JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	4.2MW Rooftop Solar Power Project to Pharmaceutical Factories, Vehicles Dealers, and Timber Factories
Reference number	ID 033
Third-party entity (TPE)	Japan Quality Assurance Organization (TPE-ID-003)
Project participant contracting the TPE	Alamport Inc.
Date of completion of this report	18/03/2024

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 Indonesia, in line with Indonesia's 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 unless a local stakeholder consultation has been conducted under an environmental impact assessment.	
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: Asada	First name: Sumio
Title: Senior Executive	
Specimen signature: [redacted]	Date: 18/03/2024

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Tadashi Yoshida	JQA	Team leader	☒	Authorized	☐
Mr. ☒ Ms. ☐	Hiroshi Motokawa	JQA	Internal reviewer	☒	Authorized	☐

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>

The PDD is completed using the latest version of the PDD forms (JCM_ID_F_PDD_ver02.0). The PDD is drafted for the proposed project (Ver. 01.0 dated 19/10/2023 for the first edition and Ver. 02.0 dated 21/02/2024 for the second edition), in line with the JCM Guidelines for Developing Project Design Document and Monitoring Report (JCM_ID_GL_PDD_MR_ver03.0).

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the PDD is completed using the valid version of the PDD form and drafted in line with the JCM Guidelines for Developing Project Design Document and Monitoring Report.

C.2. Project description

<Means of validation>

The purpose of the proposed project is to reduce GHG emissions from the consumption of the regional grid electricity by newly introducing 4.2MW rooftop solar power system to 2 pharmaceutical factories owned by PT Bintang Toedjoe, 9 vehicles dealer showrooms owned by PT Agung Automall and 2 timber factories owned by PT Sumber Graha Sejahtera, located

across the country. Two different models of PV module are used, *i.e.,* TSM-545DE19 made by Trina Solar was installed at the project sites of No. 1,2, 12 and 13, and JAM72S30-545/MR made by JA Solar was installed at the sites of No. 3-11. The rated maximum power output of each PV modules is 545W. The total number of PV modules installed at 13 project sites is 7,748 units, which corresponds to the output capacity of 4.2 MWdc (equivalent to 3.3 MWac) in total. The electricity generated by the PV solar system is mostly utilized for captive use of all project sites but exporting the electricity partly to the grid in case of excess supply. As a result, the proposed project is expected to contribute to the saving of grid electricity consumption in a range of 10-15%. The emission reductions of the proposed project are estimated to be 3,820 tCO_2/y and 29,994 tCO_2 in total during the monitoring period of 2023 - 2030.

The proposed project is distributed at 13 project sites located in West Java Province, Special Capital Region of Jakarta, Riau Islands Province, Bali Province and East Java Province, Indonesia, and implemented by PT Alam Energy Indonesia and PT ATW Alam Hijau from the Republic of Indonesia and Alamport Inc. and Shizen Energy Inc. from Japan.

The starting date of the proposed project is determined to be 01/01/2023 after the issuance of the Certificate of Operating Eligibility by the local government for the main sites such as pharmaceutical factories and timber factories. The commercial operation of power system at each site becomes feasible after the permission by the local government. The expected operational lifetime of the project is 17 years, which is based on the legal durable years for power generation facilities issued by Ministry of Finance, Japan. The proposed project was partially financed by the Ministry of the Environment (MOE), Japan, through the Financing Programme for JCM Model projects, which provides financial support of less than half of the initial investment for the projects in order to acquire JCM credits. As for technology transfer, Alamport Inc. has conducted OJT training on the operation and monitoring of the project PV solar system for the engineering staffs of PT ATW Alam Hijau (PP), PT ATW Solar Indonesia (O&M Contractor) and project users in 2021-2022.

The validation team has assessed the PDD and the supporting documents through the desk review and the interview with the PPs, without on-site visit, to validate the requirements about accuracy and completeness of the project description. No on-site visit is justified as follows:
The validation of the accuracy and completeness of the project description has been conducted by the document review including the photos of project sites and interviews with the PPs. The sufficient evidence and information relevant to the proposed project and technology are provided by the PPs, and the validation team has determined that the information and description in the PDD are accurate and complete.

