




**Verification and certification report form for
CDM programme of activities
(Version 04.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	Tunki Small Scale Hydropower Program of Activities (UNFCCC Ref. No.: 6198)		
Version number(s) of the PoA-DD(s) to which this report applies	7		
Version number of the verification and certification report	01		
Completion date of the verification and certification report	15/06/2021		
Monitoring period number and duration of this monitoring period	08 19/09/2020 to 31/12/2020 (inclusive of both dates)		
Number and version number of the monitoring report to which this report applies	01 Version 04 dated (14/06/2021)		
Coordinating/managing entity (CME)	Carbonbay GmbH & Co. KG		
Host Parties	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)	
	Peru	Yes	
Applied methodologies and standardized baselines	AMS-I.D. Grid connected renewable electricity generation (version 18.0)		
Mandatory sectoral scopes	01		
Conditional sectoral scopes, if applicable	N/A		
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	2,644 tCO ₂ e		
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report	Amount before 1 January 2013	Amount from 1 January 2013 until 31 December 2020	Amount from 1 January 2021
	0	835 tCO ₂ e	0
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Limited; (CDM-E-0052)		
Name, position and signature of the approver of the verification and certification report	Vikash Kumar Singh, Compliance Officer 		

SECTION A. Executive summary

The Co-ordinating Managing Entity (Carbonbay GmbH & Co. KG) has appointed the DOE, Carbon Check (India) Private Ltd. to perform an independent eighth (08th) periodic verification of the CDM Programme of Activities "PoA 6198: Tunki Small Scale Hydropower Program of Activities" in Peru (hereafter referred to as "PoA") for the following CPAs:

Sl. #	CPA Reference Number	Title of the CPA
1	6198-P2-0001-CP2	Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1

The PoA supports the development of new small-scale hydropower projects in Peru connected to the Peruvian National Electricity Grid (SEIN). Each small-scale CDM Program Activity (referred to as CPA) under this PoA comprises one or more hydropower plant projects having a combined installed capacity of no more than 15 MW in the case of new facilities or a capacity addition, replacement or retrofit of no more than 15 MW for the total plant capacity in the case of existing facilities, considering the threshold for small-scale CDM projects.

During the current monitoring period, the CPA 6198-P2-0001-CP2 (CPA 1) was implemented and operational. The CPA are designed to generate emission reductions by small-scale greenfield (CPA 1) hydropower projects which are connected to the Peruvian National Electricity Grid (SEIN) and displace electricity that would otherwise be produced by coal and fossil fuel power thermal power plants. The project activity displaces electricity generation in the baseline.

This report summarises the findings of the verification of the project, performed on the basis of paragraph 62 of the CDM Modalities & Procedures, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board. Verification is required for all registered CDM project activities intending to confirm their achieved emission reductions and proceed with request for issuance of CERs. This report contains the findings and resolutions from the verification and a certification statement for the certified emission reductions.

Objective:

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity or component project activities of a programme of activities achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the "Tunki Small Scale Hydropower Program of Activities" in the host country Peru for the period 19/09/2020 to 31/12/2020 (inclusive of both the dates).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the registered programme of activities.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant UNFCCC and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered/included component project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with registered CPA-DD /B04/ and the approved monitoring methodology /B02/.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered CPA-DD /B04/.

- To verify the implemented monitoring plan with the registered CPA-DD /B04/ and applied baseline and monitoring methodology /B02/.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the registered monitoring plan /B04/.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The verification comprises a review of the monitoring report for CPA 6198-P2-0001-CP2 covering the monitoring period from 19/09/2020 to 31/12/2020 and based on the registered CPA-DD /B04/ including the monitoring plan, emission reduction calculation spread-sheet, monitoring methodology and all related evidence provided by project participant.

As part of the verification process remote audit interviews and stakeholders' interviews were performed.

The verification team assigned by the DOE concludes that the registered PoA-DD /B04/, CPA 6198-P2-0001-CP2 (CPA 1) as described in the registered CPA-DD /B04/ and monitoring report (version 04; Dated: 14/06/2021) /01-a/, meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM M&P, the modalities and procedures for CDM and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the requirements of CDM VVS for PoAs (Version 02.0) /B01-1/.

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the registered CPA-DD /B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and remote audit, the verification team confirms that the PoA has resulted in the 835 tCO₂e emission reductions during the eighth monitoring period

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader /TE	IR	Anand	Amit	CC IPL	X	X	X	X
2.	Team Member/ TE/LE	EI	Acuna Carter	Francisco	CC IPL	X	X	X	X
3	Trainee Assessor	IR	Choudhary	Aparna	CC IPL	X	X	X	X
4	Local Expert	EI	Alvarado	Gianfranco Molfino	CC IPL			X	

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Singh	Vikash Kumar	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

SECTION C. Application of materiality in conducting the verification**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error: Recording and reporting of the information in the ER spreadsheet.	Low	<i>All the ER spreadsheet data of the electricity generation and grid emission factor calculation, including the raw data. This includes all the parameters to be monitored ex-post as per the PoA-DD/CPA-DDs</i>	<p>Verification team of CC IPL has focused on assessment of the following:</p> <ul style="list-style-type: none"> • Procedure of raw data collection/ Monitoring procedures. • Data & information flow with a special focus on any material mistake • Calculation spreadsheets. • Procedures/QA/QC established to detect and correct any error or omission in monitoring parameters. • Quality control for monitored parameters and metering systems. <p>Complete verification (100 % data) of all the monitoring records (measurement records, invoices and the calibration certificates) was done by the verification team (for all CPAs for which emission reductions are claimed under the PoA) and compared with the values indicated in the emission reduction spreadsheet. No risk identified.</p>
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Low	<i>The data is recorded in the spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, GEF calculation sheet.</i>	<p>The identified risk was mitigated by reviewing the management of access to the records. It was confirmed through interviews that the raw data of electricity is collected by the trained personnel and then transmitted and stored electronically to the CME's office.</p> <p>Furthermore, quality control for monitored parameters and metering systems was also checked during site visit.</p>

3.	Accuracy of the measuring equipment	Low	<i>Check the calibration records for the electricity meter.</i>	The identified risk was mitigated by checking the calibration certificates of the energy meters.
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C.2. Consideration of materiality in conducting the verification

The threshold of materiality was evaluated based on §13 of “Guideline: Application of materiality in verifications” (version 02.0) /B09/ and § 307 of CDM VVS for PoA (version 02.0) /B01-1/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 5% of 835 tCO_{2e} which is equal to 41.75 tCO_{2e}

In planning the verification, verification team took cognizance of §11 and 12 of the “Guideline: Application of materiality in verifications” (version 02.0) /B08/. A materiality threshold of 41.75 tCO_{2e} is determined in line with §308 (d) of CDM VVS for PoA (version 02.0) /B01-1/.

