JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Introduction of Amorphous High Efficiency Transformers in Power Grid
Reference number	LA004
Third-party entity (TPE)	Japan Management Association (JMA)
Project participant contracting the TPE	Yuko-Keiso Co., Ltd.
Date of completion of this report	13 March 2023

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 Lao People's Democratic Republic, in line with Laos's procedures.	☒
Local stakeholder consultation	The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project.	☒
Monitoring	The description of the Monitoring Plan (Monitoring Plan	☒

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

Authorised signatory:	Mr. ☒	Ms. ☐
Last name: Hirakawa	First name: Masahiro	
Title: Senior Executive of GHG Certification Center, JMA		
Specimen signature: [redacted]		Date: 13/03/2023

B. Validation team and other experts

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

Please specify the following for each item.

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

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

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

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

C.1. Project design document form

<Means of validation>

PDD (Ref.1) was checked using the "Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_LA_GL_PDD_MR_ver03.0) (Ref.13) ".

Review history of the PDD is as follows.

- PDD version 1: PDD was submitted to validation team for validation on 17 November 2022. The PDD was informed on JCM website for public input.
- PDD version 2: PDD was submitted to validation team on 21 February 2023 due to changing the project title. The version 2 of PDD was final version.

The latest version of the PDD form (JCM_LA_F_PDD_ver03.0) was checked at the website of Joint Crediting Mechanism between Japan and Laos. Validation team confirmed that the latest version of the PDD form was used for this version of PDD (Ref.1). Also, validation team confirmed that form of Monitoring Spreadsheet (JCM_LA_AM003_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 in accordance with the "JCM Guidelines for Developing PDD and MR (Ref.13)".

C.2. Project description

<Means of validation>

The proposed project aims to reduce CO2 emissions by utilization of energy efficient transformers in the power distribution grid in Lao PDR. The project replaces conventional/more energy-intensive silicon steel core transformers with high efficiency amorphous transformers, which leads to reduces non-load losses (standby electricity).

Total of 1,307 units of amorphous transformers are installed on the power distribution grid in Lao PDR, which is managed by Electricite Du Laos (EDL).

Validation team conducted the assessment with the step below by following “JCM Guidelines for Validation and Verification (JCM_LA_GL_VV_ver01.0) (Ref.12)”.

- Document review was conducted using the checklist based on the “JCM Guidelines for Validation and Verification (Ref.12)”.
- Follow-up interviews with all PPs were conducted through internet on 6 January 2023 and also on-site visit on 2 February 2023.

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

A.1, 2:

Amorphous transformers installed by the project are manufactured in Vietnam and Thailand based on the state of the art technology developed by Hitachi Metals of Japan. Validation team confirmed the consistency with the description of PDD based on the documents, “Specifications of Amorphous Transformers (Product catalogue) (Ref. 3-1-1)”, “Pre-delivery Inspection Reports of Transformers Installed (Ref. 3-1-2)” and “Lists of Transformers Installed (Ref. 3-1-3).”

Validation team confirmed that the type of transformers described in the PDD was installed at the project site.

A.3:

The location of the project listed in the PDD was checked through the onsite visit at EDL and google map. Validation team confirmed the coordinates indicated the location of company headquarter of EDL.

A.4:

PPs of both countries, Japan and Laos, were confirmed through the interviews and checking the "Modalities of Communications (MoC) (Ref.8-1-2)" and "Organization Chart of EDL (Ref.11-1)".

A.5:

"Expected operational lifetime of project (18 years)" was checked and confirmed according to "the legal durable year in Japan (Ref. 3-4-1)" and "Distribution Transformer HANDBOOK (Ref. 3-4-2)".

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

A.6:

Financial support by the Ministry of the Environment, Japan was confirmed by checking "Grant decisions for JCM project (Ref.3-5-1)" and "JCM Grant Completion Report (dated on 24 Feb 2022) (Ref. 3-5-2)".

