JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Introduction of 1MW Rooftop Solar Power System in Vehicle Assembly Factory
Reference number	PH004
Third-party entity (TPE)	Japan Quality Assurance Organization (TPE-PH-001)
Project participant contracting the TPE	Toyota Motor Corporation
Date of completion of this report	15/09/2021

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 the Republic of the Philippines, in line with Philippine procedures.	☒
Local stakeholder	The project participants have completed a local stakeholder consultation process and that due steps were taken to engage	☒

Item	Validation requirements	No CAR or CL remaining
consultation	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: Sumio	First name: Asada
Title: Senior Executive	
Specimen signature:	Date: 15/09/2021

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Hiroshi Motokawa	JQA	Team Leader	☒	Authorized	☐
Mr. ☐ Ms. ☒	Sachiko Hashizume	JQA	Internal Reviewer	☒	Authorized	☐
Mr. ☐ Ms. ☐				☐		☐
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>

In this report, there are two versions of PDD, the version 01.0 dated on 11/09/2020 submitted for validation (hereinafter, the PDD), and the version 02.0 dated 22/03/2021 and revised during the validation (hereinafter, the revised PDD). The same applies to the Monitoring Plan Sheet (MPS), Monitoring Structure Sheet (MSS) and the Modalities of Communication (MoC).

By reviewing the PDD, it is checked and confirmed that the PDD is completed using the latest version of the PDD form (JCM_PH_F_PDD_ver01.0) appropriate to the type of project and drafted in line with JCM Guidelines for Developing PDD and MR, JCM_PH_GL_PDD_MR_ver01.0 (hereinafter, the guidelines).

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team (hereinafter, the team) concludes that the PDD is completed using the valid form and drafted in line with the guidelines, considering the revisions by the resolutions of CARs/CLs mentioned below.

C.2. Project description

<Means of validation>

The proposed JCM project is “Introduction of 1MW Rooftop Solar Power System in Vehicle Assembly Factory” (hereinafter, the project). The project aims the reduction of CO2 emission by installing approximately 1MW solar photovoltaic (PV) system on the rooftop of the vehicle assembly factory of Toyota Motor Philippines Corporation (TMP).

The starting date of project operation is 04/01/2019 and the expected operational lifetime of the project is 9 years, which is based on the legal lifetime issued by National Tax Agency, Japan.

The team conducted desk review and interviews to confirm the accuracy and completeness of the project description. The team didn't conduct an on-site inspection for the project. The reason for this was that the following were expected:

- Information of the project and technology, necessary for the validation;
- Photos taken before and after the project start, and interviews with the PPs;
- Purchase records and/or installation records of the project equipment;
- Information collection by interviewing with the PPs and the stakeholders, when necessary.

An issue was raised.

<Findings>

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

< CAR01 >

The following are not correct and/or don’t comply with the guidelines:

- In the figure of C.2, the type of equipment is not indicated. Although "Monitoring Point No.1" is indicated in the figure of C.2, it is not correctly corresponding to the number of parameter listed in the MPS, i.e. (1);
- In the table of C.3, the operation days in the beginning and last year of project operation period are not properly reflected in the emission reduction calculations.

< PP response to this issue >

The figure of C.2. was revised to indicate monitoring points and type of equipment.

The values in the table of C.3 were revised considering the response to CAR03.

< Assessment of PP response >

The team confirms the revisions in the revised PDD are appropriately made.

Therefore, this issue was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the project description in the revised PDD is accurate and complete.

C.3. Application of approved methodology(ies)

<Means of validation>

The project applies the approved methodology, PH_AM002 Ver1.0, "Installation of Solar PV System" (hereinafter, the methodology).

By checking the JCM website at the time of submission of the project for validation, the team confirms that the applied version approved on 2 Feb. 2020 was valid at that time, i.e. on 21 Jan. 2021.

By comparing the PDD with the actual text of the methodology, the team confirms that the methodology is correctly quoted and applied.

