JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Introduction of 15MW Solar Power System near New Airport
Reference number	MN006
Third-party entity (TPE)	Japan Management Association (JMA)
Project participant contracting the TPE	Sharp Energy Solutions Corporation
Date of completion of this report	22 March 2021

A.2 Conclusion of validation

Overall validation opinion	☒ Positive ☐ Negative

A.3. Overview of final validation conclusion

Only when all of the checkboxes are checked, overall validation opinion is positive.

Item	Validation requirements	No CAR or CL remaining
Project design document form	The TPE determines whether the PDD was completed using the latest version of the PDD forms appropriate to the type of project and drafted in line with the Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan and Monitoring Report.	☒
Project description	The description of the proposed JCM project in the PDD is accurate, complete, and provides comprehension of the proposed JCM project.	☒
Application of approved JCM methodology (ies)	The project is eligible for applying applied methodology and that the applied version is valid at the time of submission of the proposed JCM project for validation.	☒
Emission sources and calculation of emission reductions	All relevant GHG emission sources covered in the methodology are addressed for the purpose of calculating project emissions and reference emissions for the proposed JCM project.	☒
	The values for project specific parameters to be fixed *ex ante* listed in the Monitoring Plan Sheet are appropriate, if applicable.	☒
Environmental impact assessment	The project participants conducted an environmental impact assessment, if required by Mongolia, in line with Mongolia's procedures.	☒
Local stakeholder consultation	The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project.	☒
Monitoring	The description of the Monitoring Plan (Monitoring Plan	☒

Item	Validation requirements	No CAR or CL remaining
	Sheet and Monitoring Structure Sheet) is based on the approved methodology and/or Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan, and Monitoring Report. The monitoring points for measurement are appropriate, as well as whether the types of equipment to be installed are appropriate if necessary.	
Public inputs	All inputs on the PDD of the proposed JCM project submitted in line with the Project Cycle Procedure are taken into due account by the project participants.	☒
Modalities of communications	The corporate identity of all project participants and a focal point, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are included in the MoC.	☒
	The MoC has been correctly completed and duly authorized.	☒
Avoidance of double registration	The proposed JCM project is not registered under other international climate mitigation mechanisms.	☒
Start of operation	The start of the operating date of the proposed JCM project does not predate January 1, 2013.	☒

Authorised signatory:	Mr. ☒ Ms. ☐
Last name: Wako	First name: Nemoto
Title: Senior Executive of GHG Certification Center, JMA	
Specimen signature: [redacted]	Date: 22/03/2021

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Kenji Suzuki	JMA	Team Leader	☒	Technical competence qualified	☐
Mr. ☒ Ms. ☐	Masao Tomizawa	JMA	Team Member	☒	Technical competence qualified	☐
Mr. ☒ Ms. ☐	Motoyuki Matsumoto	JMA	Internal Reviewer	☒	Technical competence qualified	☐
Mr. ☐ Ms. ☐				☐		☐

Please specify the following for each item.

* *Function: Indicate the role of the personnel in the validation activity such as team leader, team member, technical expert, or internal reviewer.*

* *Scheme competence: Check the boxes if the personnel have sufficient knowledge on the JCM.*

* *Technical competence: Indicate if the personnel have sufficient technical competence related to the project under validation.*

C. Means of validation, findings, and conclusion based on reporting requirements

C.1. Project design document form

<Means of validation>

PDD (Ref.1) was checked using the "Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_MN_GL_PDD_MR_ver03.1) ".

Review history of the PDD is as follows.

- PDD version 1: PDD was submitted to JMA on 23 Dec.2020. And the PDD was informed by JCM homepage for public inputs.
- PDD version 2: PDD was revised on 26 Feb.2021 to resolve the remaining issues. PDD version 2 is final version.

