JCM Verification Report Form

A. Summary of verification

A.1. General Information

Title of the project	Installation of Container Formation Facility at Lead Acid Battery Factory of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd.
Reference number	VN010
Monitoring period	01/04/2018 - 30/06/2019
Date of completion of the monitoring report	09/10/2019
Third-party entity (TPE)	Lloyd's Register Quality Assurance Limited (LRQA)
Project participant contracting the TPE	Hitachi Chemical Co., Ltd.
Date of completion of this report	25/11/2019

A.2 Conclusion of verification and level of assurance

Overall verification opinion	☒ Positive ☐ Negative
☒ Unqualified opinion	Based on the process and procedure conducted, *Lloyd's Register Quality Assurance Limited (LRQA)* (TPE's name) provides reasonable assurance that the emission reductions for *Installation of Container Formation Facility at Lead Acid Battery Factory of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd.* (project name) ✓ Are free of material errors and are a fair representation of the GHG data and information, and ✓ Are prepared in line with the related JCM rules, procedure, guidelines, forms and other relevant documents
(If overall verification opinion is negative, please check below and state its reasons.) ☐ Qualified Opinion ☐ Adverse opinion ☐ Disclaimer	<State the reasons> Not applicable

A.3. Overview of the verification results

Item	Verification requirements	No CAR or CL remaining
The project implementation with the eligibility criteria of the applied methodology	The TPE determines the conformity of the actual project and its operation with the eligibility criteria of the applied methodology.	☒
The project implementation against the registered PDD or any approved revised PDD	The TPE assesses the status of the actual project and its operation with the registered/validated PDD or any approved revised PDD.	☒
Calibration frequency and correction of measured values with related requirements	If monitoring Option C is selected, the TPE determines whether the measuring equipments have been properly calibrated in line with the monitoring plan and whether measured values are properly corrected, where necessary, to calculate emission reductions in line with the PDD and Monitoring Guidelines.	☒
Data and calculation of GHG emission reductions	The TPE assesses the data and calculations of GHG emission reductions achieved by/resulting from the project by the application of the selected approved methodology.	☒
Avoidance of double registration	The TPE determines whether the project is not registered under other international climate mitigation mechanisms.	☒
Post registration changes	The TPE determines whether there are post registration changes from the registered PDD and/or methodology which prevent the use of the applied methodology.	☒

Authorised signatory:	Mr. ☒ Ms. ☐
Last name: Chiba	First name: Michiaki
Title: Climate Change Manager - Asia & Pacific	
Specimen signature: [redacted]	Date: 25/11/2019

B. Verification team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Michiaki Chiba	LRQA Ltd.	Team leader	☒	Technical competence authorised	☒
Mr. ☒ Ms. ☐	Nguyen Thang	External expert	Host country expert	☐	N/A	☒
Mr. ☒ Ms. ☐	Xianxin Yan	LRQA China	Internal reviewer	☒	N/A	☐
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 verification, findings and conclusions based on reporting requirements

C.1. Compliance of the project implementation and operation with the eligibility criteria of the applied methodology

<Means of verification>

LRQA has determined during the verification process that the actual implementation and operation of the project has been conducted in conformance with the eligibility criteria of the applied methodology.

The project applied the approved methodology: JCM_VN_AM009_ver01.1 Installation of Container Formation Facility at Lead Acid Battery Factory, Version 01.1.

LRQA assessed by means of an on-site visit that the physical features of the project are in place and that the project participants (the PPs) have operated the project as per the eligibility criteria of the applied methodology. The steps taken to verify the eligibility criterion and the conclusion about implementation of the project are summarised as below.

Criterion 1: Container formation facility is newly installed or installed to replace tank formation facilities at lead acid battery production line.

Justification in the PDD: Container formation facility is installed to replace tank formation facilities at conventional lead acid battery production line at the factory of Hitachi Chemical

Energy Technology (Vietnam) Co., Ltd.
Steps taken for assessment: The verification team assessed the project documentation, the technical specification, the commissioning report, and conducted on site assessment including interviews.
Conclusion: The verification team confirmed that the project installed container formation facilities that replace the existing tank formation facilities at lead acid battery production line of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd., and the criterion is met.