<Findings>

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

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

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team assessed the project description provided in the PDD.

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

C.3. Application of approved methodology(ies)

<Means of validation>

Approved Methodology LA AM003, ver01.0, "Installation of energy efficient transformers in a power distribution grid (Ref.2)" was applied to the proposed project. The methodology was approved by the Joint Committee on 10 August 2018, 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.12)".

- Document review was conducted using the checklist based on the "JCM Guidelines for Validation and Verification (Ref.12)".
- Interviews through online were conducted on 6 January 2023. Also, interviews by on-site visit at EDL office in Lao were conducted on 2 February 2023.

Each criterion in the PDD was checked as follows through document review and assessment by interviews. Regarding Criterion 2, CL4 was raised.

Criterion 1:

-Description specified in the methodology: “Single-phase and/or three-phase oil-immersed transformer with amorphous metal core is installed in the distribution grid.”
-Assessment for Criterion 1:
Validation team confirmed through “Specifications of Amorphous Transformers (Product catalogue)(Ref. 3-1-1)”, “Pre-delivery Inspection Reports of Transformers Installed (Ref. 3-1-2)”, “Acceptant Record of the Operation for the each transformers (Ref.3-3)” and interviews with EDL that the proposed project have installed a total of 1,307 units of three-phase oil-immersed transformer with amorphous metal core in the area of the distribution grids.
Also the serial number and installation address were checked with local photos and videos (Ref.3-1-8) to confirm that the transformers selected by sampling were installed and operating in the proper location as per “Acceptant Record of the Operation for the each transformers (Ref.3-3)”. As a result, validation team confirmed that each transformer was installed in an appropriate place. Validation team confirmed that the proposed project satisfied the eligibility criterion 1.

Criterion 2:
-Description specified in the methodology: “Load losses of the project transformer determined in line with IEC 60076-1 or national/industrial standards complying with IEC 60076-1 is equal or smaller than the standard values or specification values of load loss, required by the power company of the grid where the project transformer is installed, corresponding to its capacity and number of phases.”
-Assessment for Criterion 2:
Validation team confirmed through the documents “Specifications of Amorphous Transformers (Product catalogue) (Ref.3-1-1)”, “Standards related to transformers (Ref. 3-6-1, 3-6-2)”, “Pre-delivery Inspection Reports of Transformers Installed (Ref. 3-1-2)”. Validation team identified the consistency between the description of PDD and these documents relating transformer specification.
The latest version of standard for the introduction of transformer was unclear. Therefore, validation team raised CL4 to check the latest version of standard for introduction of transformers.
<Findings>
Please state if CARs, CLs, or FARs are raised, and how they are resolved.
CL4 was raised to check the latest version of standard, which was used in EDL, for introduction of transformers.
→Summary of response and validation team conclusion
PPs provided the latest version of document for standard, “Modular Specs, Modular Specification Distribution Transformers 055” (Ref.3-6-3), which was conformable to

IEC60076-1 (Ref.3-6-1), developed by EDL in 2015. The value of load loss for the capacity of each transformer was described in the document. Validation team confirmed that the installed transformers had met the value of the standard (Ref.3-1-2, 3-6-3).
CL4 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the proposed project was eligible for applying selected methodology "Installation of energy efficient transformers in a power distribution grid, version 1.0", and that the applied methodology was valid at the time of submission of the proposed project for the validation.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

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 including Monitoring Plan. Also, validation team checked the calculation of emission reductions. Validation team conducted the assessment with the step below by following “JCM Guidelines for Validation and Verification (Ref.12)”.

- Document review was conducted using the checklist based on the “JCM Guidelines for Validation and Verification (Ref.12)”.
- Follow-up interviews were conducted on 6 January 2023 through online. Also, on-site visit at EDL office in Laos was conducted on 2 February 2023.
- Remaining issues including the response of CL2 was checked with references.