The latest version of the PDD form (JCM_ MN _F_PDD_ver03.1) was checked at the website of New Mechanisms Information Platform for Mongolia. Validation team confirmed that the latest version of the PDD form was used for all version of PDD. Also, validation team confirmed that form of Monitoring Spreadsheet (JCM_ MN_AM003_ver02.0) which was approved as a methodology (Ref.2) by Joint Committee was used for the proposed project.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the PDD was completed using the latest version of the PDD form and in accordance with the "JCM Guidelines for Developing PDD and MR (JCM_MN_GL_PDD_MR_ver03.1) (Ref.14)".

C.2. Project description

<Means of validation>

The proposed project is to install a large-scale solar power plant with the generating capacity of 15MW in Khushing Khundii, near New Ulaanbaatar International Airport in Mongolia. 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).

Validation team conducted the assessment with the step below by following "Joint Crediting Mechanism Guidelines for Validation and Verification (JCM_MN_GL_VV_ver01.0) (Ref.13)".

- Document review was conducted using the checklist based on the "JCM Guidelines for Validation and Verification (Ref.13)".
- Interviews with all project participants (PPs) through the internet were conducted. The validation was conducted without on-site visit by the following reasons.
  - Due to the COVID-19 pandemic.
  -The information required for validation, which would normally be verified during on-site assessment, was verified by alternative methods such as document and photo reviews, interviews via internet, and e-mail.

(Also, on 04 January 2021, the Joint Committee between Mongolia and Japan announced that due to the COVID-19 pandemic, the Joint Committee between Mongolia and Japan (JC) decided to ease requirements on an on-site visit of the first verification by a third-party entity (TPE) as a temporary measure effective from 4 January until 31 December 2021.)

Each section in the PDD was checked as follows during document review and interviews to confirm the project description.

A.1, 2:

The proposed project is to reduce CO2 emissions by introducing solar PV system. The electrical power generated by the solar PV system displaces the electrical power from the grid. Validation team confirmed that explanation of how the proposed project reduces greenhouse gas emissions was described in the PDD.

Validation team checked the solar PV system described in the PDD with "Specification of solar

PV system (Ref.3-6-1)", photos of equipment (Ref.3-1) and interviews with PPs. Validation team confirmed that the type of solar PV module described in the PDD was installed at the project site. Also, the electricity generated by solar PV system was supplied to the Central Energy System of Mongolia which is a part of national grid. It was confirmed by the "Power Purchase Agreement (Ref.3-6-2)" and interviews with PPs.

A.3:

Location was confirmed by interviews with PPs and checking "Google map with latitude and longitude information" and the reference of location of project which was submitted by Land department of region/province (Ref. 3-2).

A.4:

PPs of both countries were confirmed by interviews and checking the Modalities of communications (MoC) (Ref.8-1).

A.5:

"Expected operational lifetime of project (17 years)" was checked and confirmed by the document of legal durable years under the regulation of Japan (Ref.3-4).

"Starting date of project operation" was checked in the section C.10.

A.6:

Financial support by the Ministry of the Environment, Japan was confirmed by checking "Financing programme for JCM model projects (Ref.3-5)".

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team assessed the project description provided in the PDD.

Validation team confirmed that the description of the proposed project in the PDD was accurate and complete, and was understandable for the proposed project activity.

C.3. Application of approved methodology(ies)

<Means of validation>

Approved methodology "MN_AM003, Installation of Solar PV system, Version 2.0" was applied to the proposed project. The methodology was approved by the Joint Committee on 30 January 2017, and valid as of the time of the validation.

Validation team assessed if the project is eligible for applying selected methodology.

Validation team conducted the assessment for each criterion with the step below by following "JCM Guidelines for Validation and Verification (Ref.13)".

- Document review was conducted using the checklist based on the "JCM Guidelines for

Validation and Verification (Ref.13)".
- Interviews were conducted on 13 Jan.2021 and 5 Feb.2021.
Each criterion in the PDD was checked as follows during document review and interviews.

