b,c,d                      a ; Latitude: N48°2'10" Longitude:E106°31'1"                      b ; Latitude: N48°1'58" Longitude:E106°30'38"                      c ; Latitude:N48°1'44" Longitude:E106°30'46"                      d ; Latitude:N48°1'58" Longitude:E106°31'13"</p> 

## A.4. Name of project participants

Mongolia	Bridge LLC, Everyday Farm LLC
Japan	FARMDO CORPORATION

## A.5. Duration

Starting date of project operation	26/08/2017
Expected operational lifetime of project	20 years

## A.6. Contribution from Japan

The proposed project was partially supported by the Ministry of the Environment, Japan (MOEJ) through the Financing Program 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. Japanese engineers support the development of telemeter system such as automatic record of the monitoring data, as the core of MRV activities of JCM.

## B. Application of an approved methodology(ies)

## B.1. Selection of methodology(ies)

Selected approved methodology No.	JCM_MN_AM003
Version number	ver02.0

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

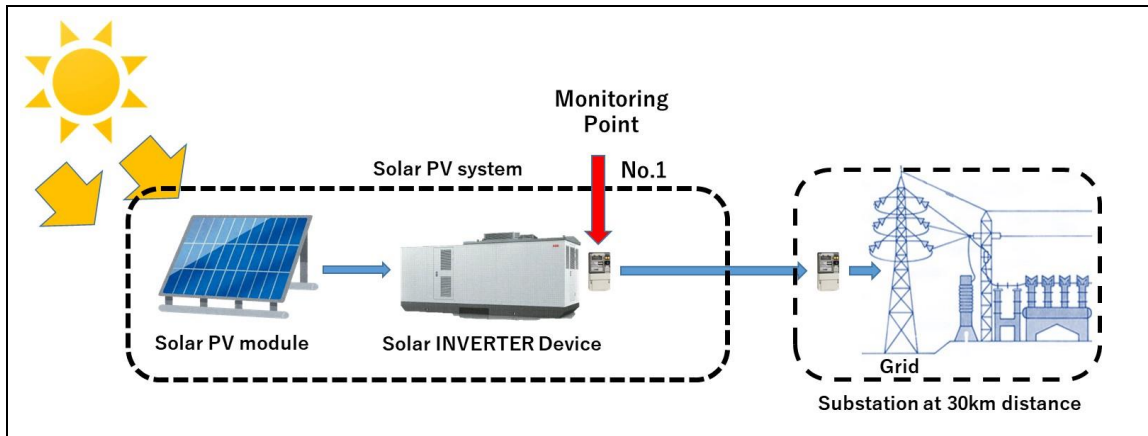
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project newly installs solar PV system(s).	12.7MW solar PV module is newly installed as solar PV system.
Criterion 2	The PV modules obtained a certification of design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC61730-2).	The solar PV modules employed have obtained a certification of design qualification (IEC 61215) and safety qualification (IEC 61730-1 and IEC61730-2).
Criterion 3	The equipment used to monitor 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 electricity	CO <sub>2</sub>
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 <sub>2</sub> e)	Estimated Project Emissions (tCO <sub>2</sub> e)	Estimated Emission Reductions (tCO <sub>2</sub> e)
2017	1,016.8	0.0	1,016
2018	12,009.6	0.0	12,009
2019	12,009.6	0.0	12,009
2020	12,009.6	0.0	12,009
2021	12,009.6	0.0	12,009
2022	12,009.6	0.0	12,009
2023	12,009.6	0.0	12,009
2024	12,009.6	0.0	12,009
2025	12,009.6	0.0	12,009
2026	12,009.6	0.0	12,009
2027	12,009.6	0.0	12,009
2028	12,009.6	0.0	12,009

2029	12,009.6	0.0	12,009
2030	12,009.6	0.0	12,009
Total (tCO <sub>2</sub> e)			157,133

<b>D. Environmental impact assessment</b>	
Legal requirement of environmental impact assessment for the proposed project	<p>Yes</p> <p>The project is subject to an environmental impacts assessment of Mongolia according to national regulations. The environmental impact assessment was carried out in 2015.</p> <p>Evaluation result of environmental impact assessment report was issued by Ministry of Environment, Green Development and Tourism of Mongolia on 17 Nov. 2015.</p> <p>Project was found to be executable.</p>

### **E. Local stakeholder consultation**

#### E.1. Solicitation of comments from local stakeholders

Comments from local stakeholders were obtained at the following meeting with each stakeholder.

