JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Installation of 2.1MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
Reference number	MN003
Third-party entity (TPE)	Japan Management Association (JMA)
Project participant contracting the TPE	Farmdo Co., Ltd.
Date of completion of this report	15 March 2017

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	☒

Item	Validation requirements	No CAR or CL remaining
	project.	
Monitoring	The description of the Monitoring Plan (Monitoring Plan 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: Yasui	First name: Ryouichi	
Title: Senior Executive of GHG Certification Center, JMA		
Specimen signature: [redacted]	Date: 15/03/2017	

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. ☐	Motoyuki Matsumoto	JMA	Team Member	☒	Technical competence qualified	☒
Mr. ☒ Ms. ☐	Toshiaki Takeda	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_ver03.0) (Ref.14) ".

Review history of the PDD is as follows.

- PDD version 1: PDD was submitted to JMA on 13th Jan.2017.
- PDD version 2: PDD was revised on 31th Jan. 2017 based on the document review by validation team.
- PDD version 3: PDD was revised on 16th Feb. 2017 based on the on-site assessment.
- PDD version 4: PDD was revised on 9th Mar. 2017 to resolve the remaining issues. PDD version 4 (Ref.1) is final version.

The latest version of the PDD form (JCM_MN_F_PDD_ver03.0) 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 (Ref.1). 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 (Ref.14)".

C.2. Project description

<Means of validation>

The proposed project is to install new solar PV system in Mongolia.

Validation team conducted the assessment with the step below by following “JCM 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)”. CARs and CLs were raised and informed to project participants (PPs).
- Follow-up interviews and on-site assessment were conducted.
- Remaining issues including the response of CARs and CLs were checked with reference.

Each section in the PDD was checked as follows through document review and on-site assessment 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 part of electrical power from the national grid. Validation team confirmed that explanation of how the proposed project reduces greenhouse gas emissions was described in the PDD.

CAR1 and CAR2 were raised for the description of the PDD and attachment. The description of the PDD was corrected through the response of CARs. Also, CL1 was raised for checking the output MW of solar PV system. As a result of raising CL1, validation team checked the solar PV system described in the PDD with “Specification of solar PV system (Ref.3-1-1)”. On-site assessment was conducted on 15-16 Feb.2017. Validation team confirmed that solar PV system was installed at the project site.

A.3:

CAR3 was raised to correct the information of Latitude and Longitude described in the PDD.

Location was confirmed by GPS through on-site visit to proposed project site and interviews with PPs.

A.4:

PPs of both countries were confirmed by interviews, on-site assessment and checking the "Modalities of communications (MoC) (Ref.8-1)" and "Organization structure of PPs (Ref.7)".

A.5:

"Expected operational lifetime of project (20 years)" was checked and confirmed by raising CL2.

"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 "Grant decisions for JCM project (Ref.3-5)". Also, the telemeter system (monitoring system) described in the PDD was confirmed with the "Specification of remote monitoring service for solar PV system (Ref.11)".

<Findings>

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

The following CARs and CLs were raised to check the project description of the PDD.

CAR1:

Title of the PDD is different from the title of the MoC. Please correct the title of the PDD or MoC.

⇒Summary of Response and Validation team Conclusion：

PP corrected the title of the PDD. The title of the PDD was consistent with the title of the MoC. CAR1 was closed.

CAR2:

Some parts of the attachment of the PDD are written in Japanese only. It is necessary to describe it in English.

⇒Summary of Response and Validation team Conclusion：

The attachment of the PDD was deleted. CAR 2 was closed.

CAR3:

Information of Latitude and Longitude are incorrect. (The value of Latitude is described as Longitude and vice versa.)

⇒Summary of Response and Validation team Conclusion：

Information of Latitude and Longitude was corrected. CAR3 was closed.

CL1:

It is necessary to confirm the output MW of solar PV modules and inverters. Please submit the specification of solar PV system such as solar PV modules and inverters.

⇒Summary of Response and Validation team Conclusion：

"Specification of solar PV system (Ref.3-1-1)" was submitted by PP. In addition, the description of the PDD was revised to correct the output MW of solar PV modules. Although 2.1 MW solar PV system was planned before, validation team confirmed that 2.3 MW output of solar PV modules (and 2.2 MW output of inverters) was installed at the proposed project site. CL1 was closed.