The verification has been performed through a desk review and remote inspection including interviews with relevant personnel. The risks identified were mitigated by complete verification of all the monitoring records (measurement records, invoices and the calibration certificates) as done by the verification team and compared with the values indicated in the emission reduction spreadsheet.

In conducting the verification, DOE took cognizance of §13-17 of the “Guideline: Application of materiality in verifications” (version 02.0) /B08/ and based on the input of data from different sources checked through complete (100%) review of records during on-site and off-site. Some mistakes were identified and subsequently finding was raised. These findings are detailed in Appendix 4, and they were successfully closed. Therefore, related identified mistakes as listed in findings in Appendix 4 to this report have been determined to be immaterial.

Based on the assessment carried out, CCIPL confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions or misstatements

SECTION D. Means of verification

D.1. Desk/document review

Documents reviewed or referenced during the verification are listed in Appendix 3 below

D.2. On-site inspection

In the view of current situations where travel restrictions have been put in place for domestic as well as international travel around the world due to COVID-19 pandemic, the DOE has decided to conduct the verification remotely (without on-site inspection) for the CPA (6198-P2-0001-CP2) for this MP 19/09/2020 to 31/12/2020 in accordance with the provisions of paragraph 41 (b) of CDM-EB90: Meeting report (Version 01.0):

DOE also noted CDM Executive Board's decision to relax mandatory site visits by DOEs until 31st December 2021 because of COVID-19 /15/. Alternatives means were used by the VT for the purpose of verification, which included interviews with the CME, respective CPA implementer, site technicians and remote inspection of the site in order to assess the following:

Date of Remote Audit: 17/03/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	An assessment of the implementation and operation of the registered project activity as per the registered PoA-DD, CPA-DDs.	Remote Audit	17/03/2021	Amit Anand, Francisco Acuna Cater, Aparna Choudhary
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	Remote Audit	17/03/2021	Amit Anand, Francisco Acuna Cater, Aparna Choudhary

3.	Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the CPA-DD	Remote Audit	17/03/2021	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
4.	A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources	Remote Audit	17/03/2021	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the CPA-DD and the selected methodology and corresponding tool(s), where applicable	Remote Audit	17/03/2021	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	Remote Audit	17/03/2021	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
7.	An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters	Remote Audit	17/03/2021	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna

D.3. Interviews

No.	Interviewee			Date	Subject	Team member	
	Last name	First name	Affiliation				
1.	Brueckner	Wolfgang	Carbonbay GmbH & Co. KG	17/03/2021 (on Skype)	Project operation, CER calculation and completeness of monitoring report, Quality Assurance – Management and operating system, compliance of monitoring plan with monitoring methodology and CPA-DDs.	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
2.	Florian	Eduardo	COELVISAC	17/03/2021 (on Skype)	Project technical specification and operation including metering and QA/QC	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
3.	Manco	Alonso	COELVISAC	17/03/2021 (on Skype)	Project technical specification and operation including metering and QA/QC	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna
4.	Chiara	Gustavo	COELVISAC	17/03/2021 (on Skype)	Project technical specification and operation including metering and QA/QC	Amit Anand, Francisco Cater, Choudhary	Acuna Aparna

5.	Maruca Ore	Jose Carlos Varess	EGECSAC	17/03/2021 (on Skype)	Project implementation and operation, monitoring procedure, data and information flow, Roles and responsibility, Quality Assurance – Management and operating system, Qualification and Training Project technical specification and operation including metering and QA/QC	Amit Anand, Francisco Cater, Choudhary Acuna Aparna
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D.4. Sampling approach

No sampling approach has been followed as 100% samples have been verified. Since the PoA is the installation of small scale run of river hydro project and each CPA is having only one hydro power plant project and thus no such sampling approach is required by the assessment team.

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verifications	-	-	-
CPAs considered for verification and covered in this report	-	-	-
Programme of activities	-	-	-
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents ¹	-	-	-
• Changes to the programme design	-	-	-
• Addition of CPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Component project activities	-	-	-
Compliance of the CPA implementation with the included CPA design document	-	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized	-	-	-

baselines or other methodological regulatory documents			
• Corrections	-	-	-
• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	-	-	-
• Changes to the project design	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	CAR 05	-
• Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
• Data and parameters monitored	-	CAR 01	-
• Implementation of sampling plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	CAR 03	-
Assessment of data and calculation of emission reductions or net removals	-	CAR 04 CAR 02	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	-	-	-
• Remarks on difference from estimated value in included CPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others	-	-	-
Total	-	05	-

SECTION E. Verification findings

E.1. General

E.1.1. Compliance of the monitoring report with the monitoring report form

Means of verification	DR, I
Findings	--
Conclusion	<p>The latest available version of the Monitoring report form for CDM programme of activities is version 04.0 /B03/. Verification team confirms that the latest available version has been used by the CME and the MR /01-a/ is in compliance of the latest version of the CDM-PoA-MR-FORM and instructions for completing the form contained therein /B03/.</p> <p>CC IPL, had made the MR (version 01, dated 10/02/2021) /01-d/ for CPA 6198-P2-0001-CP2 (CPA 1 covering the monitoring period from 19/09/2020 to 31/12/2020 (both days inclusive) was made publicly available on 18/02/2021 on UNFCCC website.</p>

