JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Introduction of 1MW Rooftop Solar Power Systems to University
Reference number	CL001
Third-party entity (TPE)	Japan Management Association (JMA)
Project participant contracting the TPE	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING,Inc.
Date of completion of this report	22/03/2019

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 the Republic of Chile, in line with Chilean procedures.	☒
Local	The project participants have completed a local stakeholder	☒

Item	Validation requirements	No CAR or CL remaining
stakeholder consultation	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 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: Inoue	First name: Tadashi	
Title: Senior Executive of GHG Certification Center, JMA		
Specimen signature: [redacted]	Date: 22/03/2019	

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Motoyuki Matsumoto	JMA	Team Leader	☒	Technical competence qualified	☒
Mr. ☐ Ms. ☒	Toshimi Shidara	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>

PDDs (Ref.1) were checked using the "Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_CL_GL_PDD_MR_ver02.0) (Ref.14) ".

Review history of the PDD is as follows.

- PDD version 1: PDD was submitted to validation team on 25th Dec.2018.
- PDD version 2: PDD was revised on 23th Jan. 2019 based on the on-site inspection.
- PDD version 3: PDD was revised on 7th Mar. 2019 based on the on-site inspection.
- PDD version 4: PDD was revised on 22th Mar. 2019 to resolve the remaining issues. PDD version 4 (Ref.1-4) is final version. The latest version of the PDD form (JCM_CL_F_PDD_ver02.0) was checked at the website of New Mechanisms Information Platform for Chile. 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_CL_AM001_ver01.0) 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 developed 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 a total of new 992kW module capacity solar PV system in 4 university campuses in Chile.

Validation team conducted the assessment with the step below by following “JCM Guidelines for Validation and Verification (JCM_CL_GL_VV_ver01.0) (Ref.13)”.

- Document review was conducted using the checklist based on the “JCM Guidelines for Validation and Verification (Ref.13)”. CL1 was raised and informed to project participants (PPs).
- Follow-up interviews and on-site assessment were conducted.
- Remaining issues including the response of CL1 was 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 systems. The electrical power generated by the solar PV systems displaces the part of electrical power from the regional grid. Validation team confirmed that explanation of how the proposed project reduces greenhouse gas emissions was described appropriately in the PDD.

Validation team checked the solar PV systems described in the PDD with “Specification of solar PV system (Ref.3-1-1)”. On-site assessment was conducted on 17-18 Jan.2019. Validation team confirmed that the type of solar PV module described in the PDD was installed at the project sites. Also, the surpass electricity after the university consumption from solar PV systems will be supplied to the SIC grid. It was confirmed through the “Single line diagram (Ref.3-1-1-4))”, on-site assessment and interviews with PPs.

A.3:

Location was confirmed by GPS through on-site assessment 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 PP (Ref.3-7)".
A.5:
"Expected operational lifetime of project (17 years)" was checked and confirmed by raising CL1.
"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 by the Ministry of the Environment (Ref.3-5)".
<Findings>
Please state if CARs, CLs, or FARs are raised, and how they are resolved.
The following CL1 was raised to check the project description of the PDD.

CL1:
"Expected operational lifetime of project" is set for 17 years. PPs are required to clarify how to set for 17 years.

⇒Summary of Response and Validation team Conclusion :
PPs explained that "Expected operational lifetime of project" was decided based on the legal durable years under the regulation of Japan (17 years), and the guarantee period of PV panel degradation is 25years which is described in "Specification of solar PV module (Ref.3-1-1-2))". Also, PPs submitted the 5years guarantee document of "Conditions of guarantee of the invertors (Ref.3-4)" and explained that the inverters are maintained including exchange of the equipment.
Validation team confirmed that power purchase agreement is for 20 years through the "Memorandum of Understanding (Ref.3-2)", and "Expected operational lifetime of project" is in line with the references and interviews with PPs.
CL1 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 CL1, additional supporting documents were submitted.
Validation team confirmed that the description of the proposed project in the PDD was accurate and complete.

C.3. Application of approved methodology(ies)

<Means of validation>

Approved as a methodology "Installation of Solar PV System, Ver. 01.0 (JCM_CL_AM001_ver01.0) (Ref.2)" was applied to the proposed project. The methodology was approved by the Joint Committee on 19th Dec. 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 17-18 Jan.2019.

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 systems described in the PDD was checked with "Specification of solar PV system (Ref.3-1-1)". Also, installed solar PV systems at 4 campuses were checked by on-site inspection and interviews with PPs.

Validation team confirmed that solar PV systems described in the PDD was consistent with the actual equipment installed at the project 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.3-6-1)". 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 systems and the irradiance were checked through on-site assessment and "Specification of solar PV system (Ref. 3-1-1)". Electrical power meter of solar PV systems was checked by "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 systems will be installed, and pyranometer was installed at the proposed project site. Validation team confirmed that 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 that the proposed project was eligible for applying selected methodology "Installation of Solar PV System, Ver. 01.0 (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 systems will partly replace existing electricity generation from the regional grid. Reference emissions are calculated using the quantity of the electricity generated by the project solar PV systems. 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 regarding the estimated solar PV output "Spreadsheet for calculation of estimated solar PV output (Ref 9-1)". 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 17-18 Jan.2019.
- Remaining issues including the response of CAR1,2 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. The surpass electricity from the Solar PV systems after the university consumption will be supplied to the regional grid (SIC grid). CAR1 was raised because of the inconsistency between PDD and methodology. Validation team confirmed that there was no captive power generator for regular usage in internal grid, and the electricity is supplied by the regional grid through on-site inspection.