The verification team confirmed that the eligibility condition is satisfied by the project by reviewing the supporting documents and the on site assessment.
The details of the persons interviewed and the documents reviewed are shown in the Section F of this report.

<Findings>

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

No issue was raised to the requirements of this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification team confirmed that the project has been implemented in conformity with the eligibility criteria of the applied methodology.

C.2. Assessment of the project implementation against the registered PDD or any approved revised PDD

<Means of verification>

The project installs container formation facilities that replace the existing tank formation facilities at lead acid battery production line of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd in Dong Nai Province, Viet Nam. The container formation facilities reduce electricity and fossil fuel consumption and lead to GHG emission reductions.
The project is implemented by Hitachi Chemical Energy Technology (Vietnam) Co., Ltd from the Socialist Republic of Viet Nam and Hitachi Chemical Co., Ltd. from Japan (the PPs). The start date of project operation is on 01/04/2018 and the expected operational lifetime of the project is for 9 years. The project receives financial support for JCM model projects from the Ministry of the Environment, Japan (MOE).
The verification team assessed the Monitoring Report (MR) that consists of Monitoring Report Sheet (MRS) parts of the Monitoring Spreadsheet and the supporting documents, conducted a physical site visit to assess the status of the actual project and its operation in accordance with the registered PDD.
The verification team determined through the verification process that the implementation and

operation of the project has been in accordance with the description contained in the registered PDD. The verification team, by means of a desk review and an on-site visit, assessed that:
- all physical features of the JCM project described in the registered PDD are in place, and
- the PPs have operated the JCM project as per the registered PDD.

The MR follows the Monitoring Plan (MP) of the registered PDD that has been established based on the approved methodology. The parameters to be monitored ex-post are (1) Ni,k,p Production output of lead acid battery type i in the project factory k during the period p (in units/p), (2) AHi Capacity of lead acid battery type i (in Ah/unit), and (3) EC_PJ,k,p Electricity consumption by the container formation facilities including chiller and cooling tower in the project factory k during the period p (in MWh/p). Grid electricity is only applicable to the project that the CO2 emission factor is fixed as 0.8154 tCO2/MWh ex-ante at the validation.

The project is implemented in a single factory site of Hitachi Chemical Energy Technology (Vietnam) in Dong Nai Province of Viet Nam. The production output of lead acid batteries is monitored and recorded in the production management system. The capacity of product lead acid batteries is specified in the product catalogues and specifications. Electricity meters are installed to directly and continuously measure electricity consumption by the container formation facilities, chillers and cooling towers.

The roles and responsibilities of the persons are described in the Monitoring Structure Sheet (MSS) in accordance with the requirements of the applied methodology. There was no change in the organizational structure during the monitoring period. Hitachi Chemical Co., Ltd. has been assisting Hitachi Chemical Energy Technology (Vietnam) Co., Ltd on implementation and management of the monitoring and reporting activities that includes conducting of the internal audits and data verifications in every 6 months for ensuring reliability of data and continual improvement.

Through the processes taken, CAR 1, CAR 3, CL 4 and CL 5 were raised as the resolution detailed below.

The details of the persons interviewed and the documents reviewed are shown in the Section F of this report.

<**Findings**>

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

Grade / Ref: CAR 1

Nature of the issue raised: Monitoring period was not correctly indicated in the MRS provided for respective years.

Nature of responses provided by the PPs: The PPs provided the revised MR with corrected indication of the monitoring period.

Assessment of the responses: The verification team confirmed that the monitoring periods are correctly indicated for respective years in the revised MR.

The CAR was closed.

Grade / Ref: CAR 3
Nature of the issue raised: Details of measuring equipment and calibration information were not included in the MRS.
Nature of responses provided by the PPs: The PPs provided the revised MRS added information of the electricity meters.
Assessment of the responses: The verification team confirmed that the information of measuring equipment is added in the revised MRS.
The CAR was therefore closed.