By checking the relevant documents including documentation referred to in the PDD and reviewing comparable information as deemed necessary, the team confirms that the project meets each eligibility criterion of the methodology as follows:

Criterion 1: The project installs solar PV system(s).

The PDD states “The project installs solar PV system”.

The team received the following documents;

- Specifications of the project equipment and monitoring system,
- Photos of the project equipment taken before and after the installation,
- System drawing and single line diagram,
- Relevant contracts and purchase records.

By reviewing the documents listed above, the team confirms that the project newly installed the new project equipment, i.e. a solar PV system at project site. Hence, the team determines that the project meets Criterion 1.

Criterion 2: The PV modules are certified for design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).

The PDD states “The PV modules installed by the proposed project are certified for IEC 61215 and IEC 61730”.

By checking the documents, i.e. certificate for the qualifications issued by TÜV Rheinland (No. PV60131540, issued in October 2018, valid until 2023/8/5), it is confirmed that the PV modules installed by the project are certified for design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and 61730- 2).

Hence, the team determines that the project meets Criterion 2.

Criterion 3: The equipment used for monitoring output power of the solar PV system(s) and irradiance is installed at the project site.

The revised PDD states “The equipment to monitor output power of the solar PV system(s) and irradiance is installed at the proposed project site.”

The team received the following supplementary documents besides the documents received for validation of Criterion 1;
- Detailed catalogues of the pyranometer and the inverter having measuring function and monitoring system, which are issued by the manufacturer,
- Inverter life analysis report issued by a third party,
- Email between the PPs and the inverter manufacturer.

By reviewing the documents provided and interviewing with the PPs, the team confirms the following:
- A pyranometer was installed on the roof at the project site;
- No electricity meter for measuring the power generation is installed by the project;
- Measuring function is built in each inverter installed at the project site. That inverter is a so-called power conditioner;
- Each inverter sends to the data logger, the data of electricity converted from DC to AC.

Hence, the team determines that the project meets Criterion 3.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team confirms that the project meets all the eligibility criteria of the methodology whose applied version is valid at the time of submission of the project for validation. Therefore the team concludes that the project is eligible for applying the methodology.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

The MPS was prepared by using JCM_PH_AM002_ver01.0. By reviewing the relevant documents, the team confirms the following:
- MPS is not altered,
- Its required fields are appropriately filled in line with the methodology and the guidelines,
- All the emission sources covered by the methodology are included in the MPS.

Regarding the parameter to be fixed ex ante, EFRE,i, by reviewing the relevant documents, the team confirms that all data sources and assumptions of " EFRE,i" are appropriate, and that the parameters are appropriately fixed in line with the methodology and JCM Guidelines for Validation and Verification, JCM_PH_GL_VV_ver01.0.

As for EFRE,i, the methodology states as follows:
- In case the solar PV system(s) in a proposed project activity is directly connected to a regional

grid or connected to a regional grid via an internal grid not connecting to a captive power generator (Case 1), EFRE,grid is set as following:
Luzon-Visayas grid: 0.507 tCO2/MWh, Mindanao grid: 0.468 tCO2/MWh,
- In the case the solar PV system(s) in a proposed project activity is connected to an internal grid connecting to both a regional grid and a captive power generator (Case 2), EFRE,grid is set as following:
Luzon-Visayas grid: 0.507 tCO2/MWh, Midanao grid: 0.468 tCO2/MWh.

By reviewing the relevant documents, the team confirms the following:
- Project solar PV system is connected to an internal grid,
- Project site is located at the region of Luzon-Visayas,
- PPs applies the value of "0.507" in line with the methodology.
By reviewing the relevant documents and interviewing with the PPs, the team confirms that "EGi,p" was determined by calculating based on the values in the specification and other related documents, not on the actual operation.
Thus, an issue was raised.