The persons interviewed and documents reviewed are provided in Section E of this report.

Regarding the project description, monitoring point and project boundary, the validation team raised CAR 01, CAR 02 and CL 03 and these issues were resolved as explained in "Findings".

<Findings>

< CAR 01 >

The sum of emission reductions (30,608 tCO_2) during the year of 2023 - 2030 in A.2 of the PDD is not consistent with the Total (29,994 tCO_2) in the table of C.3.

<Resolution by the PPs>

The sum of emission reductions in A.2 of the PDD has been revised to 29,994 tCO_2.

<Assessment by the TPE>

It is confirmed through the review of the revised PDD that the sum of emission reductions during the period of 2023 - 2030 is corrected to 29,994 tCO_2 which is equal to the total in the table of C.3 of the PDD. Thus, CAR 01 is closed.

< CAR 02 >

1) The PPs are requested to distinguish the non-project equipment (such as Transformer, Building LVMDB and PLN meter) from the project ones in the figure of C.2 of the PDD.

2) The PPs are requested to illustrate Monitoring Point (1) clearly in the figure which is installed in AC Switchgear. (The description of Monitoring point (1) is not necessary)

3) The PPs are requested to illustrate graphically the source of reference emissions from the consumption of grid electricity in the figure.

<Resolution by the PPs>

1) Non-project equipment (PLN grid, Transformer, Building LVMDB, utility meter) have been distinguished visually from project equipment in the figure in C.2 of the PDD.

2) Monitoring Point (1) has been revised to refer to the electricity meter at the AC Switchgear. The description of Monitoring point (1) in the figure has been removed.

3) The source of reference emissions from the consumption of grid electricity has been clarified in the figure.

<Assessment by the TPE>

It is confirmed through the review of the revised PDD that the figure in C.2 of the PDD is appropriately revised as follows:

1) Non-project equipment such as PLN grid, Transformer, Building LVMDB, utility meter is clearly separated from the project equipment.

2) Monitoring point (1) showing the project meter installed at the AC Switchgear is clearly illustrated. The description of Monitoring point (1) in the figure is eliminated.

3) The source of reference emissions from the consumption of grid electricity is clearly added.

Thus, CAR 02 is closed.

< CL 03 >

The PPs are requested to clarify whether the electricity generated by the solar power system is fully utilized for self-consumption of all 13 factories, without exporting to the grid, in A.2 of the PDD.

<Resolution by the PPs>

The electricity generated by the solar power system is mostly utilized for self-consumption of all 13 project locations, and for some locations, exported to the grid in the case of excess supply. The project description in A.2 has been revised accordingly.

<Assessment by the TPE>

It is confirmed through the review of the revised PDD that the usage of electricity generated by the solar power system is properly described in A.2. Thus, CL 03 is closed.

<Conclusion based on reporting requirements>

The validation team concludes that the description of the proposed project in the revised PDD complies with the supporting documents and information obtained through the desk review and the interview with the PPs, and the description is accurate and complete, and provides comprehension of the proposed project.

C.3. Application of approved methodology(ies)

<Means of validation>

The approved methodology JCM_ID_AM013_ver01.0 "Installation of Solar PV System" is applied to the proposed project. The methodology is approved by the JC on 04/12/2017 (JC7, Annex 3) and valid at the time of the validation. The validation team has assessed whether the selected methodology is applicable to the proposed project. The project applicability was checked against three eligibility criteria in the approved methodology. The project information for each eligibility criterion and the assessment/conclusion about its applicability to the proposed project are summarized in the following table.

Eligibility criteria	Descriptions specified in the	Project information	Assessment and conclusion

