

## Joint Crediting Mechanism Project Design Document Form

### A. Project description

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

Introduction of 15MW Solar Power System near New Airport

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

The Project involves installation of a large-scale solar power plant with the generating capacity of 15MW in Khushing Khundii, near New Ulaanbaatar International Airport. The project is implemented by Tenuun Gerel Construction LLC, a company incorporated in Mongolia. The power plant utilizes the crystalline silicon photovoltaic (PV) modules of Sharp Corporation of Japan (ND-AF320).

The electricity produced by the Project is supplied to the Central Energy System of Mongolia displacing electricity generation by fossil-fuel based power plants, contributing to greenhouse gas emissions reduction in Mongolia.

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

Country	Mongolia
Region/State/Province etc.:	Töv Province / Sergelen District
City/Town/Community etc:	Khushigiin Khundii / 4th bag
Latitude, longitude	Latitude: N 47° 37' 16" Longitude: E 106° 43' 24"

#### A.4. Name of project participants

Mongolia	Tenuun Gerel Construction LLC
Japan	Sharp Energy Solutions Corporation

#### A.5. Duration

Starting date of project operation	6/7/2019
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.

Throughout various stages of project implementation including project design, construction, scheduling, installation, Sharp Corporation has provided local operators with required training and know-how transfer and is also expected to do so continuously for operation and maintenance phases.

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

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

Selected approved methodology No.	MN_AM003
Version number	02.0

### 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).	The project installs 15MW green-field solar power plant in Khushing Khundii, near New Ulaanbaatar International Airport.
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 IEC 61730-2).	The PV modules installed in the project have been certified for IEC 61215, IEC 61730-1 and IEC 61730-2).
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

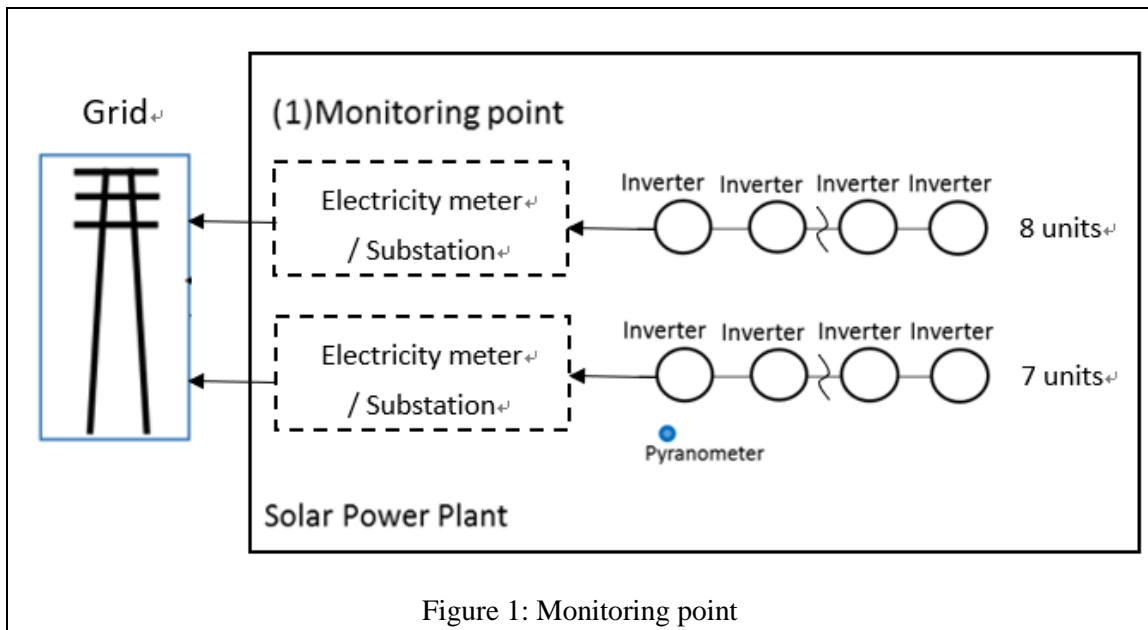


Figure 1: Monitoring point

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)
2019	9219.2	0.0	9219
2020	18,438.5	0.0	18,438
2021	18,438.5	0.0	18,438
2022	18,438.5	0.0	18,438
2023	18,438.5	0.0	18,438
2024	18,438.5	0.0	18,438
2025	18,438.5	0.0	18,438
2026	18,438.5	0.0	18,438
2027	18,438.5	0.0	18,438
2028	18,438.5	0.0	18,438
2029	18,438.5	0.0	18,438
2030	18,438.5	0.0	18,438
Total (tCO <sub>2</sub> e)			212,037