CL2:
It is necessary to confirm the "Expected operational lifetime of project (20 years)" described in the PDD. Please submit the reference of expected operational lifetime (20 years) for proposed project.
⇒Summary of Response and Validation team Conclusion：
"Expected operational lifetime of project" was explained by PP.
- Power Purchase agreement including feed-in tariff is for 20 years in Mongolia. (Ref.3-2)
- Warranty period of Limited Power Output Warranty is 25years (Ref.3-4). It is more than 20 years.

Also, the warranty period of inverters is 5years (Ref.3-4) for this project. The inverters are maintained including exchange of the equipment. Validation team confirmed it with interview with PP.
CL2 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team assessed the project description provided in the PDD with supporting documents and on-site visit. As a result of raising CAR1, CAR2, CAR3, CL1 and CL2, additional supporting documents were submitted and the project description was revised appropriately.
Validation team confirmed that the description of the proposed project in the PDD was accurate and complete, and provided an understanding of the proposed project.

C.3. Application of approved methodology(ies)

<Means of validation>

Approved methodology "Installation of Solar PV System, Ver. 02.0 (JCM_MN_AM003_ver02.0) (Ref.2)" was applied to the proposed project. The methodology was approved by the Joint Committee on 30th Jan. 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)".
- Follow-up interviews and on-site assessment were conducted on 15-16 Feb.2017.

Each criterion in the PDD was checked as follows through document review and on-site assessment.

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 "Specification of solar PV system (Ref.3-1-1)". Also, installed solar PV system was checked by on-site inspection and interviews with PPs.

Validation team confirmed that solar PV system described in the PDD was consistent with the actual equipment installed at site, and the proposed project satisfied the eligibility criterion 1.

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. 3-1-1)" and "Certificate for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2) (Ref.3-6)". Validation team confirmed that solar PV module installed have 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 irradiance was checked through on-site assessment. Electrical power meter of solar PV system was checked by on-site inspection and "Specification of electrical power meter (Ref.3-1-2)". Also, pyranometer was checked by on-site inspection and "Specification of pyranometer (Ref.3-1-3)".

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 and on-site visit. 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, Ver. 02.0 (Ref.2)", 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 solar PV system. Emission sources of the reference emissions are consumption of grid electricity.

Validation team confirmed that relevant GHG emission sources, GHG types 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 and GHG types 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)".
- Follow-up interviews and on-site assessment were conducted on 15-16 Feb.2017.
- Remaining issues including the response of CL3 and CAR4 were checked with reference.

The description of the PDD including Monitoring spreadsheet was checked through document review and on-site assessment to confirm the emission sources and calculation of emission reductions.

The emission sources were confirmed by checking "Specification of solar PV system (Ref.3-1-1)", interviews with PPs, and on-site inspection.

Solar PV system will be connected to the national grid (the Central Grid). It was confirmed by "Electrical Power Purchase agreement (Ref.3-2)". Also, validation team confirmed that there was no captive power generator in internal grid through on-site inspection.

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.
Also, the estimated quantity of electrical power generated was checked by validation team. The estimated electrical power was calculated using the format for the application of carbon dioxide emission control measures business subsidies ("Reference regarding estimated solar PV output (Ref.9)"). CL3 was raised to check the output MW of PV modules used in the estimated solar PV output calculation. As a result of raising CL3, validation team confirmed that the estimated solar PV output was re-calculated using the latest specification of solar PV modules. Also, CAR4 was raised because the emission sources for project emissions described in the PDD were inconsistent with the applied methodology.
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 1.65kW when solar power is not available. It is a very few electrical consumption compared to the installed solar PV capacity (2,301.6kW), and it consumes for night time only. Validation team confirmed that there was 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 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 CL3 and CAR4 were raised to check the emission reductions of the PDD.

CL3:

The output MW of PV module used in the estimated solar PV output is different from the specification of solar PV module. PP needs to clarify the data of the output MW of PV module used for the calculation of estimated solar PV output.