Criterion 1:
-Description specified in the methodology: "The project newly installs solar PV system(s)."
-Assessment for Criterion 1:
Specification of solar PV system described in the PDD was checked with the specification of solar PV equipment (Ref. 3-6-1), the document regarding grid connection (Ref. 3-6-2) and photos of equipment (Ref. 3-1) and through interviews with PPs.
The validation team confirmed that solar PV system described in the PDD was consistent with the actual equipment installed at proposed project.
Criterion 2:
-Description specified in the methodology: "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)."
-Assessment for Criterion 2:
Criterion 2 was checked with "Specification of solar PV system (Ref. 3-6-1)" and "Certificate for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2) (Ref.3-7)". Validation team confirmed that solar PV module installed in this project obtained design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2), and the proposed project satisfied the eligibility criterion 2.
Criterion 3:
-Description specified in the methodology: "The equipment used to monitor output power of the solar PV system(s) and irradiance is installed at the project site."
-Assessment for Criterion 3:
The equipment to monitor the output power of solar PV system and the irradiance were checked by relevant documents and through interviews via internet. Electrical power meter of solar PV system was checked by photos of equipment (Ref.3-1), "Specification of electrical power meter (Ref.3-8-1)" and online inspection to confirm the actual position of them. Also, pyranometer was checked by interviews, photos of equipment (Ref.3-1) and "Specification of pyranometer (Ref.3-8-2)".
Validation team confirmed that the equipment to monitor output power of the solar PV system and irradiance was installed at the proposed project site, and the proposed project satisfied the eligibility criterion 3.
<Findings>
Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team assessed the application of approved methodology of the proposed project with the supporting documents, interviews and online inspection. Validation team confirmed the proposed project was in compliance with the eligibility criterions listed in the applied methodology.

Validation team confirmed that the proposed project was eligible for applying selected methodology " Installation of Solar PV system, Version 2.0", and that the applied methodology was valid at the time of submission of the proposed project for the validation.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

The electricity generated by solar PV system is supplied to the national grid in Mongolia to replace existing electricity generation. Reference emissions are calculated using the quantity of the electricity generated by the project solar PV system. Emission sources of the reference emissions are consumption of grid electricity.

Validation team confirmed that relevant GHG emission sources and parameters to be fixed ex ante in the applied methodology were addressed in the PDD. Also, validation team checked the calculation of emission reductions with reference. Validation team conducted the assessment for GHG emission sources with the step below by following JCM Guidelines for Validation and Verification (Ref.13).

- Document review was conducted using the checklist based on the “JCM Guidelines for Validation and Verification (Ref.13)”.
- Interviews were conducted on 13 Jan.2021 and 5 Feb.2021.

The description of the PDD including Monitoring spreadsheet was checked during document review and interviews to confirm the emission sources and calculation of emission reductions. The emission sources were confirmed by checking “Specification of solar PV system (Ref.3-6-1)”, interviews with PPs, photos of equipment (Ref.3-1) and the document regarding grid connection (Ref. 3-6-2). In addition, validation team checked the emission source that was not addressed by the applied methodology. Inverter for solar PV system consumes AC grid power when solar power is not available. Validation team confirms inverters consume 15.3 kW in total when solar power is not available. Validation team confirmed that it was identified no significant emission source that would be affected by implementation of the proposed project but not addressed by the applied methodology.

Validation team confirmed that the value of “Reference CO2 emission factor based on the