<Findings>

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

< CL01 >

The value of EGi,p in the MPS(input) is 1,492.7 MWh/p, which is much higher than the actual monitored values in 2019 and 2020, 1,332.6 and 1,192.2 MWh/y, respectively. The PPs is required to give the team more information and justification regarding the difference between the values mentioned above.

< PP response to this issue >

The PPs explained that the main reasons of the difference were lower irradiance than expected and lower efficiency due to higher surface temperature in 2019, and volcanic eruption and COVID-19 lock down in 2020.
The estimated values of "EGi,p" in the MPS (input_separate) were revised based on the actual monitoring data in 2019. Accordingly, the values in the table of C.3. were also revised.

< Assessment of PP response >

By interviewing with the PPs, the team confirms the following:
- The main reasons given by the PPs are very reasonable;
- The value of EGi,p in the MPS(input_separate) was revised to much realistic one;
- Also the values in the table of C.3. of the PDD were revised.
Therefore, this issue was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team reaches the conclusion that the selected emission sources and GHG types are justified for the project. The team assesses the estimated values for project specific parameters in the MPS including intermediate processes to derive the values. The issues on the values raised by the team were fully clarified, which resulted in revisions of the PDD and the MPS. As a result, the revised values are considered reasonable in the context of the project.

C.5. Environmental impact assessment

<Means of validation>

The team confirms that the project is not subject to environmental impacts assessment (EIA) according to national regulations by reviewing the relevant documents and/or using local official sources, "REVISED GUIDELINE FOR COVERAGE SCREENING AND STANDARDIZED REQUIREMENTS UNDER THE PHILIPPINE EIS SYSTEM" (Republic of the Philippines, Department of Environment and Natural Resource, EMB Memorandum Circular 005, July 2014), http://eia.emb.gov.ph/wp-content/uploads/2019/01/Revised-Guidelines_Threshold_MC-2014-005.pdf.

This official guideline states that the renewable energy project with the total power generating capacity of 1 MW falls under "Category D" which are not covered by the Philippine EIS (Environment Impact Statement) system and are not required to secure an Environmental Compliance Certificate.

In details, the guideline has "Annex A Project Thresholds for Coverage Screening and Categorization" indicating that "- 3.2.7. Renewable energy projects such as ocean, solar, wind, tidal power except waste-to-energy and biogas projects" apply to "Category D", if the total power generating capacity of project is less than 5 MW.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the PPs did not conduct any EIA in line with the regulations of the Republic of the Philippines.

C.6. Local stakeholder consultation

<Means of validation>

Since no EIA was required for the project under the regulations in the Republic of the Philippines, local stakeholder consultation (LSC) was carried out in line with the JCM requirements as described in the PDD.

By reviewing the relevant documents and interviews with the PPs, the team confirms the

following:
- On 22/10/2018, the invitation letters were delivered to the stakeholders with an interest or concern in the project, before the LSC was held on 22/11/2018,
- The list of organizations/agencies of stakeholders participated in the LSC are provided in the PDD,
- The summary of the received comments provided in the PDD is complete,
- The local stakeholders provided no negative comments and no issues that require actions to be taken by the PPs,
- The summary and this process are described in the PDD.

As a result, the following are confirmed:
(a) Comments have been invited from local stakeholders relevant to the project;
(b) The summary of the comments received as provided in the PDD is complete;
(c) The PPs have taken due account of all comments received and have described this process in the PDD.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the LSC of the project has completed adequately and the process and information considered above are stated in the PDD.

C.7. Monitoring

<Means of validation>

By reviewing the MPS and relevant documents based on the methodology, the team confirms the following:
- Monitoring point and the type of monitoring equipment are appropriately illustrated in the figure of C.2. of the revised PDD,
- Monitored parameter is one, “EGRE,i” listed in line with the methodology,
- Monitoring information described in the MPS(input) complies with the requirements of the methodology and the guidelines,
- The monitoring structure described in the MSS of the monitoring plan seems to be feasible within the project design;
- The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient for ex post reporting and verification;
- The MSS states that QA/QC personnel is in charge of monitoring equipment calibration.