⇒Summary of response and validation team conclusion

PP checked the specification of the output MW of PV module, and the estimated solar PV output was re-calculated using the latest specification of solar PV modules. Also, the GHG emission reductions were revised according to the estimation. Validation team confirmed that the output MW of PV module used for the calculation of "Estimated Emission Reductions" is consistent with the specification of solar PV module installed.

CL3 was closed.

CAR4:

Emission sources for Project emissions described in the PDD are inconsistent with the applied methodology.

⇒Summary of response and validation team conclusion

PP revised the PDD according to the applied methodology. CAR4 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 on-site assessment 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.4-2) was submitted to Ministry of Environment, Green Development and Tourism of Mongolia, and it was evaluated in line with Mongolian procedure. Validation team checked the evaluation result of EIA Report (Ref.4-1), and it was confirmed that there were no negative comments and specific mitigation measures regarding to 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>

PPs conducted a stakeholder consultation meeting of this project activity to solicit comments from local stakeholders on 3-4th October 2016.

The place of project activity is in the suburbs of Ulaanbaatar. The green field was prepared for installing equipment of solar PV system, and the project site was surrounded by fence or wall. PPs identified the relevant government agencies, neighbors of project site, and subcontractors as local stakeholders for the project activity. The stakeholder consultation meeting was informed to relative stakeholders by sending invitation letter via e-mail and telephone to invite to the meeting. 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, on-site assessment was conducted on 15-16 February 2017. As one of the on-site assessment processes, validation team interviewed the person of National Dispatching Center limited liability company (NDC). Validation team confirmed the comment was supportive, and satisfied with the project activity which had an opportunity to increase the renewable energy.

<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. Also, validation team confirmed that the local stakeholder consultation of the proposed project was adequate.

C.7. Monitoring

<Means of validation>

The description of the PDD including monitoring plan was checked as follows through document review and on-site assessment to confirm the Monitoring. Monitoring plan consists of the Monitoring Plan Sheet and Monitoring Structure Sheet.

The description of Monitoring Plan Sheet was checked with the approved methodology. Monitoring point for measurement was checked by on-site inspection and "Specification of electrical power meter for monitoring point No.1 (Ref.3-1-2)".

The description of chapter (h) of table 1 in Monitoring Plan Sheet was checked as follows.

The electrical power meter was installed according to "Electrical Power Purchase agreement (Ref.3-2)" signed between PP and NDC. (NDC is a public corporation established to manage and operate the electrical power system of Mongolia.) Hence, the electrical power meter was selected by the requirement of NDC. According to the requirement of NDC, same type of electrical power meter was installed both at solar power system (which is monitoring point No.1) and at substation to connect to national grid. Also, the description about electrical power

meter of table 1 in Monitoring Plan Sheet (Input sheet) was checked by raising CL4.
Monitoring structure was confirmed by interviews with the following people described in the Monitoring Structure sheet.
- Project manager, Facility manager, Operator
Validation team confirmed the role and responsibility for monitoring were assigned to the personnel in accordance with the Monitoring Structure sheet.
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 CL4 was raised to check the Monitoring Plan.
CL4:
It is necessary to confirm the description about electrical power meter of the table 1 in Monitoring Plan Sheet. Please submit the references for certification and calibration period of electrical power meter.
⇒Summary of Response and Validation team Conclusion：
Total quantity of the electrical power generated by the proposed project is measured by electrical power meter. Validation team confirmed that electrical power meter was installed in accordance with the “Electrical Power Purchase agreement (Ref.3-2)”. Also, “Certification of test report of Electricity meter (Ref.6)” was attached to the electrical power meter. It was confirmed that the electrical power meter was certified for the assurance of electrical power measurement by Mongolian Agency for Standardisation and Metrology. Validation team confirms that this certification is valid for 8 years which is until 11th Nov. 2023.
Also, monitoring procedure and format for measuring record were checked with “Monitoring flow (Ref.12)” and “Format of measured data recording of electrical power meter (Ref.10)”.
It was confirmed that the description of table 1 in Monitoring Plan Sheet (Input sheet) was revised appropriately.
CL4 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.