	This confirms compliance with the §338 and §339 of CDM VVS for PoAs (version 02.0) /B01-1/.
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E.1.2. Remaining forward action requests from validation and/or previous verifications

There were no forward action requests during the previous (07th) verification

E.1.3. CPAs considered for verification and covered in this report

Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period	Is the CPA considered for this verification? (yes/no)	The date when the CPA was included	Version of the PoA-DD	Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)
6198-P2-0001-CP2: Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1	Yes	30 November 2020	7	Y

E.2. Programme of activities**E.2.1. Compliance of the programme implementation with the registered programme design document**

Means of verification	DR, I
Findings	--
Conclusion	<p>CCIPL through document review, remote inspection and interviews with the CME and respective CPA implementers assessed that all physical features (technology, project equipment, and monitoring and measuring equipment) of the included CPA in the registered PoA-DD or CPA-DD /B04/ are in place and that the coordinating/managing entity has operated the PoA and the CPA as per the registered PoA-DD and CPA-DD /B04/.</p> <p>The VT was also able to confirm that the implementation of Programme of Activity (PoA) and the Component Project Activities (CPA) are in accordance with the project description contained in the registered PoA-DD, CPA-DD (CPA 1) /B04/.</p> <p>The verification took cognizance of §253 of the CDM PS for PoA (version 02.) /B01-2/ and §340 (a) and §341 of CDM VVS for PoA (version 02.0) /B01-1/.</p>

E.2.2. Implementation and operation of the management system

Means of verification	DR, I
Findings	--
Conclusion	<p>The PoA management system including the record-keeping system and the management structure has been explained in section C of the registered and PoA-DD /B04/. During the course of verification, VT based on the review of section D of the monitoring report /01-a/, supporting documents and interview/observation has assessed this management system. Verification team evaluated the management systems in place to implement the monitoring of the project activity. This included the management structure with clear definition of roles and responsibility of personnel involved, records and document control process, procedures for technical review, procedures for training, continuous improvement of the PoA management system, record keeping system, procedures for double counting and make sure SSC-CPAs included in the PoA are not de-bundled component of other CDM project activities.</p> <p>As outlined in section B.5.3 of the CPA-DD /B04/ and section D of MR /01-a/,</p>

	<p>monitoring has been done by the CPA implementer, by means of monitoring equipment, which has been done in supervision and periodic review by the CME, Carbonbay GmbH & Co.KG.</p> <p>In order to ensure completeness and accuracy of monitoring information, all data collected is recorded monthly into an electronic spreadsheet. This information is further maintained by the CME. It was confirmed during the interview and by checking the monitoring system that all the roles and responsibilities related to monitoring are fulfilled by representatives of CME and the CPA implementer. The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan /B04/.</p> <p>The details about monitoring system have been provided in Section D of the monitoring report /01-a/. The data flow and management and reporting structure was also checked during the interview.</p> <p>Diagrams of the roles and responsibilities data collection transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in section D of the MR /01-a/.</p> <p>The verification team confirms that the management system of the CDM PoA is in place, with the responsibilities properly identified. This confirms the compliance of §340 (a), § 347 (b) (iv) and §347 (e) of CDM VVS PoAs (version 02.0) /B01-1/.</p>
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E.2.3. Post-registration changes

E.2.3.1. Corrections

Not applicable for this crediting period

E.2.3.2. Inclusion of a monitoring plan

Not applicable for this crediting period

E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Not applicable for this crediting period

E.2.3.4. Changes to the programme design

Not applicable for this crediting period

E.2.3.5. Addition of CPA inclusion template

Not applicable for this crediting period

E.2.3.6. Change of coordination/managing entity

Not applicable for this crediting period

E.2.3.7. Changes specific to afforestation and reforestation activities

Not applicable.

E.3. Component project activities

E.3.1. Compliance of the CPA implementation with the included CPA design document

Means of verification	DR, I
Findings	--
Conclusion	Through remote inspection, interview with CME and respective CPA implementer, the VT was able to confirm that implementation of Programme of Activity (PoA) and the Component Project Activities (CPA) is in accordance with the project description contained in the registered CPA-DD /B04/.

Verified Project Description of 6198-P2-0001-CP2 (CPA 1):

As verified through remote inspection, interview with CME and respective CPA implementer the CPA is a run of river hydropower plant; it involves the construction of the intake structure, the water conveyance system and the powerhouse.

Based on review of provided evidence /04/ and through interviews with CME and CPA implementer, verification team confirms that the CPA 1 is a run of the river power plant with a turbine capacity of 1768.4 KW (i.e. 1.76 MW) and the capacity of generator is 1680 kW (i.e. 1.68 MW) as verified through review of photographs of nameplate of the project equipment and review of commissioning certificate /03/. The generated electricity is supplied to users (which signed agreement with COELVISAC /05/) through SEIN grid network /11/. As verified during previous onsite inspection, project uses a horizontal Francis turbine with a height of 28m and 7m³/s water flow. The power plant is producing 13,039 MWh per year using water flow from and irrigation channel (Quipico Channel). The turbinated water is being discharged to the Quipico Channel and is being used for irrigation purpose. The project is operational since 12/09/2013 as evident from the commissioning certificate /03/.

Verification team during remote inspection confirms that the electricity supplied by the project activity to the grid is measured by calibrated electricity meters. The parameter is monitored /06/ at the project site and crosschecked with the invoices /07/ sent to the registered users. Data is monitored continuously, recorded hourly and consolidated in a monthly basis as required by the applicable methodology.

The component project activity was implemented, and equipment installed as described in the approved revised CPA-DD/B04/.

It was confirmed through document review /01-a/, /B04/ that the Carbonbay GmbH & Co. KG is the Co-ordinating/Managing Entity for the PoA and COELVISAC is the CPA implementer. The actual project activity is in line with the registered CPA-DD /B04/.