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

Validation team confirmed that emission sources and types described in the PDD fully covered all relevant GHG emissions described in the methodology, and that there were no emission sources affected by the implementation of the proposed project activity but not addressed by the applied methodology.

The value of Brp was applied in line with the approved methodology (Ref.2) and “Document of blackout rate in EDL distribution network (Ref. 3-1-6)”. The value of EFgrid was applied in line with Lao’s official latest data “Calculation for the emission factor for electricity generation in Lao PDR, 2010 (Ref. 9-1)” and “IGES List of Grid Emission Factors, Version11.0, September 2022 (Ref. 9-2)”. Validation team confirmed that parameters to be fixed ex ante

were applied appropriately.

All of the Hi,p were set as 8,760 hours per year for the energizing time. According to the assessment of C.10 Start of operation, all of the transformers were set on 1 January 2022 as the start of the operation in a conservative manner. Hence, validation team confirmed that all Hi,p were set appropriately.

Validation team confirmed whether the value of NLLPJ,i,j,k and UNCi, were consistent with the documents "Specifications of Amorphous Transformers (Product catalogue) (Ref.3-1-1)", "Tender Specifications of the Power company (Ref.6-1)", "International Standard IEC 60076-1(Ref. 3-6-1)", "Modular Specs, Modular Specification Distribution Transformers 055, Approved by EDL on 2 Apr. 2015(Ref. 3-6-3)" and interviews with EDL.
Validation team confirmed that NLLPJ,i,j,k and UNCi were set appropriately.

The value of NLLRE,i,j,k were checked by raising CL2.
After checking CL2, 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 CL2 was raised to check the emission sources and calculation of emission reductions.

CL2:

As the source material of NLLRE,i,j,k, the evidence was not provided. Therefore, validation team requested PPs to submit supporting materials.

→Summary of response and validation team conclusion

The PPs submitted the evidence materials, "Contract for Supply and Delivery of Distribution Transformers (document for reference NLL)(Ref. 6-2)", which was a normal contract used for transformers procurement, and showed the values (No load losses of the reference transformer) for each category of transformers. Validation team confirmed that NLLRE,i,j,k in the MPS was consistent with the evidence. CL2 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team assessed the project description in the PDD and Monitoring Plan Sheet through the supporting documents and interviews with PPs. As a result of raising CL2, 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 assessment by interviews and document review;
- Significant emission sources which were not addressed by the applied approved methodology and would be affected by implementation of the proposed project were not identified;
-The approved methodology was applied correctly to calculate project emissions and reference emissions.

C.5. Environmental impact assessment

<Means of validation>

PDD stated that an Environmental Impact Assessment (EIA) was not required. Validation team had the interview with local side of PP to confirm the applicability of the requirements of EIA described in "Decree on Environmental Impact Assessment, No.21/GOL, dated 31 Jan 2019 (Ref. 4-1)" and "Lao PDR EIA projects list (Ref. 4-2)"

The project will reduce losses in the electricity distribution network by introducing of energy efficient transformers and will not require new building or plant construction. In addition, the project causes neither noise, vibration nor air pollution during its operation.

Validation team confirmed that EIA was not required 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 proposed JCM project is not required to conduct EIA by PPs against the legal requirement of Republic of Laos.

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 26 October 2022. The place of project activity is within the existing power grid. PPs identified the relevant stakeholders who are members from entities of EDL, Ministry of Energy and Mines and Ministry of Natural Resources and Environment as local stakeholders for the project activity.

The stakeholder consultation meeting was informed to stakeholders by sending invitation letter

via e-mail to invite to the meeting. Validation team checked "Local stakeholder consultation meeting summary (Ref. 5-1)", "Invitation letter (Request for joining the LSC) (to EDL, MEM, MONRE) (Ref.5-2)", "Presentation materials (Ref. 5-3 and 5-4)" and "List of the Participants for LSC Meeting held on 26/10/2022 (Ref. 5-5)."