	methodology		
Criterion 1	The project newly installs solar PV system(s).	The proposed project installed new solar PV systems in each location stated in A.3.	It is confirmed through the review of Construction Completion Report issued by Alamport Inc. in Feb. 2022 and Certificates of Operating Eligibility issued by Directorate General of Electricity, Ministry of Energy and Mineral Resources that the solar PV system with a capacity of 4.2 MWdc in total are newly installed at 13 project sites. Hence, Criterion 1 is satisfied.
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 PV modules installed in all locations (Trina Solar TSM-545DE19 for locations 1, 2, 12 and 13, and JA Solar JAM72S30-545/MR for locations 3 to 11) are certified for design qualifications IEC 61215 and safety qualifications IEC61730-1 and IEC 61730-2.	It is confirmed through the review of Certificates issued by TUV Rheinland and TUV SUD that the PV modules (TSM-545DE19 and JAM72S30-545/ MR) are certified for design qualification IEC 61215 and safety qualification IEC 61730-1/IEC 61730-2 on 21/10/2020 and 26/01/2022, respectively. Hence, the Criterion 2 is satisfied.
Criterion 3	The equipment to monitor output power of the solar PV system(s) and irradiance is installed at the project site.	Power meters (Schneider PM5350) are installed at the project site to monitor output power of the solar PV systems. Pyranometers (Kipp & Zonen SMP3-A) are installed at the project site to monitor irradiance.	It is confirmed through the review of Initial PR Test Reports issued by Shizen Energy Group and Single line diagram of each site that electricity meter and pyranometer are installed at 13 project sites and have been operated to monitor output power and irradiance. Hence, the criterion 3 is satisfied.

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the proposed project meets each eligibility criterion of the approved methodology ID_AM013 and that the applied version is valid at the time of submission of the proposed project for validation.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

The proposed project aims to reduce CO_2 emissions from the consumption of the regional grid electricity by newly installing the solar PV power system at 13 project sites. As per the methodology ID_AM013_ver. 01.0, reference emissions are sourced from the consumption of grid electricity and project emissions are sourced from the generation of electricity from the solar PV system.

Reference emissions in the proposed project are calculated from the quantity of the electricity measured at the AC output of the inverter in the solar PV system multiplied by the conservative emission factor of the grid, which is expressed by Equation (1), in accordance with the methodology ID_AM 013:

$$REp = \Sigma(EG_{i,p} \times EF_{RE,i}) \quad \text{---------- (1)}$$

where:

RE_p : Reference emissions during the period *p* (tCO_2/p)

$EG_{i,p}$: Quantity of the electricity generated by the project solar PV system *i* during the period *p* (MWh/p)

$EF_{RE,i}$: Reference CO_2 emission factor for the project solar PV system *i* (tCO_2/MWh)

The quantity of electricity generated by the project solar PV system ($EG_{i,p}$) is estimated *ex ante* based on the solar irradiance data from Meteonorm database, which gives the power output of 6,172 MWh/p. As the solar PV system in the proposed project is connected directly to the regional grid, *i.e.,* Jamali and Batam grids, the reference CO_2 emission factor used in the calculation of reference emissions is 0.616 tCO_2/MWh for the sites of Nos. 1, 2 and 6-13 and 0.664 tCO_2/MWh for the sites of Nos. 3-5, which are determined by the methodology ID_AM013. Thus, it is confirmed through the review of MPS that the project-specific parameter to be fixed *ex ante* such as $EF_{RE,i}$ is correctly applied in the calculation of reference emissions.

Project emissions are the emissions from the solar PV system, which is assumed to be zero

as per the methodology ID_AM 013. Therefore, it is expressed by Equation (2):

$PE_p = 0$ ---------- (2)

where:

PE_p : Project emissions during the period *p* (tCO_2/p)

Thus, the emission reductions (ER_p) during the period *p* are calculated by Equation (3), in line with the methodology:

$ER_p = \Sigma(EG_{i,p} \times EF_{RE,i}) - PE_p$ ---------- (3)

$= (5{,}780.444\ MWh \times 0.616 + 391.838\ MWh \times 0.664) - 0$

$= 3{,}820\ tCO_2/p$

The GHG annual emission reductions are estimated to be 3,820 tCO_2 and the sum of the emission reductions for the period of 2023–2030 is estimated to be 29,994 tCO_2. It is confirmed through the review of relevant documents and the e-mail interview with the PPs that all GHG emission sources specified by the applied methodology are identified, and the reference emissions (RE_p), project emissions (PE_p) and emission reductions (ER_p) in the revised PDD (ver. 02.0) and Monitoring Plan Sheet are correctly calculated, in accordance with the methodology ID_AM013_ver01.0.

Regarding the case selection of the reference CO_2 emission factor, the validation team raised CL 04 and this issue was resolved as explained in “Findings”.