The actual operation of the CDM project activity:

The starting date of the CPA 1 is 23/08/2011 as per the registered CPA-DD /B04/ the date on which the land acquisition contract and approval to support the irrigation channel rehabilitations was signed. The project has been delivering electricity to the national grid starting from 19/09/2013 /03/.

During the reported monitoring period, the CPA has supplied 1581.03 MWh /06/ of electricity to the users through registered agreement via grid and thus displaces 835 tCO₂e of emission reduction during the second crediting period. The measurement of supplied electricity is being carried out by electricity meters this has been cross checked by the copies of invoices and spread sheet of the energy meter readings covering the monitoring period /06/. Verification team confirms that project has obtained statutory clearances /03/ as required for its implementation and operation.

Carbon Check's verification team confirms that the CPA are implemented within the boundary of the PoA as described in the registered PoA-DD /B04/ and the implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PoA-DD /B04/ and CPA-DD /B04/.

The verification team considers the CPA description of the project contained in the registered CPA-DD /B04/ to be complete and accurate. The CPA-DD /B04/ comply with the relevant methodology, tools, forms and guidance at the time of CPA-DD submission for registration/inclusion.

In accordance with §342 (c) of CDM VVS for PoA (version 02.0) /B01-1/, the

	<p>verification team confirms that there is no information (data and variables) in the current monitoring period that is different from that stated in the registered CPA-DD /B04/ which has caused an increase in the estimates of GHG emission reductions.</p> <p>Verification team has assessed the project in order to check any proposed or actual changes to the project design in accordance with §269 of CDM VVS for PoAs.</p>
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E.3.2. Post-registration changes

E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

There are no temporary deviations for the reported monitoring period from the CPA-DD

E.3.2.2. Corrections

Not applicable for this crediting period.

E.3.2.3. Changes to the start-date of the crediting period

Not applicable for this crediting period.

E.3.2.4. Inclusion of a monitoring plan

Not applicable for this crediting period.

E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Not applicable for this crediting period.

E.3.2.6. Changes to the project design

Not applicable for this crediting period.

E.3.2.7. Changes specific to afforestation and reforestation activities

Not applicable.

E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines

Means of verification	DR, I
Findings	--
Conclusion	<p>The monitoring plan as contained in the registered CPA-DD /B04/, /9/, /10/, /11/ were reviewed against the monitoring requirements of the applied methodology AMS-I.D (version 18.0) /B02/ as well as registered PoA-DD /B04/ with reference to the technologies involved. Based on this review it was found the monitoring plan contained in the revised CPA-DDs /B04/, /9/, /10/, /11/ includes all the required parameters to be monitored in the context of the CPA design and description and allows proper determination of emission reductions in accordance with registered PoA-DD /B04/ and applied methodology AMS-I.D (version 18.0) /B02/.</p> <p>The monitoring plan is in accordance with the approved methodology, AMS-I.D (version 18.0) /B02/, that is included in registered CPA-DD /B04/.</p> <p>The verification took cognizance of §343 to §345 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

E.3.4. Compliance of monitoring activities with the registered monitoring plan

E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	DR, I
Findings	--

Conclusion	The verification team's assessment of each data and parameter fixed ex-ante is provided below:					
	Parameter	Description	Value	Unit	Source	Assessment
	6198-P2-0001-CP2 (CPA 1)					
	EF _{grid,BM,y}	The build margin emissions factor	0.6532	tCO ₂ /MWh	Registered CPA-DD /B04/	The value is consistent with registered CPA-DD /B04/ and fixed ex-ante for the duration of the crediting period of the project activity.
The value is consistent with the registered CPA-DD /B04/ and fixed ex-ante for the duration of the crediting period of the project activity. The fixed ex-ante data and parameter has been listed in the monitoring report and confirmed by the verification team as correct and consistent with that stated in the registered CPA-DD /B04/.						
The verification took cognizance of §346 of CDM VVS for PoAs (version 02.0) /B01-1/.						

E.3.4.2. Data and parameters monitored

Means of verification	DR, I					
Findings	--					
Conclusion	All relevant monitoring parameters (as listed in section D. 7.1 of the registered CPA-DD /B04/ and E.2 of the MR /01-a/) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.					
	Parameter	Description	Value	Unit	Assessment	
	EG _{PJ,facility,y}	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y,	CPA 1: 1581.03	MWh	The reported value has been checked with monthly generation report /06/, and further cross checked with invoices /07/ of sold electricity and COES information /18/ for CPA 1	
	EF _{grid,CM,y}	Emission factor for the Peruvian interconnected grid (SEIN)	CPA 1: 0.52838	tCO ₂ /MWh	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The value was checked from Emission factor calculation sheet	

					/14/.
	EF _{grid,OM-DD,y}	The Data OM factor	Dispatch Analysis emission	CPA 1: 0.40548	tCO ₂ /MWh
					<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.</p> <p>The value was checked from Emission factor calculation sheet /14/.</p>
	EG _{PJ,h}	Total electricity dispatched by the project activity in hour h of year y.	AS per the EF calculation sheet /14/	MWh	<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.</p> <p>The value was checked from Emission factor calculation sheet /14/.</p>
	EG _{PJ,y}	Total electricity dispatched by the project activity in year y.	CPA 1: 1581.03	MWh	<p>The reported value has been checked with monthly generation report /06/ and further cross checked with invoices /07/ of sold electricity for CPA 1.</p>
	EF _{EL,DD,h}	CO ₂ emission factor of power unit in the top of the dispatch order in hour h in year y.	Data used is presented in the spreadsheet for Grid Emission Factor calculation /14/.	tCO ₂ /MWh	<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved</p>

					frequency in the monitoring plan. The value was checked from Emission factor calculation sheet /14/.
	EG _{n,h}	Electricity generated and delivered to the grid by power units n in hours h.	Data used is presented in the spreadsheet for Grid Emission Factor calculation /14/.	MWh	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The value was checked from Emission factor calculation sheet /14/ and COES website /B05/.
	EF _{EL,n,y}	CO ₂ emission factor of power unit n in year y	Data used is presented in the spreadsheet for Grid Emission Factor calculation /14/ (CPA 1)	tCO ₂ /MWh	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The value was checked from Emission factor calculation sheet /14/ and COES website /B05/.
	η _{n,y}	Average net energy conversion efficiency of power unit m in year y (ratio)	Data used is presented in the spreadsheet for Grid Emission Factor calculation /14/ (CPA 1)	Ratio	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per