Validation team confirmed that comments at the local stakeholder consultation meeting were all supportive and no negative comment received.

Also, validation team obtained the supportive comments from PPs at the interviews held at on-site visit on 2 February 2023.

<Findings>

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

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

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

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

C.7. Monitoring

<Means of validation>

The description of the PDD including monitoring plan was checked as follows during the document review and assessment by interviews with PPs to confirm the Monitoring. Monitoring plan consists of the Monitoring Plan Sheet and Monitoring Structure Sheet.

The description of Monitoring Plan Sheet was checked with the approved methodology. Monitoring points for measurement were checked by on-site visit and interviews with PPs, and "Lists of Transformer Installed (Ref.3-1-3)", "Acceptance Record of the Operation for each transformer (Ref.3-3)". Validation team confirmed that the actual monitoring point was appropriate and consistent with the description in the PDD.

Validation team checked the role and responsibility for monitoring were assigned to the personnel in accordance with the monitoring structure sheet.

Validation team found that the role of each PP for monitoring was unclear. CL3 was raised for checking the role of monitoring.

Validation team confirmed the role of each PP by checking CL3 as follows:

- JCM Project Managers (Stationed in Japan and Laos)
- JCM Monitoring Managers (Stationed in Japan and Laos)
- JCM Facilities Manager (Stationed in Laos)

<Findings>

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

CL3 was raised to check roles and responsibilities of PPs for monitoring.
CL3:
The Validation team requested PPs to clarify the specific roles of members in the monitoring structure.
→Summary of response and validation team conclusion
The additional documents "Monitoring Scheme (Ref.3-8-2)" and explanation regarding the names of the members, their roles and responsibilities were provided by PPs.
Validation team confirmed through the interview with PPs that the monitoring structure for the proposed project activity was established and described appropriately in the Monitoring Structure Sheet.
CL3 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.13)". 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_LA_F_MoC_ver01.0". Validation team confirmed that the latest form was used for MoC.

"The first version of MoC (Ref. 8-1-1)" was submitted by Yuko-Keiso on 5 December 2022. "The revised version of MoC (Ref.8-1-2)" was submitted by Yuko-Keiso on 21 February 2023 because the project title was changed. Validation team ensured that the "MoC (Ref.8-1-2)" was received from Yuko-Keiso with whom JMA has a contractual relationship. Validation team assessed the corporate identity of all project participants and a focal point, as well as the personal identities including specimen signatures and employment status of the authorised signatories through reviewing the "Written Confirmation (Ref.8-2)" and interviews with all PPs. Validation team confirmed that "Written confirmation (Ref.8-2)" was issued by Mr. Gen Tomita who is primary authorised by Yuko-Keiso in the "MoC (Ref.8-1-2)". "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 "Modalities of Communications (Ref.8-1-2)" 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.12)".

Validation team confirmed the "Modalities of Communications" (Ref.8-1-2) had been completed correctly in compliance with the requirements of the "JCM Guidelines for Validation and Verification (Ref.12)" and "Joint Crediting Mechanism Project Cycle Procedure (Ref.14)".

C.9. Avoidance of double registration

<Means of validation>

"Modalities of communications (MoC) (Ref.8-1-2)" indicates that the proposed project is not registered under other international climate mitigation mechanisms. 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 the "Lists of Transformer Installed (Ref.3-1-3)", "Acceptance Record of the Operation for the each transformer (Ref.3-3)", "Initial Plan and Actual Process Chart for Electricité Du Laos (EDL) (Ref.3-2)", "JCM Grant Completion Report (dated on 24 Feb 2022) (Ref. 3-5-2)"and interviews with the PPs.