national grid (CES) (0.797 tCO2/MWh)" in the applied methodology was used in the PDD appropriately.
The estimated quantity of electricity generated by solar PV system was calculated with "Reference regarding estimated solar PV output (Ref.3-9)". The estimated quantity of electricity generated by the proposed project was checked by validation team. CAR2 was raised to revise the emission reductions of 2019 described in the PDD.
Validation team confirmed that project emissions, reference emissions and emission reductions for the proposed project were calculated properly.
<Findings>
Please state if CARs, CLs, or FARs are raised, and how they are resolved.
The following CAR2 was raised to revise the PDD.
CAR2:
The emission reductions of 2019 described in the PDD was calculated by monthly base. Validation team requested to estimate the emission reductions of 2019 in daily base.
⇒Summary of Response and Validation team Conclusion：
The description of the PDD was revised by PP. Validation team confirmed that the description of C.3. in the PDD is accurate, and consistent with the "Reference regarding estimated solar PV output (Ref.3-9)".
CAR2 was closed.
<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.
Validation team confirmed that:
-All relevant GHG emission sources covered in the approved methodology were addressed for the purpose of calculating project emissions and reference emissions for the proposed project ;
-The values for project specific parameters to be fixed ex ante listed in the Monitoring Plan Sheet were appropriate;
- The Monitoring Spreadsheet was not altered and its required fields were appropriately filled in;
-The emission sources and GHG types were confirmed through the interviews and document review;
- Significant emission sources which were not addressed by the applied approved methodology and would be affected by implementation of the proposed project were not identified;
-The approved methodology was applied correctly to calculate project emissions and reference emissions.

C.5. Environmental impact assessment

<Means of validation>

PDD stated that an Environmental Impact Assessment (EIA) was required by Mongolian laws and regulations. EIA Report (Ref.4) was submitted to Ministry of Environmental, Mongolia and it was evaluated in line with Mongolian procedure. Validation team checked the evaluation result of EIA Report (Ref.4) and had the interviews with local PP. It was confirmed that there were no remaining negative issues regarding the proposed project.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the PP conducted EIA in line with procedure as required by Mongolia.

C.6. Local stakeholder consultation

<Means of validation>

The place of project activity is in Khushing Khundii, near New Ulaanbaatar International Airport. The green field was prepared for installing equipment of solar PV system. PPs identified the relevant government agencies and utility company as local stakeholders for the project activity. The stakeholder consultation meeting was informed to relative stakeholders by sending invitation letter. Validation team checked "Local stakeholder consultation Meeting memo (Ref.5)". Comments at the local stakeholder consultation meeting were all supportive and no negative comment received.

Also, interviews with Mongolia PP and Japan PP were conducted on 5 February 2021. Validation team interviewed two people of Tenuun Gerel Construction LLC (TGC). One out of two people was attended to the local stakeholder consultation. Validation team confirmed the comment was supportive, and satisfied with the project activity which have an opportunity to reduce the usage of electricity.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the PPs invited comments to the proposed project from the relevant local stakeholders, and the summary of the comments received was described in the PDD appropriately.

C.7. Monitoring

<Means of validation>

The description of the PDD including monitoring plan was checked as follows during document review and interviews to confirm the Monitoring. Monitoring plan is consisted of the Monitoring Plan Sheet and Monitoring Structure Sheet.

The description of Monitoring Plan Sheet was checked with the approved methodology. Monitoring points for measurement were checked by interviews via internet and "Specification of electrical power meter of the solar PV system (Ref.3-8-1)". The proposed project has two monitoring points for the proposed project. Total quantity of the electrical power generated by the proposed project is measured by two electricity meters. The description of Monitoring Plan Sheet was checked raising CAR1 and CL1.

CAR1 was raised to revise the description of the accuracy described in the Monitoring Plan Sheet. Also, CL1 was raised to confirm the description of monitoring procedure (Ref.12-1).

The electricity meters were installed according to "Power Purchase Agreement (Ref.3-6-2)" signed between National Dispatching Center LLC and PP (TGC). The electricity meter was selected in accordance with the requirement of National Dispatching Center (NDC) and Mongolian Agency for Standard and Metrology. (NDC is a public corporation established to manage and operate the electrical power system of Mongolia.) Certificate of the electricity meter was confirmed with the Energy meter Certification which was issued by Mongolian Agency for Standard and Metrology (Ref.11). And the Certification states that the certification is valid till 26 Oct 2026(for eight years).