**D. Environmental impact assessment**

Legal requirement of environmental impact assessment for the proposed project	Yes
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## 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 stakeholder's consultation meeting is summarized as follows:

#### [Meeting outline]

- Date and Time: 2 October 2018, 10:00-11:30
- Venue: Unit 412, L4, Central Tower, Sukhbaatar district, Ulaanbaatar, Mongolia
- Invited organizations:
  - Ministry of Environment and Tourism (JCM Secretariat)
  - Ministry of Energy of Mongolia
  - Governor of Khushigtiin Khundii
  - Energy Regulatory Commission
  - National Dispatching Center
  - National Renewable Energy Center
  - Embassy of Japan

#### [Meeting agenda]

Opening remarks	Mr. Odbaatar Sukhbaatar Executive Director Tenuun Gerel Construction LLC
Introduction of JCM Scheme	Ms. Shoko Fukahori Sharp Energy Solutions Corporation
Introduction of the JCM project	Mr. Odbaatar Sukhbaatar Executive Director Tenuun Gerel Construction LLC
Q and A session	
Closing remarks	Mr. Odbaatar Sukhbaatar Executive Director Tenuun Gerel Construction LLC

#### [Meeting summary]

There were total of 17 stakeholders from the invited agencies and the project developers attended the meeting. The project was received positively, and stakeholders showed their appreciation of the JCM scheme and commended the project participants for implementing the solar power project which is in line with the Mongolian government's policy of renewable energy development. For those who were invited and were unable to attend the meeting, the project

participants sent presentation materials used during the meeting, requesting them to send their comments, if any. The project did not receive any comments from those who were invited and were not able to attend the local stakeholders' consultation meeting. The received comments from the local stakeholders, along with the responses/action to the comments, are listed in the following section.

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

Stakeholders	Comments received	Consideration of comments received
JCM Secretariat of Mongolia	Has a third-party entity (TPE) for the project been appointed? If not, we would like to recommend Mongolian TPEs.	For the project supported through the Financing Programme for JCM Model projects, the project participants are not in the position to appoint TPEs. However, we are happy to cooperate with Mongolian TPEs if they are selected by the programme. (No further action required.)
Energy Regulatory Commission	How does Tenuun Gerel Construction LLC plan to utilize their JCM credit? It may be beneficial for the country if Tenuun Gerel Construction LLC donate its JCM credit to National Dispatching Center.	According to the JCM rule, JCM credits can be firstly allocated among two governments and/or the project participants at credit issuance. Specific rate of credit allocation are decided for each project by Joint Committee. As an example, for the first JCM credit issuance for 10MW Solar Power Project in Darkhan City (MN004), the credit allocation was decided as follows: - 70% for Japanese government - 20% for Mongolian government - 10% for project participants As for the proposed project, the credit allocation will be decided through the same process as Darkhan project. Tenuun Gerel Construction LLC may be able to transfer its share of JCM credits to National Dispatching Center, if the rule of Mongolian National registry allows. (No further action required.)
Ministry of Environment and Tourism (JCM Secretariat)	For the projects implemented without JCM support (e.g. Zamin Uud solar power project), how does the	For those projects implemented not under JCM program, we trust that the GHG emission reductions achieved are fully counted as the achievement by Mongolia, that it will be counted along with the Mongolian standard. (No further action required.)

Stakeholders	Comments received	Consideration of comments received
	project developer handle the emission reductions achieved by such projects?	
National Dispatching Center	What are Sharp's future projects?	After completion of this project in November 2018, Sharp will construct two other solar power projects in Mongolia which have been selected as JCM Model projects. (No further action required.)
National Dispatching Center	Is the number of workers at the power plant (i.e. 10+ staff) assigned by Tenuun Gerel considered appropriate?	The organization chart indicates sufficient number of workers/dispatcher necessary for the safe operation of the plant, including handling of urgent operational conditions. (No further action required.)
National Dispatching Center	Are there other JCM projects in Mongolia?	There are five registered JCM projects in Mongolia, all of which are in energy sector. The first call for proposals under the programme for JCM Model projects was open in April 2018. The second call for proposals is expected in October 2018. (No further action required.)

#### F. References

Evaluation result of Environmental Impact Assessment report issued by Ministry of Environment 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
01.0	15/11/2018	1st draft