Validation team checked "Start of operation date" by the following manner:

- confirmation of "operation date" on the "Lists of Transformer Installed (Ref. 3-1-3)"

- confirmation that “operation date” is the date of transformer installation as indicated in the “Acceptance Record of the Operation for the each transformer (Ref. 3-3)
- confirmation that all transformers were installed before October 2021 according to “Initial Plan and Actual Process Chart for Electricité Du Laos (EDL) (Ref.3-2)”, “JCM Grant Completion Report (dated on 24 Feb 2022) (Ref. 3-5-2)”

Validation team confirmed that 1 January 2022 was defined as “Starting of operation date” from the viewpoint of conservative manner.

In addition, validation team raised CL1 to clarify if there is any document showing “Start of operation date”.

<Findings>

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

CL1: Validation team requested to provide any document showing “Start of operation date”.

⇒Summary of Response and Validation team Conclusion :

PPs explained that a document used in the LSC meeting showed the starting date and there was no objections from the LSC participants (Ref. 5-1). Validation team confirmed that the document is consistent with PP’s explanation.

CL1 was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the "Start of operation date" of the proposed project was 1 January 2022 for proposed project as described in the PDD. "Start of operation date" for the proposed project is not before 1 January 2013. Hence, validation team confirmed that the proposed project satisfied the requirement of the “Joint Crediting Mechanism Project Cycle Procedure (Ref.14)”.

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_LA_PCP_ver03.0) (Ref.14)", the PDD is to be made publicly available for 30 days to invite public comments. The PDD was made publicly available for 30 days, from 8 December 2022 to 6 January 2023, on the following URL: https://www.jcm.go.jp/la-jp/information/464.

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

No comment was received during the period to receive public inputs. Hence, no action was required to be taken by the PPs to satisfy the requirement of JCM Project Cycle Procedure (Ref.14).

E. List of interviewees and documents received

E.1. List of interviewees

Yuko-Keiso Co., Ltd. Shiro Tokura Saori Iwasaki Ryosuke Morita Aya Yamamoto Electricite Du Laos (EDL) Vassana Phetlamphah Amnouay Pengsengkeo Vongsa Nanthavong Sengphet Soulignavong Vilaysuck Phaiyalath Souliyong Keophilavong Sengphet Sihalath NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc. Shintaro Higashi

E.2. List of documents received

Ref. 1 : Project Design Document for JCM project, “Introduction of Amorphous High Efficiency Transformers in Power Grid”
Ref. 1-1-1 : PDD, 1st Edition, was submitted for validation and was informed by JCM website for public inputs.
Ref. 1-1-2 : PDD, 2nd Edition, was submitted for validation due to changing the project title.
Ref. 1-2 : Monitoring Plan Sheet, 1st Edition, was submitted for validation and was informed by JCM website for public inputs.
Ref. 2 : Approved Methodology LA AM003, ver01.0, "Installation of energy efficient transformers in a power distribution grid"
Ref. 3 : Reference relating to PDD chapter A,B,C
Ref. 3-1-1 : Specifications of Amorphous Transformers (Product catalogue)
Ref. 3-1-2 : Pre-delivery Inspection Reports of Transformers Installed
Ref. 3-1-3 : Lists of Transformers Installed
Ref. 3-1-4 : Maps of Transformer Installation Locations
Ref. 3-1-6 : Document of blackout rate in EDL distribution network (dated on 08 Jan 2018)
Ref. 3-1-7 : Annual report to GEC prepared by Yuko-Keiso (dated on 31 Jan 2023)
Ref. 3-1-8 : Local photos and videos of transformers
Ref. 3-2 : Initial Plan and Actual Process Chart for Electricité Du Laos (EDL)
Ref. 3-3 : Acceptant Record of the Operation for the each transformers
Ref. 3-4-1 : Reference of Expected operational lifetime of project : Pole transformer for the electrical industry of Japanese legal durable years
Ref. 3-4-2 : Distribution Transformer HANDBOOK, International Copper Association Southeast Asia Ltd, 2009 Edition
Ref. 3-5-1 : Grant decisions for JCM project (dated on Oct 2017)
Ref. 3-5-2 : JCM Grant Completion Report (dated on 24 Feb 2022)
Ref. 3-6 : Standards related to transformers
Ref. 3-6-1 : International Standard IEC 60076-1
Ref. 3-6-2 : National Standard in Lao republic / Company standard, "Section VII Technical specifications", 2011 edition
Ref. 3-6-3 : Modular Specs, Modular Specification Distribution Transformers 055, Approved by EDL, 02 APR 2015
Ref. 3-7 : Construction and monitoring instructions
Ref. 3-8 : Documents related to monitoring (Prepared by Yuko-Keiso)
Ref. 3-8-1 : Monitoring manual by Yuko-Keiso