However, in “(h) Measurement method and procedures” of the MPS, no description on the calibration is found;
- The manufacturer’s specification for the meter, which have been prepared by the time of installation, is not provided;
Thus, the issues were raised.

<Findings>

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

< CAR02 >
The PPs are requested to respond to the following issues:
- Inconsistencies of the personnel between the MSS and "TMP Monitoring Manual for JCM Project";
- Role of "calibration of the monitoring equipments" of Operation and Maintenance Team considering CL02 mentioned below.

< PP response to this issue >
The MSS was revised according to "TMP Monitoring Manual for JCM Project".
And "calibration of the monitoring equipments" was removed.

< Assessment of PP response >
The following changes are confirmed:
- "Manager" to "Supervisor";
- "General Manager" to "Manager".
- Removal of "calibration of the monitoring equipments".

The team confirms that the above revisions/deletion was appropriately completed in the revised MSS, and that considering the assessment of PP response to CL02 mentioned below, this deletion is appropriate.
Thus, this issue was closed.

< CL 02 >
The PPs are requested to provide the following;
- Manufacturer's specification of the built-in electricity meter, type approval or certification, which has been prepared by the time of installation;
- Any evidence showing that the electricity meters shown by the manufacturer's specification, type approval or certification, are built-in the inverters with the type of SUN2000-42KTL manufactured by Huawei.

< PP response to this issue >
The PPs provided the following:
- Catalogues of inverter and monitoring system issued by the manufacturer;
- Inverter life analysis report issued by a third party;

- Email between the PPs and the inverter manufacturer.

And the PPs revised as follows:

- "Project information" of Criterion 3 in the table of B.2. of the PDD ("The equipment to monitor output power of the solar PV system(s) and irradiance is installed at the proposed project site"),
- Type of monitoring equipment illustrated in the figure of C.2. of the PDD ("22 inverters with built-in electricity measurement equipment") and
- Some descriptions were deleted and some added in "(h) Measurement method and procedures" of the MPS.

< Assessment of PP response >

By reviewing the documents provided and interviewing with the PPs, the team confirms the following:

- No electricity meter for measuring the power generation is installed by the project;
- However, measuring function is built in each inverter installed by the project. That inverter is a so-called power conditioner;
- Each inverter sends to the data logger, the data of electricity converted from DC to AC;
- Accuracy (which is expressed in the catalogue as "Voltage Accuracy: 0.5% rdg. + 1dgt. , Current Accuracy: 0.5% rdg. + 2dgt.) seems to be <1.0 as a result;
- Manufacturer's catalogue of monitoring system including the inverter has been prepared on 04/06/2018 by the time of installation.

Also the team confirms that the descriptions in the PDD and the MPS, i.e. the B.2. table and the C.2. figure, and "(h) Measurement methods and procedures", were appropriately revised based on the above-mentioned facts.

Thus, this issue was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the monitoring plan described in the revised MPS complies with the requirements of the methodology and the guidelines, and that the PPs have ability to implement the described monitoring plan including feasibility of monitoring structure.

C.8. Modalities of Communication

<Means of validation>

By directly reviewing the relevant documents including the company website/brochure, the business cards and specimen signatures of all the personnel shown in the draft MoC, the team confirms the following:

- MoC provided by the PP, Toyota Motor Corporation, with whom JQA has a contractual relationship, has applied the latest version of the form, JCM_PH_F_MoC_ver01.0,

- In line with the requirements by the relevant guidelines, the information including specimen signatures required as per the form is correctly completed and the MoC is duly authorized.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the MoC complied with all relevant forms and requirements.

C.9. Avoidance of double registration

<Means of validation>

By reviewing the relevant websites (e.g. CDM website, Markit Environmental Registry, etc.) and the Section 7 of the MoC, the team confirms that the project is not registered under other international climate mitigation mechanisms.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The team concludes that the project is not registered under the other international climate mitigation mechanisms.