Monitoring structure was confirmed by interviews with the Project Manager/Monitoring Staff /Representative Participant described in the Monitoring Structure sheet. Validation team confirmed the role and responsibility for monitoring were assigned to the personnel in accordance with the Monitoring Structure sheet. Also, measuring record was checked with "Monitoring data of electricity generation (Data via SCADA) (Ref. 3-3)". Electrical power generated by solar PV system is recorded automatically via SCADA system. Validation team confirmed that two electricity meters of monitoring points are connected to SCADA system by checking the drawing of SCADA Topology (Ref.3-6-1). As the result of daily data from SCADA, "Monthly spread sheet (Ref.12-2)" is made for the monitoring. Also, it is recorded using "Daily report (Ref.12-3)" by operator manually. The result of manual recording is used when the data by SCADA is not available.

Validation team confirmed that PPs have the ability to implement the monitoring plan described in the Monitoring Plan Sheet and Monitoring Structure Sheet.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

The following CAR1 and CL1were raised to check the Monitoring Plan.

CAR1:

The accuracy of installed electricity meters was 0.2S by checking the test report of electricity meters (Ref.11). However, the description of "Measurement methods and procedures" in the PDD Monitoring Plan Sheet is not consistent with the actual accuracy. The description of the accuracy described in the Monitoring Plan Sheet should be checked and revised.
⇒Summary of Response and Validation team Conclusion：
The description of the PDD Monitoring Plan Sheet was revised by PP. Validation team confirmed that the description was consistent with the actual accuracy requirement.
CAR1 was closed.

CL1:
It is necessary to check the "monitoring procedure" for the proposed project to confirm the way to implement the monitoring plan. Please submit the documents and records of "monitoring data" of electricity.
⇒Summary of Response and Validation team Conclusion：
"Monitoring procedure (Ref.12-1)" was submitted by PP. And the Monitoring procedure was revised to consistent with the actual monitoring by the result of interviews with PPs. Also, "Monitoring data of electricity generation (Data via SCADA) (Ref. 3-3)", "Daily report (Ref.12-3)" and "Monthly spread sheet (Ref.12-2)" were submitted as a record of monitoring.
CL1 was closed.
<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.
Validation team confirmed that the Monitoring Plan was described in compliance with the approved methodology and "JCM Guidelines for developing PDD and MR (Ref.14)".
Also, PPs have demonstrated the ability to implement the described monitoring plan including feasibility of monitoring structure.

C.8. Modalities of Communication

<Means of validation>
Modalities of communications (MoC) was developed using the form of "JCM_MN_F_MoC_ver02.0". Validation team confirmed that the latest form was used for MoC.
Validation team ensured that the "MoC (Ref.8-1)" was received from Sharp Energy Solutions Corporation with whom JMA has a contractual relationship. Also, Validation team assessed the corporate identity of all project participants and a focal point, as well as the personal identities including specimen signatures and employment status of the authorised signatories through reviewing the "Written confirmation from Sharp Energy Solutions Corporation (Ref.8-2)".
In addition, validation team confirmed the corporate information of PPs by interviews with all

PPs.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the "MoC (Ref.8-1)" was completed using the latest form. Also, validation team confirmed the "MoC (Ref.8-1)" had been completed correctly in compliance with the requirements of the "JCM Guidelines (Ref.13, 15)".

C.9. Avoidance of double registration

<Means of validation>

"Modalities of communications (MoC) (Ref.8-1)" indicates that the proposed project is not registered under other international climate mitigation mechanisms. In addition, the following websites of CDM, JI and VCS were checked whether the projects with similar technology and location had been registered.

1) Website of UNFCCC (Project Search for CDM, JI Projects)

2) Website of IGES (IGES CDM Project Database, IGES JI Project Database)

3) Website of Verified Carbon Standard

Validation team confirmed that there was no registered project with similar technology and location.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No CAR, CL, or FAR were raised for this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the proposed JCM project was not registered under other international climate mitigation mechanisms.