MoC was submitted by Farmdo Co.,Ltd. (Farmdo). Validation team ensured that the "MoC (Ref.8-1)" was received from Farmdo with whom JMA has a contractual relationship. 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 Farmdo (Ref.8-2)" and interviews with all PPs. Validation team confirmed that "Written confirmation (Ref.8-2)" was issued by Mr.Masayuki Iwai who is primary authorised by Farmdo in the "MoC (Ref.8-1)". "Written confirmation (Ref.8-2)" indicates that all corporate and personal details of MoC of the proposed project, including specimen signatures, are valid and accurate.

<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 that all corporate and personal details including specimen signatures were valid and accurate as requested in the "JCM Guidelines for Validation and Verification (Ref.13)".

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>

"Written confirmation (Ref.8-2)" indicates that the proposed project is not registered under other international climate mitigation mechanisms. Also, "Written confirmation (Ref.8-2)" was issued by Mr. Masayuki Iwai who is primary authorised by Farmdo Co.,Ltd in the "MoC (Ref.8-1)". 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)

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 CL5. On-site assessment was conducted on 15-16 Feb.2017. The references submitted as the response of CL5 were checked through on-site assessment. Validation team checked references of "Starting date of project operation (Ref.3-3)". Also, validation team had the interviews with an engineer of PP for installation of solar PV systems to confirm the "Start of operation date".

<Findings>

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

The following CL5 was raised to check the "Starting date of project operation".

CL5:

It is necessary to confirm the "Start of operation date" for 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 following references for "Starting date of project operation (Ref.3-3)" were submitted by PP.

1)Project schedule (Installation schedule) (21 Jun. 2016)

2)Letter from SMA Solar Technology AG (17 Jan. 2017)

3)Letter from National Power Transmission Grid company (2 Feb. 2017)

4)Letter from Ministry of Energy (14 Sep. 2015, No.122)

Starting date of project operation was postponed to 1 June 2017. The reason was explained with the references above (Ref.3-3-1)～4)).

At first, the inverters were supposed to install at the end of October 2016 (Ref.3-3-1)). However, the shipment of inverters was delayed. Validation team confirmed the letter from the inverter manufacturer (Ref.3-3-2)) to apologize for the delayed shipment. Finally, the inverters were installed at the middle of Feb 2017, and the inverters installed were confirmed through on-site inspection (15-16th Feb.2017). Also, validation team confirmed the electric power line from solar PV system to substation for connecting national grid was not connected yet. The cable connecting construction was delayed because of the delayed shipment of the inverters. The letter from National Power Transmission Grid company (Ref.3-3-3)) mentioned that the

heat supply could not stop during winter period which is until the 1st of May with referring the letter from Ministry of Energy (Ref.3-3-4)). Hence, the cable connecting construction work can not be started during winter period because the power can not be shut down by the construction work.

Validation team confirmed that the starting date of project operation was postponed, and the starting date was scheduled to be 1st of June 2017 by considering the period of construction work.

CL5 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 scheduled to be 1st of June 2017 as described in the PDD. "Start of operation date" is not before 1st January 2013. Hence, validation team confirmed that the proposed project satisfied the requirement of the "JCM Guidelines (Ref.13, 14, 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_ver04.0) (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 9 Feb. 2017 to 10 Mar.2017 on the following URL.

https://www.jcm.go.jp/mn-jp/projects/21

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

National Dispatching Center limited liability company:
Mr.Turbat Banzagch

Farmdo Co.,Ltd.:
Mr.Yoshiaki Arai
Mr.Kazuhiro Niida

Bridge LLC:
Mr.Batzorig Ulziidelger
Ms.Lkhamsuren Buyan

Everyday Farm LLC:
Mr.Rentsondoo Jigjid
Mr.Munkhbayasgalan Enkhtuvshin
Ms.Batchimeg Nergui

RECS International Inc.:
Mr.Ken Kozai

E.2. List of documents received

Ref.1: Project Design Document for JCM project
-1st Edition : PDD was submitted as first version.(13 Jan.2017)
-2nd Edition: PDD was revised and submitted to the secretariat of JCM for public. (31 Jan.2017)
-3rd Edition : PDD was revised by the result of document review and on-site assessment. (16 Feb.2017)