				the approved frequency in the monitoring plan. The value was checked from Emission factor calculation sheet /25/ and COES website /B05/.
$EF_{CO_2,n,i,y}$	Average CO ₂ emission factor of fuel type i used in power unit m in year y	Diesel Oil: 72,600 Residual Fuel Oil: 75,500 Natural Gas: 54,300 Coal: 87,300	kgCO ₂ /TJ	The parameter is taken as default on the basis of data provided by IPCC in Guidelines on National GHG Inventories 2006.
W_{OM}	Weighting of operating margin emissions factor	0.25	%	The parameter is taken as default on the basis of data provided in Tool to calculate emission factor for an electricity system Version 2.2.1 /B07/.
W_{BM}	Weighting of build margin emissions factor	0.75	%	The parameter is taken as default on the basis of data provided in Tool to calculate emission factor for an electricity system Version 2.2.1 /B07/.
Merit Order	The merit order in which power plants are dispatched by documented evidence	Data used is presented in the spreadsheet for Grid Emission Factor calculation /14/.	Text	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The value was checked from Emission factor calculation sheet /14/ and COES website /B05/.

Based on the review of MR /01-a/, registered CPA-DD /B04/ and interview with CME and respective CPA implementers VT concludes that:

- The monitoring has been carried out in accordance with the monitoring plan in the registered PoA DD /B04/.
- All parameters required by the monitoring plan have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

The verification took cognizance of §262 and 263 of the CDM PS for PoA (version 02.0) /B01-2/ and §346, 358, 359 and 360 of the CDM VVS for PoA (version 02.0)

/B01-1/.

E.3.4.3. Implementation of sampling plan

Means of verification	N/A
Findings	N/A
Conclusion	N/A

E.3.5. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	DR, I
Findings	--
Conclusion	<p>The monitoring equipment used for measurement of electricity is electricity meters. According to registered PoA-DD /B04/ & CPA-DD/B04/ calibration of the energy meters used for all the monitoring parameters, has to be done once in a three year. The electricity meters used for each of the CPAs were duly calibrated. The appropriate QA/QC procedures have been followed for the monitoring parameters.</p> <p>The details of the monitoring equipment's involved in the CPA are described as below:</p> <p>6198-P2-0001-CP2 (CPA 1):</p> <p>Meter 1: records electricity generation data Make: Power Logic TM (Schneider Electric) Model: ION 7550 SI. No.: MI-1206A729-03 Date of previous calibration /08-1/: 28/10/2016 Validity of previous calibration /08-1/, /B04/: 27/10/2019. Date of recent calibration /08-2/: 08/11/2019 Validity /08-2/, /B04/: 07/11/2022 Accuracy class: 0.2</p> <p>Meter 2: records electricity consumption data Make: Elster Model: Alpha Plus A2 SI. No.: 16318318 Date of previous calibration /08-1/: 28/10/2016 Validity of previous calibration /08-1/, /B04/: 27/10/2019. Date of recent calibration /08-2/: 08/11/2019 Validity /08-2/, /B04/: 07/11/2022 Accuracy class: 0.2</p> <p>Through the review of the calibration records of all the energy meters, the VT confirms that the calibration is valid for the entire duration of the entire monitoring period under consideration. Furthermore, the frequency of calibration or the duration of validity of calibration of 3 years is in accordance with the host country regulation and the registered CPA-DD /B04/.</p> <p>The verification took cognizance of § 346 and § 351 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

E.3.6. Assessment of data and calculation of emission reductions or net removals**E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks**

Means of verification	DR, I
Findings	--
Conclusion	The equations for baseline emissions as provided in the monitoring report /01-a/ and confirmed with the registered CPA--DD /B04/ and the methodology AMS-I.D (version 18.0) /B02/ are:

For CPAs 6198-P2-0001-CP2 (CPA 1)

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid},\text{CM},y}$$

Where:

- BE_y = Baseline emissions in year y (tCO₂)
- EG_{facility,y} = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
- EF_{grid,CM,y} = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh) and based on the dispatch data provided by COES.

For CPA 6198-P2-0001-CP2 (CPA 1):

Parameter	Unit	Values
BE _y	tCO ₂ e	835
EG _{facility,y}	MWh	1581.03
EF _{grid,CM,y}	tCO ₂ /MWh	0.52838

The assessment team has checked the compliance of the emission factor calculations in the respective Emission Factor calculation sheets for CPA 1 and found that PP has correctly followed the step-by-step wise procedures of 'Tool to calculate the emission factor for an electricity system (version 2.2.1) /B07/, while determining the emission factors.

The EF_{grid,BM,y} is fixed ex-ante for the CPA. The assessment team has found that the ex-ante value of parameter EF_{grid,BM,y} was considered in the EF_{grid,CM,y} calculation and subsequently in the ER calculations.

The verification team confirms that the calculation of baseline emission and emission reductions is in accordance with the applied methodological equation and the registered CPA-DD /B04/. Calculations have been checked and confirmed from the ER spread sheet /02/.

The verification took cognizance of §358 of CDM VVS for PoAs (version 02.0) /B01-1/

E.3.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	DR, I
Findings	--
Conclusion	There are no project emissions identified in the monitoring methodology /B02/ and the registered CPA-DD /B04/.

E.3.6.3. Calculation of leakage GHG emissions

Means of verification	DR, I
Findings	--
Conclusion	There are no leakage emissions identified in the monitoring methodology /B02/ and the registered CPA-DD /B04/.