Grade / Ref: CL 4
Nature of the issue raised: The PPs were required to clarify implementation of the procedures for approval of the monitoring report and appointment of a person responsible for managing the monitoring points.
Nature of responses provided by the PPs: The PPs provided the revised monitoring procedures to improve clarity on approval of the MR, the appointment of responsible person for managing the monitoring points, and records of approval by the responsible person to demonstrate the implementation of the procedures.
Assessment of the responses: The verification team reviewed the revised monitoring procedures with record of approval of the MR and confirmed implementation of the monitoring procedures for approval of the MR by the authorised person and appointment of a responsible person for managing the monitoring points in accordance with the MSS.
The CL was closed.

Grade / Ref: CL 5
Nature of the issue raised: The PPs were required to clarify implementation of the monitoring procedures for the environmental impacts in compliance with the requirements of the host country.
Nature of responses provided by the PPs: The PPs provided EIA monitoring reports submitted for approval of the host country.
Assessment of the responses: The verification team confirmed the status of implementation of monitoring environmental impacts by the PPs based on the submitted monitoring reports.
The CL was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification team confirmed that the project was implemented and operated in accordance

with the registered PDD.

C.3. Compliance of calibration frequency and correction of measured values with related requirements

<**Means of verification**>

The parameter No. (1) Ni,k,p applies the monitoring Option C that uses the production management system to record the data. The monitoring of the production data is not a trade measurement and calibration of measuring equipment is not required by the host country regulations, the manufacturer or the approved methodology. The monitored data is checked with the delivery records.

The parameter No. (3) EC_PJ,k,p applies the monitoring Option C and the monitoring of the parameter uses electricity meters as the measuring equipment. The electricity meters measure electricity consumed by the container formation facilities, the chillers and the cooling towers out of the total electricity imported by the factory from the public electricity grid system, that are not for trade measurement and subject of regulations in the host country. Calibration of the electricity meters was conducted at the shipment from the factory and periodical calibration is not required by the host country regulations, the manufacturer or the approved methodology.

No correction was required to the measured values to calculate ERs in line with the PDD and Monitoring Guidelines during the monitoring period.

The details of the persons interviewed and the documents reviewed are shown in the Section F of this report.

<**Findings**>

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

No issue was raised to the requirements of this section.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team confirmed that the measuring equipment applied for the parameters satisfied the requirements of the MP concerning the regular calibration and no correction was required to the measured values during the monitoring period.

C.4. Assessment of data and calculation of GHG emission reductions

<**Means of verification**>

The MR is developed using the MRS applied to the registered JCM project that is confirmed fulfilment of the requirements of the MRS of the applied methodology.

LRQA has determined that:

1. a complete set of data for the specified monitoring period is available,

2. information provided in the MR has been cross-checked with other sources such as plant

log books, inventories, purchase records, laboratory analysis,

3. calculations of reference emissions (REs) and project emissions (PEs), as appropriate, have been carried out in accordance with the formulae and methods described in the MP and the applied methodology,

4. any assumptions used in emission calculations have been justified, and

5. appropriate emission factors, default values and other reference values have been correctly applied.

The project applies energy saving container formation process to manufacturing of lead acid batteries. The sources of GHG emissions are electricity and fossil fuel (LPG) consumption by tank formation facilities of the reference scenario and electricity consumption by container formation facilities, chillers and cooling towers of the project scenario. CO2 emissions in the reference and project scenarios are considered to determine the REs and the PEs in accordance with the applied methodology.

The GHG emission reductions of the project are calculated as:

$REp = \Sigma_k [(EC_{RE,k,p} \times EFelec,k) + (NHQ_{RE,k,p} \times EFfuel,k)]$

$EC_{RE,k,p} = \Sigma_i (SEC_{RE,i,k} \times Ni,k,p) \times 1/1,000$

$NHQ_{RE,k,p} = \Sigma_i (SNHQ_{RE,i,k} \times Ni,k,p) \times 1/1,000$

$SEC_{RE,i,k} = 0.1338 \times AHi + 0.1531$

$SNHQ_{RE,i,k} = 0.3282 \times AHi + 0.9377$

$PEp = \Sigma_k (EC_{PJ,k,p} \times EFelec,k)$

$ERp = REp – PEp$

CO2 emission factors are 0.8154 t-CO2/MWh for consumed electricity and 0.0616 tCO2/GJ for fuel as fixed ex-ante at the validation.