Validation team confirmed that the value of “Reference CO2 emission factor based on the regional grid (SIC) ” (0.314 tCO2/MWh) in the applied methodology was used in the PDD appropriately.

The estimated quantity of electricity generated by the proposed project was checked by validation team. The estimated quantity of electricity generated by solar PV systems was calculated with “Spreadsheet for calculation of estimated solar PV output (Ref 9-1)” and “Data source regarding estimated solar PV output(Ref.9-2)”, CAR2 was raised because of the request of the correction in the spreadsheet (Ref 9-1).

In addition, validation team checked the emission source that was not addressed by the applied methodology. Inverter for solar PV systems consumes AC grid power when solar power is not available. Validation team confirmed inverters consume less than 1W per one as night-time consumption through the “Specification of invertor (Ref.3-1-1-5))”. Through the references and on-site inspection, 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 CAR1,2 were raised to request the correction of the emission reductions of the PDD.

CAR1:

Grid name is inconsistent between the PDD and methodology. Also, grid is described as regional grid in the methodology, but described as national grid in the PDD.

⇒Summary of response and validation team conclusion

PPs corrected the description of PDD. Validation team confirmed that PPs corrected the description appropriately.

CAR1 was closed.

CAR2:
CAR2 was raised because of the request of the correction in the spreadsheet (Ref 9-1). In the spreadsheet (Ref.9-1), part of the electricity from the solar PV systems was deducted. However, all of the electricity from the solar PV systems will be consumed in this project.

⇒Summary of response and validation team conclusion
PPs deleted the volume deducted from the electricity from the solar PV systems in the spreadsheet (Ref 9-1). Validation team confirmed that PPs corrected the spreadsheet appropriately. 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 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>

PPs submitted the regulation document regarding the Approval of regulation of the system of evaluation of environmental impact (Ref.4). Validation team confirmed through this reference and interviews with PPs that EIA is required in case of more than 3MW power stations. In this project, the total capacity of PV modules is less than 1MW.. Therefore, validation team confirmed EIA is not required in this 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 proposed JCM project had no requirement of EIA.

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 21th Nov.2018.

In this project, solar PV systems are installed on the roof of the 4 university campuses. PPs identified the relevant university members as local stakeholders for the project activity. The stakeholder consultation meeting was informed to relative stakeholders by sending invitation 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 17-18 Jan.2019. As one of the on-site assessment processes, validation team interviewed with the relevant university staff and the comment was supportive.

<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 plan. 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 (Ref.3-1-2)". CAR3 was raised because of the inconsistency between the monitoring point drawn in PDD and the actual project site.

Total quantity of the electrical power generated by the proposed project is measured by electrical power meter. PPs submitted the “Regulation in Chile regarding replacement or calibration of electrical power meter (Ref. 3-6-2)”. Also, validation team confirmed that the accuracy of electricity ppower meter is class 0.5S which is described in “Specification of electrical power meter for monitoring point (Ref.3-1-2)” and that the replacement or calibration of the electrical power meter will be done every 10 years in line with the regulation through the interviews with PPs including the facility representative of the university.

Monitoring structure was confirmed by interviews 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.

At the validation, the monitoring system has not installed yet, therefore, validation team confirmed through the interviews with PPs and system specification (Ref. 3-1-1-3)) that monitoring systems will be installed at this project in line with the monitoring plan described in the PDD.
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 CAR3 was raised to request correction of the PDD.

CAR3：

Although the monitoring point was set at the every inverter in the PDD Ver.1 (Ref.1-1), validation team confirmed that actual monitoring points are set at the electrical power meters to monitor the aggregated output from the several inverters through the “Specification of solar PV system (Ref.3-1-1)”.

⇒Summary of Response and Validation team Conclusion：

PPs corrected the drawing in the PDD, and validation team confirmed that drawing is consistent with the references. CAR3 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_CL_F_MoC_ver01.0". Validation team confirmed that the latest form was used for "MoC (Ref.8-1)".

MoC was submitted by Waseda Environmental Institute Co.,Ltd (Waseda). 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 (Ref.8-2) from Waseda Environmental Institute Co.,Ltd " and interviews with PPs. Validation team confirmed that "Written confirmation (Ref.8-2)" was issued by Mr. Kenta Omura who is primary authorised by Waseda 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, 14,15)".

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. Kenta Omura who is primary authorised by Waseda in the "MoC (Ref.8-1)". In addition, the following websites of CDM and VCS were checked whether the projects with similar technology and location had been registered.