Ref. 3-8-2 : Monitoring scheme
Ref. 4 : Regulation regarding the EIA
Ref. 4-1 : Decree on Environmental Impact Assessment, No.21/GOL, dated 31 Jan 2019
Ref. 4-2 : Lao PDR EIA projects list
Ref. 5 : Local Stakeholder Consultation
Ref. 5-1 : Local stakeholder consultation meeting summary
Ref. 5-2 : Invitation letter (Request for joining the LSC) (to EDL, MEM, MONRE)
Ref. 5-3 : Presentation material by Yuko-Keiso
Ref. 5-4 : Presentation material by NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
Ref. 5-5 : List of the Participants for LSC Meeting held on 26/10/2022
Ref. 6 : Tender Specifications documents
Ref. 6-1 : Tender Specifications of the Power Company
Ref. 6-2 : Contract for Supply and Delivery of Distribution Transformers (document for reference NLL)
Ref. 8 : MoC
Ref. 8-1-1 : The first version of Modalities of Communications
Ref. 8-1-2 : Revised Modalities of Communications
Ref. 8-2 : Written Confirmation (Declaration)
Ref. 9 : Grid emission factor for Lao Republic
Ref. 9-1 : Grid emission factor for Lao Republic,"Calculation for the emission factor for electricity generation in Lao PDR, 2010"
Ref. 9-2 : IGES List of Grid Emission Factors, Version11.0, September 2022
Ref. 10 : Development of New Distribution Transformer Based on New Amorphous Metal
Ref. 11 : Information of Power Company
Ref. 11-1 : Organization chart of EDL
Ref. 11-2 : Annual report of EDL
Ref. 12 : JCM Guidelines for Validation and Verification (JCM_LA_GL_VV_ver01.0)
Ref. 13 : Joint Crediting Mechanism Guidelines for Developing Project Design Document and Monitoring Report (JCM_LA_GL_PDD_MR_ver03.0)
Ref. 14 : Joint Crediting Mechanism Project Cycle Procedure (JCM_LA_PCP_ver03.0)
Ref.15 : Joint Crediting Mechanism Glossary of Terms (JCM_LA_Glossary_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 Amorphous High Efficiency Transformers in Power Grid

Validation or Verification:
Validation

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

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

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

Date 1 Nov. 2022

[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 Amorphous High Efficiency Transformers in Power Grid

Validation or Verification:
Validation

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

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

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

Date 1. Nov. 2022

[redacted]

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

Certificate of Competence
for Validation/Verification team

GHG Certification Center
Japan Management Association

Scheme:
The Joint Crediting Mechanism (JCM)

Project Title:

Introduction of Amorphous High Efficiency Transformers in Power Grid

Validation or Verification:
Validation

Name	Qualification*1	Leader/Member/ Technical expert/ Technical Reviewer(TR)	Qualification of Technical area *2	JCM scheme competence
Mr. Masao Tomizawa	Lead Validator/ Verifier	Leader	☑	☑
Mr. Motoyuki Matsumoto	Lead Validator/ Verifier	Member	☑	☑
Mr. Masataka Ajiki	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 1 Nov. 2022

[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 Amorphous High Efficiency Transformers in Power Grid

Validation or Verification:
Validation

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

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

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

Date 1. Nov. 2022

[redacted]

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