The GHG emission reductions during the first monitoring period are calculated from the monitored data of the parameters ex-post as:

Year 2018 (01/04/2018 – 31/12/2018)

ERp = REp – PEp = 5,667.0 – 3,766.7 = 1,900.2 t-CO2e

Year 2019 (01/01/2019 – 30/06/2019)

ERp = REp – PEp = 4,229.1 – 2,840.3 = 1,388.8 t-CO2e

The project container formation facilities started the normal operation from 01/04/2018 and the total production outputs in the first monitoring period of 456 days were 8,156,804 pcs that are 6,529,021 pcs in full 1 year (8,156,804 x 365/456 = 6,529,021 pcs) and 102% of ex-ante estimation (6,400,000 pcs).

The total electricity consumption during the period was 8,102.80 MWh that is 6,485.8 MWh in full 1 year (8,102.80 x 365/456 = 6,485.8 MWh) and 152.5% of ex-ante estimation (4,252.41 MWh).

The total GHG emission reductions of 3,288 tCO2e during the monitoring period are 2,632 tCO2e in full 1 year (3,288 x 365/456 = 2,632 tCO2e) that are 68.8% of ex-ante estimation of 3,825 tCO2e. Higher electricity consumption than the ex-ante estimation particularly during the initial period resulted in decrease of the ERs that is expected to improve during the subsequent monitoring periods with the normal production.

The verification team assessed the reported data with documented evidence and by means of on site visit. Through the processes taken, CAR 2, CL 1, CL 2 and CL 3 were raised as the resolution detailed below.

The details of the persons interviewed and the documents reviewed are shown in the Section F of this report.

Parameters	Monitored values	Method to check values in the monitoring report with sources
Ni,k,p HR1221, 2018	329,621 pcs/p	Assessment was conducted based on records of production data and on site assessment.
Ni,k,p XTV1255, 2018	304 pcs/p	
Ni,k,p HRL1225, 2018	80 pcs/p	
Ni,k,p HR1227, 2018	128,880 pcs/p	
Ni,k,p GP1272, 2018	905,597 pcs/p	
Ni,k,p HR1232, 2018	0 pcs/p	
Ni,k,p XTV1285, 2018	1,184 pcs/p	
Ni,k,p HR1234,	2,961,289 pcs/p	

2018 Ni,k,p UPS12460, 2018 Ni,k,p HR1221, 2019 Ni,k,p XTV1255, 2019 Ni,k,p HRL1225, 2019 Ni,k,p HR1227, 2019 Ni,k,p GP1272, 2019 Ni,k,p HR1232, 2019 Ni,k,p XTV1285, 2019 Ni,k,p HR1234, 2019 Ni,k,p UPS12460, 2019	327,337 pcs/p 411,744 pcs/p 272 pcs/p 0 pcs/p 132,592 pcs/p 516,144 pcs/p 528 pcs/p 3,808 pcs/p 1,981,136 pcs/p 456,288 pcs/p	
AHi HR1221 AHi XTV1255 AHi HRL1225	5.25 Ah/unit 5.5 Ah/unit 6.25 Ah/unit	Assessment was conducted based on the product catalogues/specifications and on site assessment.

AHi HR1227 AHi GP1272 AHi HR1232 AHi XTV1285 AHi HR1234 AHi UPS12460	6.75 Ah/unit 7.2 Ah/unit 8.0 Ah/unit 8.5 Ah/unit 8.5 Ah/unit 9.0 Ah/unit	
EC_PJ,k,p 2018 EC_PJ,k,p 2019	4,619.5 MWh/p 3,483.3 MWh/p	Assessment was conducted based on records of electricity consumption and on site assessment.

<Findings>

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

Grade / Ref: CAR 2

Nature of the issue raised: An error was found in electricity consumption data of September 2018 for the parameter EC_PJ,k,p.

Nature of responses provided by the PPs: The PPs corrected the error and provided the revised MR and the calculation spreadsheets for review by the verification team.