C.10. Start of operation

<Means of validation>

By reviewing the relevant documents, e.g. monitored daily data and installation completion certificate, the team clearly confirms that the starting date of project operation is NOT 18/11/2018 as described in the PDD, and that it does not predate January 1, 2013.

Thus, this issue was raised.

<Findings>

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

< CAR03 >

By reviewing the relevant documents and monitored data records, the team confirms that the starting date of project operation is 04/01/2019 or after, NOT 18/11/2018 as described in the PDD.

< PP response to this issue >

PDD was revised to reflect the change of the starting date of project operation based on the "Certificate of Completion and Acceptance".

< Assessment of PP response >
The team confirms that the starting date of project operation in the revised PDD is correctly set at 04/01/2019 based on "Certificate of Completion and Acceptance" issued on 31/01/2019 by MSpectrum Inc.
It states the following:
- Percentage Completion is 100% Project completed of 100% Process Billing;
- Date of Completion is 04/01/2019;
- The design, supply, installation and commissioning of 1MW Solar Photovoltaic System has been 100% completed ..... passed acceptance test.
Therefore, this issue was closed.
<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.
The team confirms that the starting date of project operation in the revised PDD is determined appropriately.

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

The PDD had been publicly available for 30 days between 21/01/2021 and 19/02/2021 to invite public inputs on the JCM website, https://www.jcm.go.jp/ph-jp/projects/87.
During that period, one input dated 11/02/2021 was submitted in line with the Project Cycle Procedure by ENVIRONMENTAL MANAGEMENT BUREAU of Department of Environment and Natural Resources (DENR), Republic of the Philippines.

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

The PP, TMP, responded to the input on 17/03/2021, by providing an official letter with their explanations and opinions to all the DENR questions/comments, and sought DENR's understanding. Accordingly the DENR issued "ACKNOWLEDGEMENT RECEIPT" on the same day.

On 24/08/2021, DENR has sent an email to the PP, indicating their acceptance of the PPs' response. The email stated "Thank you very much for your response and we have no further comments. You may now continue the validation process for PH004."

The teams confirmed the PPs have taken due account of the public inputs received during the public inputs.

E. List of interviewees and documents received

E.1. List of interviewees

Mr. Masashi Hiratsuka, Group Manager, Planning Group 2, Manufacturing Environment Dept., Toyota Motor Corporation

Mr. Yohei Aoki, Assistant Manager, Planning Group 2, Manufacturing Environment Dept., Toyota Motor Corporation

Mr. Ayumu Baba, Project Deputy General Manager, Plant & Environmental Engineering Department, Toyota Daihatsu Engineering & Manufacturing Co., Ltd.

Mr. Direk U-Suwan, Manager, Plant & Facility Engineering Section, Plant & Facility Engineering Department, Toyota Motor Philippines Corporation

Mr. Donovan John T. Roma, Supervisor, Plant & Facility Engineering Section, Plant & Facility Engineering Department, Toyota Motor Philippines Corporation

Ms. Kei Sakakibara, Senior Consultant, Global Public Team, Climate Change and Sustainability Services, FAAS Division, Ernst & Young ShinNihon LLC

E.2. List of documents received

1. Project Design Document (PDD) submitted for validation, ver 01.0 (JCM_PH004_PDD_file) dated 11/09/2020, and ver 03.0 (JCM_PH_PDD_PH004_ver03.0) dated 13/09/2021

2. Monitoring Plan Sheet (MPS) and Monitoring Structure Sheet (MSS) submitted for validation, ver 01.0 (JCM_PH004_MPS_draft) and ver 02.0 (JCM_PH_AM002_PH004_ver02.0)