E.3.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	DR
Findings	
Conclusion	Verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered PoA-DD /B04/. The total number of ERs achieved during

	<p>the monitoring period is 835 tCO₂e.</p> <p>In summary, verification team confirms that actual emission reduction is lower than the estimate of the registered CPA-DD /B04/for the current monitoring period.</p> <p>The verification took cognizance of §358 of CDM VVS PoAs (version 02.0) /B01-1/.</p>
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Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
6198-P2-0001-CP2: Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1	835	0	0	0	835	835
Total	835	0	0	0	835	835

E.3.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA

Means of verification	DR, I
Findings	--
Conclusion	Comparison of the actual GHG emission reductions with the estimates in the included specific CPAs is given in the below table. The verification team took cognizance of §358 of CDM VVS for PoAs (version 02.0) /B01-1/.

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period	Value estimated in ex ante calculation in the included CPA-DD(s)
6198-P2-0001-CP2: Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1	835	2,644
Total	835	2,644

E.3.6.6. Remarks on difference from estimated value in included CPA

Means of verification	DR, I
Findings	
Conclusion	<p>Verification team confirms that actual emission reduction is lower than the estimate of the registered CPA-DD /B04/ for the current monitoring period.</p> <p>The verification team took cognizance of § 342 (d) and § 358 of VVS for PoAs (version 02.0) /B01-1/.</p>

E.3.7. Assessment of reported sustainable development co-benefits

Means of verification	DR, I
Findings	
Conclusion	Verification team confirms that actual emission reduction is lower than the estimate of the registered CPA-DD /B04/ for the current monitoring period.

	The verification team took cognizance of § 342 (d) and § 358 of VVS for PoAs (version 02.0) /B01-1/.
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E.3.8. Global stakeholder consultation

Means of verification	Not applicable
Findings	
Conclusion	Not applicable

SECTION F. Internal quality control

The verification report passed a technical review before being submitted to the UNFCCC Executive Board. A technical reviewer qualified in accordance with the CCIPL's qualification scheme for CDM validation and verification performed the technical review.

SECTION G. Verification opinion

Carbon Check (India) Private Ltd. (CC IPL) has performed the eighth (08th) periodic verification of the registered CDM Programme of Activities "PoA 6198: Tunki Small Scale Hydropower Program of Activities" in Peru (hereafter referred to as "PoA") for the CPA titled:

Sl. #	CPA Reference Number	Title of the CPA
1	6198-P2-0001-CP2	Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1

The verification team assigned by the DOE concludes that the registered PoA-DD (Version 7; Dated 27/11/2019) /B04/, CPA 6198-P2-0001-CP2 (CPA 1) as described in the registered CPA-DD /B04/ and the monitoring report (Version 04; Dated: 14/06/2021) /01-a/, meet all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM M& P, the modalities and procedures for CDM and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the requirements of CDM VVS for PoAs (version 02.0) /B01-1/.

Verification methodology and process:

The Verification team confirms the contractual relationship signed on 28/12/2020 between the DOE, Carbon Check (India) Private Ltd. and the CME, (Carbonbay GmbH & Co. KG). The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the CDM VVS for the PoAs (version 02.0) /B01-1/ and constitutes the review and completion of the following steps:

- Reviewing the registered PoA-DD (Version 7; Dated: 27/11/2019), the registered CPA-DD for CPA 6198-P2-0001-CP2 (CPA 1) and /B04/ including the monitoring plan and the corresponding validation report/s /B04/;
- Reviewing the Monitoring Reports and Verification Reports for the previous monitoring periods – MP 1, MP 2, MP 3, MP 4, MP 5 and MP 06 /B08/;
- Publication of the MR (Version 1; Dated: 10/02/2021) /01-d/ on the UNFCCC website on 18/02/2021
- Desk review of the registered PoA-DD, CPA-DD, MR and other relevant documents including documents related to the project activities in emission reductions
- Review of the applied monitoring methodology AMS-I.D. (version 18.0) /B02/;
- Review of any CMP and EB decisions, clarifications and guidance /B05/;
- Remote assessment: 17/03/2021
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

CDM-PoA-VCR-FORM

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the registered CPA-DD/ /B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on site visit the verification team confirms that the PoA has resulted in the 835 tCO₂e emission reductions during the Eighth (08th) monitoring period.

Verified emission reductions for the PoA: 835 tCO₂e.

The break-up of emission reduction from 19/09/2020 to 31/12/2020 (inclusive of both the dates) as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO ₂ e)	0	835

Break up of emission reductions CPA wise:

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period
6198-P2-0001-CP2: Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1	835
Total	835

SECTION H. Certification statement

Carbon Check (India) Private Ltd. (CC IPL) has performed the Eighth (08th) periodic verification of the registered CDM Programme of Activities “PoA 6198: Tunki Small Scale Hydropower Program of Activities” in Peru (hereafter referred to as “PoA”) for the CPA titled:

SI. #	CPA Reference Number	Title of the CPA
1	6198-P2-0001-CP2	Coelvihidro 1 Hydro Power Plant, Quipico – Tunki PoA CPA # 1

The PoA supports the development of new small-scale hydropower projects in Peru connected to the Peruvian National Electricity Grid (SEIN). Each CPA under this PoA has a combined installed capacity of no more than 15 MW, the threshold for the small-scale CDM projects.

The CPAs are designed to generate emission reductions by small-scale greenfield (CPA 1) hydropower projects which are connected to the Peruvian National Electricity Grid (SEIN). The CME and CPA implementer are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activity/ies. It is DOE's responsibility to express an independent verification statement on the reported GHG emission reductions from the component project/s. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PoA-DD/CPA-DD /B04/. The verification is carried out in-line with the requirements of CDM VVS for PoA (version 02.0) /B01-1/.

The verification was performed to identify the compliance of the component project activity/ies with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information during remote audit that included:

- i) Checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied; and
- ii) The collection of evidence supporting the reported data.