Assessment of the responses: The verification team reviewed the revised MR with calculation spreadsheets and confirmed that the erroneous data found in electricity consumption is corrected. The correction resulted in change of total ERs less than 1 tCO2e.

The CAR was closed.

Grade / Ref: CL 1

Nature of the issue raised: The PPs were required to clarify relevant monitoring and reporting procedures applied to electricity consumed for charging the products manufactured by tank formation process that is deducted from the electricity consumption of the project.

Nature of responses provided by the PPs: The PPs provided supporting documents on the calculation of the electricity consumed for charging the products manufactured by tank formation process as applied in the Annex to the registered monitoring spreadsheet and confirmation of the TPE conducted the validation.

Assessment of the responses: The verification team reviewed the supporting documents on how the relevant monitoring and reporting procedures were validated and confirmed that the procedures were followed for the emissions calculation.
The CL was closed.

Grade / Ref: CL 2
Nature of the issue raised: The PPs were required to clarify implementation of the QA/QC procedures applied to check the production data for the parameter Ni,k,p.
Nature of responses provided by the PPs: The PPs provided the revised monitoring procedures and records of checking the production data.
Assessment of the responses: The verification team confirmed implementation of checking the production data for which the monitoring procedures are revised for clarity. The number of products is automatically counted by QR code that is checked by the production order sheet and the delivery records. Defective products that did not pass the quality checks are removed from the calculation but the data gap is confirmed to be within 5% over the period.
The CL was closed.

Grade / Ref: CL 3
Nature of the issue raised: The PPs were required to clarify implementation of the procedures to keep the data monitored and required for verification and issuance for the required duration.
Nature of responses provided by the PPs: The PPs provided the revised monitoring procedures in which the procedures for keeping the data are clarified for implementation.
Assessment of the responses: The verification team confirmed that the monitoring procedures are revised to clarify implementation of the requirements.
The CL was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification team confirmed that appropriate methods and formulae for calculating REs and PEs have been followed. The verification team is of the opinion that all assumptions, emissions factors and default values that were applied in calculations have been justified.

C.5. Assessment of avoidance of double registration

<Means of verification>

The verification team assessed and confirmed relevance of the written confirmation from the PPs that the project is not registered under the other international climate mitigation mechanisms.
The team, in addition to the interviews with the PPs, checked publicly accessible information

of Clean Development Mechanism (CDM), Joint Implementation (JI), Verified Carbon Standard (VCS) and Gold Standard (GS) and found no identical project as the registered JCM project in terms of the name of entities, applied technology, scale and the location. The result of researches confirmed that the project was not registered under the other international climate mitigation mechanisms than JCM and it will not result in a double counting of GHG emission reductions.

The details of the persons interviewed and the documents reviewed are shown in the Section F of this report.

<Findings>

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

No issue was raised to the requirements of this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification team confirmed that the project is not registered under other international climate mitigation programs.

C.6. Post registration changes

<Means of verification>

The verification team assessed the project documentation and through the on site visit and confirmed that there was no post registration change from the registered PDD or the approved methodology.

<Findings>

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

No issue was raised to the requirements of this section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification through the verification processes determined that there was no post registration change from the registered PDD or approved methodology which prevent from use of the applied methodology.

D. Assessment of response to remaining issues

An assessment of response to the remaining issues including FARs from the validation and/or previous verification period, if appropriate

No FAR was issued in the validation and this is the first verification of the project.

E. Verified amount of emission reductions achieved

Year	Verified Reference Emissions (tCO_2e)	Verified Project Emissions (tCO_2e)	Verified Emission Reductions (tCO_2e)
2013			
2014			
2015			
2016			
2017			
2018	5,667.0	3,766.7	1,900
2019	4,229.1	2,840.3	1,388
2020			
Total (tCO_2e)			3,288

F. List of interviewees and documents received

F.1. List of interviewees

Hitachi Chemical Energy Technology (Vietnam) Co., Ltd.

Tim Chu, General Manager of Vietnam Factory

Wang Tien Sheng, Deputy Section Chief of Improvement Section

Wang Chun Nan, Section Manager, Manufacture Department

Wang Jay, Deputy Section Manager, Maintenance Section

Vo Trong Thong, Deputy Section Chief of Improvement Section

Lin Yi Ning

Hitachi Chemical Co., Ltd.