C.10. Start of operation

<Means of validation>

"Start of operation date" described in the PDD was checked by raising CL2. Validation team confirmed that solar PV system for this proposed project had completed completion of commissioning at site by "COD (Commercial Operation Date) certificate (6 Jul.2019) (Ref.3-3)". Also, the monitoring data of electricity generation on 6 Jul.2019 (Data via SCADA) (Ref.3-3)" was submitted as the response of CL2.

Validation team confirmed the "Start of operation date" by interviews and checking references

(Ref.3-3).

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

The following CL2 was raised to check the “Starting date of project operation”.

CL2

It is necessary to confirm the “Start of operation date” for this proposed project.

Please submit the documents or records as the evidence of “Starting date of project operation”.

⇒Summary of Response and Validation team Conclusion：

The “monitoring data of electricity generation on 6 Jul.2019 (Ref.3-3)” was submitted by PP.

Validation team confirmed that the operation of solar PV system had started power generation and connected to the grid for commercial operation on 6 Jul.2019.

CL2 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the "Start of operation date" of the proposed project was 6 Jul.2019 for proposed project as described in the PDD. "Start of operation date" for the proposed project is not before January 1, 2013. Hence, validation team confirmed that the proposed project satisfied the requirement of the “JCM Guidelines (Ref.15)”.

C.11. Other issues

<Means of validation>

No other issue was identified.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Not applicable

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Not applicable

D. Information on public inputs

D.1. Summary of public inputs

In line with the Joint Crediting Mechanism Project Cycle Procedure (JCM_MN_PCP_ver06.0) (Ref.15), the PDD is to be made publicly available for 30 days to invite public comments. The PDD was made publicly available for the period of 19 Feb. 2021 to 21 Mar.2021 on the following URL.

https://www.jcm.go.jp/mn-jp/information/405

D.2. Summary of how inputs received have been taken into account by the project participants

No comment was received during the period to receive public inputs.
Hence, no action was required to be taken by the PPs to satisfy the requirement of JCM Project Cycle Procedure (Ref.15).

E. List of interviewees and documents received

E.1. List of interviewees

Tenuun Gerel Construction LLC
Mr. Odbaatar Sukhbaatar
Mr. Bolortsom Ulziijargal
Sharp Energy Solutions Corporation
Ms. Yoko Takamoto
Ms. Shoko Fukahori

E.2. List of documents received

Ref.1: Project Design Document for JCM project " Introduction of 15MW Solar Power System near New Airport "
Ref.2: Approved Methodology "Installation of Solar PV System, Ver. 02.0 "
Ref.3-1 ： Photos of equipment
・ Photos of the installation situation of solar power system(PV modules (ND-AF320), Electricity meter, and pyranometer)
Ref. 3-2 ： Reference of Location of project which was submitted by Land department of region/province, issued on 16 Apr.2019
Ref.3-3 ： Reference of "Starting date of project operation"
・ COD(Commercial Operation Date) certificate (6 Jul.2019, National Dispatching Center LLC)
・ Monitoring data of electricity generation on 6 Jul.2019 (Data via SCADA)
Ref.3-4 ： Reference of "Expected operational lifetime of project" (Japanese legal durable years for equipment of the electrical industry)