3. Modalities of communications statement (MoC) submitted for validation, ver 01.0 (JCM_PH_MoC_ver1.0_TMC), and ver 02.0 (JCM_PH_MoC_PH004_ver02.0)
4. Project Design Document Form (JCM_PH_F_PDD_ver01.0.docx)
5. JCM Modalities of Communication Statement Form (JCM_PH_F_MoC_ver01.0.docx)
6. JCM Approved Methodology, JCM_PH_AM002, "Installation of Solar PV System, Ver. 01.0"
7. Monitoring Plan Sheet and Monitoring Structure Sheet attached to the methodology (JCM_PH_AM002_ver01.0.xlsx)
8. JCM Glossary of Terms (JCM_PH_Glossary_ver01.0)
9. JCM Project Cycle Procedure (JCM_PH_PCP_ver01.0)
10. JCM Guidelines for Developing Project Design Document and Monitoring Report (JCM_PH_GL_PDD_MR_ver01.0)
11. JCM Guidelines for Validation and Verification (JCM_PH_GL_VV_ver01.0.pdf)
12. JCM Validation Report Form (JCM_PH_F_Val_Rep_ver01.0.docx)
13. JCM website of project information, https://www.jcm.go.jp/ph-jp/projects/87
14. JCM website of JCM_PH_AM002, https://www.jcm.go.jp/ph-jp/methodologies/111
15. Specifications of the project equipment and relevant reports
16. Layout drawing and photos of the project site and project equipment before and after their installation
17. Quotation, purchase order, billing statement and Official receipt of the project equipment
18. Acceptance certificate of equipment installation signed by the PPs and monitoring data showing the starting date
19. Legal lifetime of the installed equipment under Japanese tax regulation, https://elaws.e-gov.go.jp/document?lawid=340M50000040015, Annex 2 of Ministerial Ordinance on the legal lifetime of depreciable assets, etc.
20. Certificates of PV modules issued by TÜV Rheiland
21. Single line diagram of the project site
22. REVISED GUIDELINE FOR COVERAGE SCREENING AND STANDARDIZED REQUIREMENTS UNDER THE PHILIPPINE EIS SYSTEM (Republic of the Philippines, Department of Environment and Natural Resource, Environmental Management Bureau Memorandum Circular 005, July 2014), http://eia.emb.gov.ph/wp-content/uploads/2019/01/Revised-Guidelines_Threshold_MC-2014-005.pdf.
23. LSC invitation letter issued by the PP, LSC presentation materials prepared by the PPs
24. LSC meeting report and LSC attendees' list
25. Inverter manufacturer specifications, inverter life analysis report and emails between of the inverter manufacturer and the PPs
26. Monitored data during the period from 2018 to 2020

27. Monitoring manual prepared by the PPs
28. Estimated generation of the value, EGi p, in the MPS (input)
29. Copies of Business cards and signatures of the personnel in the MoC
30. Public input by DENR, PPs' reply, Acknowledgement Receipt and an email from DENR.

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.

Statement of competence

Name: Mr. Hiroshi Motokawa

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2014/12/22
Verifier	2014/12/22
Team leader	2014/12/22

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2014/12/22
TA 1.2. Renewables	2014/12/22
TA 3.1. Energy demand	2014/12/22
TA 4.1. Cement and lime production	2014/12/22
TA 5.1. Chemical industry	-
TA 10.1. Fugitive emissions from oil and gas	-
TA 13.1. Solid waste and wastewater	2014/12/22
TA 14.1. Afforestation and reforestation	-

Statement of competence

Name: Ms. Sachiko Hashizume

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2015/11/20
Verifier	2015/11/20
Team leader	2018/6/22

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2015/11/20
TA 1.2. Renewables	2015/11/20
TA 3.1. Energy demand	2015/11/20
TA 4.1. Cement and lime production	-
TA 5.1. Chemical industry	-
TA 10.1. Fugitive emissions from oil and gas	-
TA 13.1. Solid waste and wastewater	2015/11/20
TA 14.1. Afforestation and reforestation	-