<Findings>

< CL 04 >

The PPs are requested to select the case which is applied for the reference CO_2 emission factor of the proposed project in Table 2 of the MPS.

<Resolution by the PPs>

The case where the project is "directly connected or connected via an internal grid not connecting to either an isolated grid or a captive power generator, to a national/regional grid" has been selected.

<Assessment by the TPE>

It is confirmed through the review of the revised MPS that the case which is applied for the reference CO_2 emission factor of the proposed project is correctly selected and provided in Table 2 of the MPS. Thus, CL 04 is closed.

<Conclusion based on reporting requirements>

The validation team concludes that all emission sources and GHG types specified in the

approved methodology are appropriately justified, and that the quantity of the electricity ($EG_{i,p}$) generated by the project solar PV system in the MPS is correctly estimated and the value for the project-specific parameter to be fixed *ex ante* listed in the MPS ($EF_{RE,i}$) is also correctly determined as per the methodology. In addition, the annual emission reductions are correctly calculated using parameters and data in the MPS, in accordance with the applied methodology.

C.5. Environmental impact assessment

<Means of validation>

The purpose of the proposed project is to reduce CO_2 emissions from the consumption of grid electricity by newly installing the solar PV system to the existing factories and showrooms. The type of the proposed project is not included in the list of projects where Environmental Impact Assessment (EIA) is required, which is promulgated by Regulation No. 4, Ministry of Environment and Forestry, Indonesia, 2021. Therefore, it is confirmed that the EIA is not required for the proposed project.

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the EIA is not required for the proposed project. The implementation of the project is in line with the regulations in the Republic of Indonesia and the requirements of the JCM.

C.6. Local stakeholder consultation

<Means of validation>

The PPs conducted a local stakeholder consultation (LSC) on-line on 18/01/2023. Prior to the meeting, the invitation letter was delivered to the stakeholders on 06/01/2023. Following public and private entities are identified as stakeholders and they were invited for the LSC meeting:

- Indonesia JCM Secretariat/Coordinating Ministry for Economic Affairs of Indonesia
- PT Perusahaan Listrik Negara (PT PLN)
- PT Agung Automall
- PT Sumber Graha Sejahtera
- PT Bintang Toedjoe

As PT Bintang Toedjoe was absent from the LSC meeting, the presentation materials were

shared, but no comments were provided.

The local stakeholders provided positive comments for the proposed project. No negative issues that require further actions to be taken by the PPs were raised through the consultation. It is confirmed through the review of the relevant documents and the interview with the PPs that the stakeholder consultation process was appropriately conducted to collect stakeholders' opinions on the proposed project. The summary of the comments received in the meeting and due account of all comments taken by the PPs are fully described in the PDD.

Regarding the description of PP's response to the comments received, the validation team raised CAR 05 and this issue was resolved as explained in "Findings".

<Findings>

< CAR 05 >

The PPs are requested to add the following comment "No further action is required" into each comment from the stakeholders in E.2 of the PDD, in line with the Guideline of IGES.

<*Resolution by the PPs*>

"No further action is required" has been added into each comment in E.2 of the PDD.

<*Assessment by the TPE*>

It is confirmed through the review of the revised PDD that "No further action is required" is properly added into each comment which does not require further actions. Thus, CAR 05 is closed.

<Conclusion based on reporting requirements>

The validation team concludes that the PPs have completed a local stakeholder consultation process and invited comments on the proposed project from the local stakeholders. The summary of the comments received is provided in the PDD in a complete manner and the PPs have taken due account of all the comments and described this process in the PDD.

C.7. Monitoring

<Means of validation>

The Monitoring Plan consists of the Monitoring Plan Sheet (MPS) and Monitoring Structure Sheet (MSS), which complies with the approved methodology JCM_ID_AM013_ver01.0. The quantity of the electricity generated by the project solar PV system during the period *p* is measured by the electricity meter (Schneider PM5350, Accuracy class 0.5S) at the AC output side of the inverter. The monitoring point (1) for electricity is located at the AC Switchgear section, as illustrated by the figure in C.2 of the PDD. The

measured data such as electricity output and irradiance are continuously collected by the data logger and then automatically uploaded regularly to a cloud server which can be accessed from anywhere with internet connection. The data logger can also be accessed directly through a static IP address to perform O&M relevant tasks.