The verification is based on:

- Reviewing the registered PoA-DD (Version 7; Dated: 27/11/2019), the registered CPA-DD for CPA 6198-P2-0001-CP2 (CPA 1) /B04/ included in the registered PoA and its monitoring plan
- MR (Version 1; Dated: 10/02/2021)/01-d/, MR (Version 2; Dated 09/05/2021 /01-c/, MR (Version 03; Dated 30/05/2021) /01-b/ and MR Version 4 dated 14/06/2021 /01-a/ for monitoring period 19/09/2020 to 31/12/2020 (inclusive of both the dates).
- Approved monitoring methodology AMS- I.D. Grid connected renewable electricity generation (version 18.0) /B02/;
- Validation report for the PoA and the CPA /B04/;
- Reviewing the Monitoring Reports and Verification Reports for the previous monitoring periods – MP 1, MP 2, MP 3 MP4, MP 5 and MP6 /B08/

This statement covers verification period from 19/09/2020 to 31/12/2020.

The DOE had raised (0) clarification requests and (05) corrective action requests, all of which have been successfully resolved by the CME.

The DOE considers it necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered CPA-DD /B04/ are fairly stated.

The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 835 tCO₂ equivalent and all monitoring requirements have been fulfilled and is

substantiated by an audit trail that contains evidence and records. The break-up of emission reduction from 19/09/2020 to 31/12/2020 as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO ₂ e)	0	835

Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CL	Clarification Request
CME	Co-ordinating and Managing entity
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CO ₂	Carbon Dioxide
DR	Document review
DOE	Designated Operational Entities
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MWh	Mega Watt Hour
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
OSV	On Site Visit
QC/QA	Quality control/Quality assurance
RMP	Revised Monitoring Plan
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Ltd.

Amit Anand

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Assessor ¹	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input checked="" type="checkbox"/>	TA 3.1	<input checked="" type="checkbox"/>	TA 5.2	<input type="checkbox"/>	TA 9.2	<input type="checkbox"/>	TA 13.2	<input type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input type="checkbox"/>	TA 8.1	<input checked="" type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input checked="" type="checkbox"/>
TA 2.1	<input type="checkbox"/>	TA 5.1	<input type="checkbox"/>	TA 9.1	<input type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		

Vikash K. Singh

Mr. Vikash Kumar Singh
Compliance Officer

Date of Approval
24/12/2020

Valid Till
24/12/2021

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2017	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision
24/12/2019	Annual Revision
01/03/2020	Interim Revision for office address change
01/09/2020	Interim Revision for CCIPL logo change
24/12/2020	Annual Revision

¹ India and South Africa

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Carbon Check (India) Private Ltd.

Francisco Acuna Carter


has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

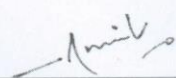
For following functions:

Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Assessor ¹	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input type="checkbox"/>	TA 3.1	<input type="checkbox"/>	TA 5.2	<input type="checkbox"/>	TA 9.2	<input type="checkbox"/>	TA 13.2	<input checked="" type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input type="checkbox"/>	TA 8.1	<input type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input type="checkbox"/>
TA 2.1	<input type="checkbox"/>	TA 5.1	<input type="checkbox"/>	TA 9.1	<input type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		


Mr. Vikash Kumar Singh
 Compliance Officer


Mr. Amit Anand
 CEO

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¹ Chilli, Mexico

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Carbon Check (India) Private Ltd.

Vikash Kumar Singh

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Assessor ¹	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input checked="" type="checkbox"/>	TA 3.1	<input checked="" type="checkbox"/>	TA 5.2	<input type="checkbox"/>	TA 9.2	<input type="checkbox"/>	TA 13.2	<input checked="" type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input checked="" type="checkbox"/>	TA 8.1	<input type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input type="checkbox"/>
TA 2.1	<input type="checkbox"/>	TA 5.1	<input type="checkbox"/>	TA 9.1	<input type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		

Mr. Amit Anand
CEO

Date of Approval
24/12/2020

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24/12/2019	Annual Revision
01/03/2020	Interim Revision for office address change
01/09/2020	Interim Revision for CCIPL logo change
24/12/2020	Annual Revision

¹ India, South Africa

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Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	CME	a) Final MR	Version 04 Dated 14/06/2021	CME
		b) Interim version of MR	Version 03 Dated: 30/05/2021	
		c) Interim version of MR	Version 02 Dated 09/05/2021	
		d) Webhosted MR	Version 1 Dated: 10/02/2021	
/02/	CME	a) Final ER sheet	ER sheet CPA 1 ER sheet 2nd CP 30052021	CME
		b) Interim version of ER sheet	ER sheet CPA 1 ER sheet 2nd CP 10052021	
		c) Initial version of ER sheet	CDM ER sheet CPA 1 ER sheet 2nd CP	
Documents for 6198-P2-0001-CP2 (CPA 1)				
/03/	COES SINAC	Evidence of the commissioning of the hydro project	Ref. No.: COES/D/DP-992-2013; Dated:12/09/2013	CME
/04/	--	Evidence for the technical specifications of the project equipment (turbine, generators and monitoring equipment i.e. electricity meters) (photographs of name plate data/information)	--	CME
/05/	COELVISAC & Electrica Santa Rosa	Agreement for the sale of power with registered users: 1. Agreement between COELVISAC and Electrica Santa Rosa SAC 2. Addendum between COELVISAC and Electrica Santa Rosa SAC 3. Agreement with other registered users 4. Purchase agreement between COELVISAC and Electrica Santa Rosa SAC	1. Dated: 07/12/2015 2. Dated: 07/02/2014 3. Dated: 07/12/2005 4. Dated: 17/07/2018	CME
/06/	COELVISAC	Plants records-for electricity meter readings (Gross generation, auxiliary consumption and net electricity supplied) covering the entire monitoring period	--	CME
/07/	COELVISAC & Electrica Santa Rosa	1. Copies of invoices 2. Spread sheet for the cross check of electricity sold to the registered users for cross check of the energy meter readings covering the monitoring period	--	CME