Ref.3-5：Financing programme for JCM model projects by the Ministry of the Environment, Japan
・Grant decisions for carbon dioxide emission control measures business subsidies 2017-2019 fiscal year, Issued by Global Environmental Centre Foundation, 1 Apr. 2019
Ref.3-6-1: Specification of solar PV system
・Equipment list for solar PV system, Specification of solar module, Technical specification for inverter, Single line diagram, SCADA Topology
・Installation layout drawing for PV modules, inverters, output power meters, and pyranometers (Solar Power Plant in New Airport)
Ref.3-6-2：Reference regarding grid connection(Power Purchase Agreement made between National Dispatching Center LLC and Tenuun Gerel Construction LLC, Ulaanbaatar 2016)
Ref.3-7：Certificate for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2) Date of issue:18 Oct.2018
Ref.3-8-1：Specification of output power meter of the solar PV system,
Energy Meter Certification (26 Oct.2018, Mongolian Agency for Standard and Metrology)
Ref.3-8-2：Specification of pyranometer
Ref.3-9：Reference regarding estimated solar PV output
Result of the estimated output power from the 15MW Solar PV system (SHARP CORPORATION)
Ref.4：Environmental Impact Assessment general assessment conclusion (Ministry of Environment, Green Development and Tourism of Mongolia (17 Nov.2015, issued to Tenuun Gerel Construction LLC)
Ref.5：Local stakeholder consultation (2 October 2018) Meeting memo
Ref.8-1: JCM Modalities of Communications Statement Form (Submitted on 27 Sep.2018)
Ref.8-2: Written confirmation from Sharp Energy Solutions Corporation (Declaration from Mr. Tatsuya Sato on 25 Feb.2021)
Ref.11:
・Energy meter Certification (26 Oct. 2018, Mongolian Agency for Standard and Metrology)
・Test report of electricity meters of monitoring points
Ref.12-1：Monitoring procedure issued on 23 Jan.2019
Ref.12-2：Monthly spread sheet
Ref.12-3：Daily report
Ref.13: Joint Crediting Mechanism Guidelines for Validation and Verification (JCM_MN_GL_VV_ver01.0)
Ref.14: Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_MN_GL_PDD_MR_ver03.1)
Ref.15: Joint Crediting Mechanism Project Cycle Procedure (JCM_MN_PCP_ver06.0)

Ref.16: Joint Crediting Mechanism Glossary of Terms (JCM_MN_Glossary_ver01.0)

Annex Certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers

Please attach certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers.

Certificate of Competence for Validation/Verification team

GHG Certification Center
Japan Management Association

Scheme:

The Joint Crediting Mechanism (JCM)

Project Title:

Introduction of 15MW Solar Power System near New Airport

Validation or Verification:

Validation

Name	Qualification*1	Leader/Member/ Technical expert/ Technical Reviewer(TR)	Qualification of Technical area *2	JCM scheme competence
Mr. Kenji Suzuki	Lead Validator/ Verifier	Leader	☑	☑
Mr. Masao Tomizawa	Validator/ Verifier	Member	☑	☑
Competence of Validation Team	-	-	☑	☑

*1 Qualification in accordance with "JMACC's Procedures for Contract and Evaluation of Validators/Verifiers and Technical Experts (GA-110)"

*2 Competence Requirement in accordance with Competence for Technical area sheet (GA-110-08)

Date 10 Dec. 2020

[redacted]

Kenji Suzuki
Director of Validation & Verification Dept.
GHG Certification Center
Japan Management Association

Certificate of Competence for Technical Review team

GHG Certification Center
Japan Management Association

Scheme:

The Joint Crediting Mechanism (JCM)

Project Title:

Introduction of 15MW Solar Power System near New Airport

Validation or Verification:

Validation

Name	Qualification*1	Leader/Member/ Technical expert/ Technical Reviewer(TR)	Qualification of Technical area *2	JCM scheme competence
Mr. Motoyuki Matsumoto	Lead Validator/ Verifier	Technical Reviewer	☑	☑
Competence of Technical Review Team	-	-	☑	☑

*1 Qualification in accordance with "JMACC's Procedures for Contract and Evaluation of Validators/Verifiers and Technical Experts (GA-110)"

*2 Competence Requirement in accordance with Competence for Technical area sheet (GA-110-08)

Date 10. Dec. 2020

[redacted]

Kenji Suzuki
Director of Validation & Verification Dept.
GHG Certification Center
Japan Management Association