The electricity meter was calibrated at the manufacturer's factory for shipment, and the calibration certificate and the specification of the meter were provided by the time of installation. The manufacturer states that it does not require periodic re-calibration over the operational life of the meter. As the PPs guarantees the accuracy of the meter within +/- 5% in the MPS, the meter will be checked by the O&M contractor as necessary. The O&M tasks including the check of monitoring equipment are conducted by a contractor (PT ATW Solar Indonesia) under the instruction of PT ATW Alam Hijau, in accordance with the Scope of Work for Operation & Maintenance Manual of Rooftop PV System.

The roles and responsibilities of the personnel are described in the MSS. The monitoring structure consists of Project Manager (Alamport Inc.), QA/QC Personnel (PT ATW Alam Hijau) and Monitoring Manager (PT ATW Alam Hijau). The monitored data downloaded from the server is checked and stored by Monitoring Manager and then reviewed by QA/QC Personnel. All monitored data which are required for verification and issuance will be kept and archived electronically for two years after the final issuance of the credits. The monitoring report is prepared by QA/QC Personnel and then authorized by Project Manager.

It is confirmed through the review of the relevant documents and the interview with the PPs that the monitoring plan complies with the requirements of the approved methodology and the PPs are able to implement the monitoring activity appropriately according to the monitoring plan.

Regarding the monitoring frequency of the data, archiving of monitored data, accuracy check of electricity meter and title of responsible personnel, the validation team raised CAR 03, CAR 04, CL 01 and CL 02 and these issues were resolved as explained in "Findings".

<Findings>

< CAR 03 >

The PPs are requested to describe the monitoring frequency as well as recording frequency in Table 1(i) of the MPS.

<Resolution by the PPs>

The description in Table 1(i) has been revised to "Continuously monitoring and monthly recording".

<Assessment by the TPE>

It is confirmed through the review of the revised MPS that the description in Table 1(i) is properly revised to “Continuously monitoring and monthly recording". Thus, CAR 03 is closed.

< CAR 04 >

The PPs are requested to clarify who is in charge of archiving of monitored data required for verification and issuance in the MSS.

<Resolution by the PPs>

The role of Monitoring Manager in the MSS has been elaborated to include "archiving monitoring data required for verification and credit issuance for two years after the final issuance of credits ".

<Assessment by the TPE>

It is confirmed through the review of the revised MSS that Monitoring Manager is in charge of archiving monitored data required for verification and issuance for two years after the final issuance of credits. Thus, CAR 04 is closed.

< CL 01 >

The PPs are requested to clarify how the accuracy of the meter within ±5% is checked in Table 1(h) of MPS.

<Resolution by the PPs>

The accuracy has been elaborated as follows; "Spot-check of the electricity meter is conducted with hand-held instruments to confirm that the accuracy of the electricity meter is within ±5%."

<Assessment by the TPE>

It is confirmed through the review of the revised MPS and Scope of Work in the O&M Contract with PT ATW Solar Indonesia that the electricity meter will be spot-checked to ensure its accuracy within ±5%. Thus, CL 01 is closed.

< CL 02 >

The PPs are requested to provide the title of responsible personnel in the monitoring activity, not the job title of office organization (such as Vice President and President Director), in the MSS.

<Resolution by the PPs>

The titles have been revised to "Project Manager", "QA/QC Personnel" and "Monitoring Manager", respectively.

<*Assessment by the TPE*>

It is confirmed through the review of the revised MSS that the titles of responsible personnel in the monitoring activity are appropriately revised. Thus, CL 02 is closed.

<Conclusion based on reporting requirements>

The validation team concludes that the description of the MPS and MSS complies with the requirements of applied methodology and JCM Guidelines for Developing Project Design Document and Monitoring Report, and the monitoring point as well as measuring equipment are also appropriate. Thus, the PPs have demonstrated the monitoring structure and their abilities to implement the monitoring activity appropriately.