/08/	Trinity Technology	Calibration certificates for the electricity meters (MI-1206A729-03 and 16318318) valid up to 07/10/2022		CME
/09/	COES SINAC	Evidence (proof) of data used to calculate OM for the monitoring period. http://www.coes.org.pe/Portal/home/	--	CME
/10/	--	Manufacturer specification of the electricity meter used (photographs of name plate data/information)	--	CME
/11/	COELVISAC	Line diagram showing the electricity generation, transmission, evacuation, including the grid connectivity until 220 kV Huacho SS of SEIN (COES).	--	CME
/12/	COELVISAC	Proof of training conducted	--	CME
/13/	E & P Technología Del Peru SAC	Technical report on the configuration and verification of accuracy class of the energy meters	Ref. No.: DOC.E&P-Proy/2018-031; Version: 01; Dated: 30/07/2018	CME
/14/	CME	Grid Emission factor sheet for CPA 6198-P2-0001-CP2	Quipico EF 2019-2020	CME
/15/	CDM EB	Notification: CDM Executive Board agrees to relax mandatory site visits by DOEs until 31 December 2021 because of COVID-19 ²	http://cdm.unfccc.int/	Others
/B01/	UNFCCC	1. CDM VVS for PoAs 2. CDM PS for PoAs 3. CDM PCP for PoAs	Version 02.0	Others
/B02/	UNFCCC	AMS-I.D. Grid connected renewable electricity generation (version 18.0)	http://cdm.unfccc.int/	Others
/B03/	UNFCCC	Instructions for filling out the monitoring report form for CDM programme of activities Version 04.0	http://cdm.unfccc.int/	Others
/B04/	UNFCCC	Registered documents: • Registered PoA-DD (version 7, dated 27/11/2019) CPA-DD for 6198-P2-0001-CP2 (CPA 1) Corresponding validation reports for PoA-DD and CPA-DD.	http://cdm.unfccc.int/	Others
/B05/	Web sites	Websites: http://cdm.unfccc.int/ http://www.coes.org.pe/Portal/home/	--	Others
/B06/	UNFCCC	SSC_530 Clarification on the maximum output capacity for a project activity applying AMS-I.D.	http://cdm.unfccc.int/	Others
/B07/	UNFCCC	Tool to calculate emission factor for an electricity system Version	http://cdm.unfccc.int/	Others

² https://cdm.unfccc.int/newsroom/latestnews/releases/2020/01041_index.html

		2.2.1		
/B08/	UNFCCC	Documents (Monitoring report, Verification report and other documents) of previous issuances (1st, 2nd, 3rd ,4 th ,5th and 6th) as available on UNFCCC website.	http://cdm.unfccc.int/	Others
/B09/	UNFCCC	Guidelines: Application of materiality in verifications (version 02.0)	http://cdm.unfccc.int/	Others

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FARs from validation and/or previous verification

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY

Table 2. CLs from this verification

CL ID	xx	Section no.		Date: DD/MM/YYYY
Description of CL				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY

Table 3. CARs from this verification

CAR ID	01	Section no.		Date: 19/04/2021
Description of CAR				
For parameter W_{BM} , in the row titled "Value for monitored parameter", it is stated as $W_{OM}=0.75$. The same is not in accordance with description of the parameter provided in the MR and registered CPA-DD.				
CME response				Date: 09/05/2021
Section E.1 and E.2 of MR has been revised – table for the parameter W_{OM} and W_{BM} have been corrected accordingly				
Documentation provided by the CME				
MR v02				
DOE assessment				Date: 16/05/2021
The required correction has been made by the PP in section E.1 of the MR and the revised MR is submitted to DOE, hence CAR 01 is closed				

CAR ID	02	Section no.		Date: 19/04/2021
Description of CAR				
The reference for the value of EF _{grid,OM-DD,y} considered in the ER calculation sheet is provided as EF sheet.				
PP is requested to provide the Grid Emission Factor sheet for cross checking the values.				
CME response				Date: 09/05/2021
Grid EF calculation sheet for 2020 has been provided				
Documentation provided by the CME				
Grid EF (2020) calculation sheet				
DOE assessment				Date: 16/05/2021
Grid Emission Factor sheet has been provided by the PP and hence CAR 02 is closed.				

CAR ID	03	Section no.		Date: 19/04/2021
Description of CAR				
In section B.1 of MR, the date of calibration of the meters falls under CPA1 is mentioned. PP is requested to provide the calibration certificates as evidence for the same.				
CME response				Date: 09/05/2021
Calibration reports of meters have been provided				
Documentation provided by the CME				
Meter calibration for the year 2019				
DOE assessment				Date: 16/05/2021
Calibration certificate of meters has been provided by the PP and hence CAR 03 is closed now.				

CAR ID	04	Section no.		Date: 19/04/2021
Description of CAR				
PP is requested to provide the documentary evidence (Gross generation, auxiliary consumption and net electricity supplied) for the values considered as EGPJ,y(MWh) used for the calculation of emission reduction in ER calculation sheet.				
CME response				Date: 09/05/2021
Documentary evidence (Gross generation, auxiliary consumption and net electricity supplied) for the values considered as EG PJ,y(MWh) used for the calculation of emission reduction in ER calculation sheet				
Documentation provided by the CME				
Electricity generation data every 15 minutes interval for the period 19/09/2020 to 31/12/2020				
DOE assessment				Date: 16/05/2021
Generation data sheet is provided as evidence for the values considered as EGPJ,y(MWh) used for the calculation of emission reduction in ER calculation sheet and hence CAR 04 is closed.				

CAR ID	05	Section no.		Date: 19/04/2021
Description of CAR				
As mentioned in section D of MR, Training and Monitoring Personnel "All people that participate in the monitoring process will be suitably qualified and trained in the operation and maintenance of the plant. They will also receive a training session on the application of the monitoring plan" PP is requested to provide the evidence for the same.				
CME response				Date: 09/05/2021
Training records of Monitoring Personnel have been provided				
Documentation provided by the CME				
Training records of CDM Monitoring Team				
DOE assessment				Date: 16/05/2021
Training records are provided by the PP and hence CAR 05 is closed.				

Table 4. FARs from this verification

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: <ul style="list-style-type: none"> • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN); • Make structural and editorial improvements.
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		