-4th Edition : PDD was revised to resolve the remaining issues. (3 Mar.2017)
Ref.2: Approved Methodology "Installation of Solar PV System, Ver. 02.0 "
Ref.3-1-1: Specification of solar PV system
1) Specification of solar PV module (27 Nov.2015, Jinko Solar Japan K.K.) and Delivery completion report (28 Sep.2016, Hitachi Systems, Ltd.)
2) Single line diagram (18 Aug.2016, US Engineering)
3) Specification of power conditioner (MV Power Station 2000SC, SMA Solar Technology (www.SMA-Solar.com))"
Ref.3-1-2 : Specification of electrical power meter for monitoring point No.1:
A1800 ALPHA® meter style numbers (elster (www.elster.com))
Ref.3-1-3: Specification of pyranometer of the solar PV system (Delta OHM)
Ref.3-2: This Electric Power Purchase Agreement
(8 Jun.2016, National Dispatching Center limited liability company and Everyday farm LLC)
Ref.3-3: Reference of "Starting date of project operation":
1)Project schedule (Installation schedule) (21 Jun. 2016)
2)Letter from SMA Solar Technology AG (17 Jan. 2017)
3)Letter from National Power Transmission Grid company (2 Feb. 2017)
4)Letter from Ministry of Energy (14 Sep. 2015, No.122)"
Ref.3-4: Reference of "Expected operational lifetime of project":
1)Limited Warranty for Solar PV module (JKM280M-60-J)
(Warranty period of Limited Power Output Warranty (25years)) (24 Oct.2016, Jinko Solar Japan K.K.)
2)SMA manufacturer's Warranty (SMA Solar Technology)
Ref.3-5: Grant decisions for carbon dioxide emission control measures business subsidies 2015-2017 fiscal year, Issued by Global Environment Centre Foundation, 1 Apr. 2016）
Ref.3-6: Certificate for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2):Test Report (Dec. 2014, TÜ V Report No.:15038417.099)
Ref.4-1: Evaluation result of Environmental impact assessment report (17 Nov.2015, Ministry of Environment, Green Development and Tourism of Mongolia)
Ref.4-2: Environmental impact assessment report (2015, Everyday Farm LLC)
Ref.5: Local stakeholder consultation (3-4 Oct.2016) Meeting memo
Ref.6: Certification of test report of Electricity meter (11Nov.2015, Mongolian Agency for Standardisation and Metrology)
Ref.7: Organization structure of PPs
1) Organization structure of Everyday Farm LLC (5 Jan.2017)
2) Organization structure of Bridge LLC (Sep.2016)"
Ref.8-1: JCM Modalities of Communications Statement Form (Submitted on 7 Feb.2017)

Ref.8-2: Written confirmation from Farmdo Co.,Ltd (Declaration from Mr.Masayuki Iwai on 7 Feb.2017)

Ref.9: Reference regarding estimated solar PV output (Date:16 Feb.2017)

Ref.10: Format of measured data recording of electrical power meter (Prepared by Farmdo Co.,Ltd)

Ref.11: Specification of remote monitoring service for solar PV system (8 Aug.2016, Hitachi Systems, Ltd.)

Ref.12: Monitoring Flow (Prepared by Farmdo Co.,Ltd, Revised on 3 Mar.2017)

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_ver03.0)

Ref.15: Joint Crediting Mechanism Project Cycle Procedure (JCM_MN_PCP_ver04.0)

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:

Installation of 2.1MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb

Validation or Verification:

Validation

Name	Qualification*1	Leader/Member/ Technical expert/ Technical Reviewer(TR)	Qualification of Technical area (Renewables)*2	JCM scheme competence
Mr. Kenji Suzuki	Lead Validator/ Verifier	Leader	☑	☑
Mr. Motoyuki Matsumoto	Lead 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 16, Jan. 2017

[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:

Installation of 2.1MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb

Validation or Verification:

Validation

Name	Qualification*1	Leader/Member/ Technical expert/ Technical Reviewer(TR)	Qualification of Technical area (Renewables)*2	JCM scheme competence
Mr. Toshiaki Takeda	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 20. Feb. 2017.

[redacted]

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