C.8. Modalities of Communication

<Means of validation>

The MoC was provided to the validation team for review on 21/12/2023, in the valid form (JCM_ID_F_MoC_ver01.0) at the time of validation, in which Alamport Inc. is nominated as the focal point. The MoC was signed by Primary authorized signatories of Alamport Inc. and Shizen Energy Inc. from Japan on 07/09/2023 and by Primary authorized signatories of PT Alam Energy Indonesia and PT ATW Alam Hijau from Indonesia on 07/09/2023, along with their contact details.

The validation team has checked the personal identities and employment status of the authorized signatories through their business cards with signature. Primary authorized signatory of Alamport Inc. is Representative Director, and Alternate authorized signatory is Senior Vice President. Primary authorized signatory of Shizen Energy Inc. is Head of International Business, and Alternate authorized signatory is Project Manager. On the other hand, Primary authorized signatory and Alternate authorized signatory of PT Alam Energy Indonesia is Director, and Primary authorized signatory of PT ATW Alam Hijau is President Director and Alternate authorized signatory is Director.

It is confirmed through the check of business cards and the interview with the PPs that all corporate and personal details including specimen signatures and employment status in the MoC are duly authorized to sign on behalf of the respective PP. The MoC is valid and accurate as requested in the JCM Guidelines for Validation and Verification.

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the MoC is completed using the valid version of the form, and the information and the specimen signature of all PPs in the MoC including a focal point are correct, in compliance with the requirements of the JCM Guidelines. It is demonstrated that the MoC is correctly completed and dully authorized.

C.9. Avoidance of double registration

<Means of validation>

The representative of focal point entity in the MoC, Representative Director of Alamport Inc., declares that the proposed project is not registered under any other international climate mitigation mechanism other than the JCM. It is confirmed through the check of publicly available information (e.g. CDM/JI website, etc.) that the proposed project is not registered under any other international climate mitigation mechanisms in terms of the name of entity, applied technology, scale and location.

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the proposed project is not registered under any other international climate mitigation mechanisms and hence it will not result in double counting of GHG emission reductions.

C.10. Start of operation

<Means of validation>

For the proposed project, the installation and performance test of project facilities at 13 project sites were satisfactorily completed by the end of 2022 and the project operation at all sites was expected to start since 01/01/2023. However, due to the delay of the issuance of the Certificate of Operating Eligibility by Directorate General of Electricity, Ministry of Energy and Mineral Resources, the solar systems at some project sites such as vehicle dealer showrooms were forced to postpone their commercial operation and monitoring activities later than 01/01/2023. As a result, the PPs have decided to start project operation at the main sites of pharmaceutical factories and timber factories on 01/01/2023. It is confirmed through the review of monitoring data and the interview with the PPs that the monitoring activity of the proposed project actually commenced on 01/01/2023.

<Findings>

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

The validation team concludes that the starting date of project operation, 01/01/2023, is correct and does not predate 01/01/2013 as required by the Guideline of the JCM project.

C.11. Other issues

<Means of validation>

No more issues are raised in the validation of the proposed project.

<Findings>

Not applicable.

<Conclusion based on reporting requirements>

Not applicable.

D. Information on public inputs

D.1. Summary of public inputs

In line with the JCM Project Cycle Procedure, the PDD was made publicly available for 30 days from 07/11/2023 to 06/12/2023 to invite public comments on the following JCM website: https://www.jcm.go.jp/id-jp/projects/115

No public comments were received.

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

Not applicable.

E. List of interviewees and documents received

E.1. List of interviewees

- Mr. Yasuharu Tokumasu,	Senior Vice President,	Alamport Inc.
- Ms. Tamiko Inoue,		Alamport Inc.
- Mr. Cahyo Sudarmo,	Project Manager,	Shizen Energy Inc.