Both local stakeholders consultation (LSC) meetings were held through the following procedures.

Step1: Selected stakeholders such as central and/or local governmental officials, construction persons, neighboring citizens who live near the project site and so on to hear impartial and diversified comments.

Step2: Sent invitation letter to stakeholders selected in Step1 in advance, in order to devote stakeholders' time to participate in LSC meeting.

Step3: Reminded stakeholders by telephone call and/or e-mail just before each LSC meeting.

Step 4: Held LSC meetings in accordance with following agenda basically.

- i) Opening session of a LSC including explanation of purpose
- ii) Greetings from a responsible person of Farmdo and CEO of Everyday Farm
- iii) Presentation of the project including contributions by the project, installation schedule, etc.

iv) Presentation of JCM financing scheme.

v) Q&A

1. [Place] Everyday Farm LLC, Conference Room

- Date and hour: October 03, 2016, 14:00-16:00
- Venue: “BRIDGE PLAZA” Bayanzurkh district, 14<sup>th</sup> khoroo, Enkhtavian avenue, Ulaanbaatar-51, Mongolia
- Participants: Ministry of EGDT (Ministry of Environment, Green Development and Tourism), MOE (Ministry of Energy), ERC (Energy Regulatory Commission), NDC (National Dispatching Center), Shugam LLC, etc.

2. [Place] Farmdo Co., Ltd, Monarun Farm

- Date and hour: October 04, 2016, 14:00-16:00
- Venue: West-61/2km west of the level crossing 361, Songinokhairkhan district, Ulaanbaatar Mongolia
- Participants: MOE, Officers of Songinokhairkhan district, Neighboring dwellers, etc.

In both of the stakeholders meetings, project overviews were explained by PPs.

Lively exchange of views between stakeholders and PPs were made. All stakeholders expressed their appreciation for this project conclusively. Comments received have been summarized in the following section E.2.

## E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
NDC (National Dispatching Center)	Is SCADA necessary for grid connection? Is SCADA installed before the end of the year?	Drawing of SCADA is in preparation. We make every effort to install SCADA before grid connection.
NDC (National Dispatching Center)	Have you received an authority’s approval for engineering drawings for the project?	Yes, we have duly received an authority’s approval and installation works are in progress based upon the drawings approved.
NDC (National Dispatching Center)	It’s heard that grid connection of the project is within the year. Please provide the expected electricity generated in next year.	In the morning on 3 Oct, the letter mentioning the expected electricity generated in next year was submitted to NDC. Accordingly you can see it soon.
NCF (Nature)	What is lifetime of Solar PV (Photo	Lifetime of PV module is more than

Conservation Fund)	Voltaic)?	20 years, it means there is slight degradation of performances.
Songinokhairkhan district	Please prepare the information on calculation method of CO <sub>2</sub> reduction in JCM scheme.	The materials such as leaflet of the JCM in Mongolia will be sent shortly. After LSC, these materials were sent.

#### F. References

Evaluation result of environmental impact assessment report (issued by Ministry of Environment, Green Development and Tourism of Mongolia)

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

#### Annex

N/A

#### Revision history of PDD

Version	Date	Contents revised
Ver1.0	19/12/2016	First Edition
Ver2.0	31/01/2017	Second Edition
Ver3.0	16/02/2017	Third Edition
Ver4.0	09/03/2017	Fourth Edition
Ver5.0	11/07/2018	Fifth Edition
Ver6.0	28/07/2018	Sixth Edition
Ver7.0	26/08/2018	Seventh Edition
Ver8.0	25/10/2018	Eighth Edition
Ver9.0	28/10/2018	Ninth Edition
Ver10.0	30/10/2018	Tenth Edition