1) Website of UNFCCC (Project Search for CDM 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 through on-site assessment which was conducted on 17-18 Jan.2019 and reference. CL2 was raised to check the starting date.

<Findings>

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

The following CL2 was raised to check the project description of the PDD.

CL2:

Validation team confirmed that the proposed project had not started the power generation yet during on-site assessment, and the construction to install the web-system was delayed. Validation team requested to clarify whether the operation will be started on the day described in the PDD.

⇒Summary of response and validation team conclusion

PPs submitted the reference "Project Implementation Schedule (Ref.3-3) " and revised the starting date in the PDD appropriately. CL2 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that PPs rescheduled the starting date on 1st of May 2019 and the starting 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_CL_PCP_ver02.0) (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 7 Feb. 2019 to 8 Mar.2019 on the following URL. https://www.jcm.go.jp/cl-jp/projects/61

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 the requirement of JCM Project Cycle Procedure (Ref.15).

E. List of interviewees and documents received

E.1. List of interviewees

Universidad Tecnica Federico Santa Maria	Mr.Rafael Mena
Universidad Tecnica Federico Santa Maria	Mr.Jose Luis Aravato
Universidad Tecnica Federico Santa Maria	Ms.Veronica Diong
MGM Innova Capital Chile Spa	Mr.Alfredo Nicastro
MGM Innova Capital Chile Spa	Mr.Gonzalo Diaz
NTT DATA INSTITUTE OF MANAGEMENT CONSULTING,Inc.	Mr.Ikuya Ueda
Universidad Tecnica Federico Santa Maria	Ms.Veronica Diong
Universidad Tecnica Federico Santa Maria	Mr.Alesandro Miraouda
Universidad Tecnica Federico Santa Maria	Mr.Rene Villalobos

Panasonic	Mr.Carlos Morales
Universidad Tecnica Federico Santa Maria	Mr.Javier Vazgas caro
Universidad Tecnica Federico Santa Maria	Mr.Dario Liberona
Universidad Tecnica Federico Santa Maria	Mr.Humbuto Norambuena
Universidad Tecnica Federico Santa Maria	Mr.Tamara Anton
Universidad Tecnica Federico Santa Maria	Mr.Alfongo Castillo
Universidad Tecnica Federico Santa Maria	Mr.Bruno Dondevo
Universidad Tecnica Federico Santa Maria	Mr.Diego Maciean Guerna
Universidad Tecnica Federico Santa Maria	Mr.Sauien Egunen Aspe

E.2. List of documents received

1 Project Design Document for JCM project
1-1 1st Edition (25/12/2018) : PDD was submitted to the secretariat of JCM for public inputs.
1-2 2nd Edition (23/1/2019) : PDD was revised by the result of document review and on-site assessment.
1-3 3rd Edition (07/3/2019) : PDD was revised by the result of document review and on-site assessment.
1-4 4th Edition (22/3/2019) : PDD was revised by the result of document review and on-site assessment.
2 Approved as a methodology "Installation of Solar PV System, Ver. 01.0 "
3 Reference relating to PDD chapter A,B,C
3-1-1 Specification of solar PV system:
1) Facility list of the PV system
2) Specification of solar PV module (Panasonic)
3) Communication diagram (Panasonic)
4) Single line diagram (Panasonic)
5) Specification of invertor (Fronius)
6) Layout Drawing (Panasonic)
3-1-2 Specification of electrical power meter : METSEPM5110 (Schneider electric)
3-1-3 Specification of pylanometer at the installed site of the solar PV system Fronius
3-2 Memorandum of Understanding (3.Jul 2017, Universidad Tecnica Federico Santa Maria, MGM Innova Capital Chile Spa)
3-3 Project Implementation Schedule
3-4 Conditions of guarantee of the invertors (FRONIUS)

3-5 Financing programme for JCM model projects by the Ministry of the Environment, Japan (27/9/2017)

3-6-1 Certificate for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2) (Date of issue:6/10/2015)

3-6-2 Regulation in Chile regarding replacement or calibration of electrical power meter

3-7 Organization structure of PP

4 Approval of regulation of the system of evaluation of environmental impact (12.08.2013)

5 Local stakeholder consultation Meeting memo (21/11/2018)

8-1 Modalities of communications (MoC)

8-2 Written confirmation from Waseda Environmental Institute (Declaration from Mr. Omura)

9-1 Spreadsheet for calculation of estimated solar PV output (NTT DATA INSTITUTE OF MANAGEMENT CONSULTING,Inc.)

9-2 Data source regarding estimated solar PV output (Panasonic)

13 Joint Crediting Mechanism Guidelines for Validation and Verification (JCM_CL_GL_VV_ver01.0)

14 Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_CL_GL_PDD_MR_ver02.0)

15 Joint Crediting Mechanism Project Cycle Procedure (JCM_CL_PCP_ver02.0)

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 1MW Rooftop Solar Power System to University

Validation or Verification:

Validation

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

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

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

Date 3. Dec. 2018

[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 1MW Rooftop Solar Power System to University

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	-	-	☑	☑

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

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

Date 4. Mar. 2019

[redacted]

Kenji Suzuki
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