Akira Ishiguro, Assistant Manager, Environment & Safety Management Dept.

Mitsubishi UFJ Research and Consulting Co., Ltd.

Ryo Maeda, Consultant, Consulting Business Division, Optimum Solution Business Unit, Social Innovation Co-Creation Dept.

Hiroyuki Yamashita, Business Analyst, Consulting Business Division, Optimum Solution Business Unit, Social Innovation Co-Creation Dept.

F.2. List of documents received

Category A documents (documents prepared by the PPs)

- Monitoring Report completed on 09/09/2019
- Revised Monitoring Report dated 09/10/2019
- Data calculation sheet for production and electricity consumption
- Product catalogues
- Monitoring system charts
- JCM monitoring production number management flow chart
- Monitoring procedures
- Manufacturer's recommendation for calibration of electricity meter
- Specification for electronic multi-measuring instrument MS96SSRA-MB
- Inspection report for Electronic Multi-measuring Instrument ME96SSRA-MB
- Reports of internal audit for JCM MRV
- Commissioning report for chargers
- Commissioning report for container formation facility
- Commissioning report for water coolers
- Commissioning report for transformers and distribution boards
- Commissioning report for cooling tower
- Commissioning report for cooling system
- Additional information for the proposed JCM methodology "Installation of Container Formation Facility at Acid Lead Battery Factory"
- HCEN-VN monitoring list 1908, 190930, 191030
- EIA report
- Declaration letters from the project participants on avoidance of double registration
- Records of monthly electricity consumption by container formation facilities, chillers and pumps
- Records of operation and maintenance events
- Records of production data checks
- Confirmation from the TPE validated the project
- Calculation of electricity consumption on charging products manufactured by tank formation process
- Data sheets for electricity consumption on charging products manufactured by tank formation process
- Revised data calculation sheet for production and electricity consumption
- Detailed processes of monitoring production data
- Reports of monitoring environmental impacts

Category B documents (other documents referenced)

- PDD Version 2.0 dated 31/10/2018 including the annexes
- Modalities of Communication Statement Form dated 30/11/2018
- Validation Report dated 06/11/2018
- JCM_VN_AM009_ver01.1 Introduction of Container Formation Facility at Lead Acid Battery Factory, Version 01.1
- Additional Information for the proposed JCM methodology "Installation of Container Formation Facility at Acid Lead Battery Factory" (public version)
- JCM Project Cycle Procedure JCM_VN_PCP_ver04.0
- JCM Guidelines for Validation and Verification JCM_VN_GL_VV_ver01.0
- JCM Guidelines for Developing PDD and MR JCM_VN_GL_PDD_MR_ver02.0
- JCM Glossary of Terms JCM_VN_Glossary_ver01.0
- Approved Small Scale Methodology AMS II.C. Demand-side energy efficiency activities for specific technologies
- Proposed and registered projects under CDM, VCS, Gold Standard, and the other international schemes
- IEC 62053-22:2003, Electricity metering equipment (ac) - Particular requirements. Part 22: Static meters for active energy (classes 0,2 S and 0,5 S)
- Ministry of Science and Technology Circular No. 23/2013/TT-BKHCN on Group 2 Measuring Instruments
- Electricity emission factor for Vietnamese Grid published by the Ministry of Natural Resource and Environment

Annex Certificates or curricula vitae of TPE's verification 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 Appointment is attached to this report.

Joint Crediting Mechanism Certificate of Appointment

Title of Project:
Verification for Installation of Container Formation Facility at Lead Acid Battery Factory of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd. (Ref No. VN010)
First monitoring period: 01/04/2018 – 30/06/2019

We hereby certify that the following personnel have engaged in the verification process that has fully satisfied the competence requirements of the verification of the JCM project.

Name of Person	Assigned Roles
Michiaki Chiba	Team Leader
Nguyen Tri Thang	Host Country Expert
Xianxin Yan	Technical Reviewer

Signed by

Michiaki Chiba
Climate Change Manager – Asia & Pacific
19/08/2019