E.2. List of documents received

1. PDD, ver01.0, dated 19/10/2023 and revised PDD, ver02.0 dated 22/02/2024
2. Monitoring Spreadsheet, dated 19/10/2023 and revised Monitoring Spreadsheet, dated 26/02/2024
3. JCM Modalities of Communication Statement Form (MoC) submitted for JC, dated 19/10/2023
4. Business cards of Primary authorised signatory, Alternate authorised signatory and Contact person from Alamport Inc., Shizen Energy Inc., PT Alam Energy Indonesia and PT ATW Alam Hijau
5. JCM Approved Methodology (JCM_ID_AM013_ver01.0), 04/12/2017
6. Monitoring Spreadsheet (JCM_ID_AM013_ver01.0)
7. JCM Modalities of Communication Statement Form (JCM_ID_F_MoC_ver01.0)
8. JCM Glossary of Terms (JCM_ID_Glossary_ver02.0)
9. JCM Project Cycle Procedure (JCM_ID_PCP_ver05.1)
10. JCM Guidelines for Developing Project Design Document and Monitoring Report (JCM_ID_GL_PDD_MR_ver03.0
11. JCM Project Design Document Form (JCM_ID_F_PDD_ver02.0)
12. JCM Guidelines for Validation and Verification (JCM_ID_GL_VV_ver01.0
13. JCM Validation Report Form (JCM_ID_F_Val_Rep_ver01.0)

14-1. Location map of 13 project sites

14-2. Summary of the power output at 13 project sites

15. Photos showing the overview of solar PV modules installed at 13 project sites
16. Company profile of Alamport Inc.
17. Company profile of Shizen Energy Inc.
18. Company profile of PT Alam Energy Indonesia
19. Company profile of PT ATW Alam Hijau
20. Certificates of Operating Eligibility for the project sites of No. 2,3 and 5-13, issued by Directorate General of Electricity, Ministry of Energy and Mineral Resources, Indonesia
21. Monitoring data of electricity output showing the starting date of project operation on 01/01/2023
22. Initial PR Test Report on the performance of solar PV system installed at each project site
23. Completion Report on Construction of the proposed project, prepared by Alamport Inc. in February 2022
24. Legal durable year list issued by Ministry of Finance, Japan, to demonstrate the expected operational lifetime (17years) of the solar PV module
25. Contract of the proposed project between Alamport Inc. and Global Environment Centre

Foundation (GEC) dated 29/023/2021

26. Records of the staff training for operation and maintenance of the solar PV power system
conducted at each project site between Sep 2021 and March 2022
27. Specification of solar PV module (Trina Solar TSM-545DE19 and JA Solar JAM72S30-545/MR)
28. Certificates of design qualification (IEC 61215) and safety qualification (IEC 61730-1, 61730-2) of Trina Solar TSM-545DE19, issued by TUV Rheinland on 21/10/2020 and TUV SUD on 26/01/2022, respectively.
29. Specification of electricity meter PowerLogic PM5350 (Accuracy class 0.5S) made by Schneider
30. Calibration certificate of electricity meter issued by Schneider on 20/21/2021
31. Comment on the re-calibration of electricity meter from Schneider
32. Specification of pyranometer SMP3 made by Kipp & Zonen
33. Specification of inverter Sun 2000-100KTL-M1 made by Huawei Technologies Co., Ltd.
34. Single line diagram of each project site
35. O&M Monthly Report prepared by PT ATW Alam Hijau and PT ATW Solar Indonesia
36. Scope of Work by Operation & Maintenance Manual for Rooftop PV System, prepared by Shizen Energy Group on 24/02/2022
37. List of Business and/or Activities that requires Environmental Impact Assessment (EIA), in Regulation No. 4, Ministry of Environment and Forestry, Indonesia, 2021.
38. Minutes of the local stakeholder consultation meeting (on-line) held on 18/01/2023
39. Invitation letter for the local stakeholder consultation meeting, dated 06/01/2023

40-1. Materials for LSC meeting - Concepts of JCM and MRV methodology for the project,

40-2. Materials for LSC meeting - Overview of the proposed project presented by Alamport Inc.

41. Diagram of monitoring structure for the proposed project
42. Source of *ex-ante* calculation of 6,172 MWh generated by the proposed project and irradiance data of project sites from Meteonorm database
43. Sample of plant report for the monitoring activities
44. Management Manual of Solar PV power system, prepared by PT ATW Solar Indonesia

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: Dr. Tadashi Yoshida

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	2015/11/12
TA 5.1. Chemical industry	2014/12/22
TA 10.1. Fugitive emissions from oil and gas	2014/12/22
TA 13.1. Solid waste and wastewater	2014/12/22
TA 14.1. Afforestation and reforestation	-

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	-