



**Verification and certification report form for  
CDM programme of activities  
(Version 03.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	Guacamaya Small Scale Hydropower Programme of Activities (8950)	
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	Version 7 dated 04/12/2012	
<b>Version number of the verification and certification report</b>	02	
<b>Completion date of the verification and certification report</b>	08/01/2020	
<b>Monitoring period number and duration of this monitoring period</b>	02 <sup>nd</sup> , 01/05/2017 – 31/08/2019 (including both dates)	
<b>Number and version number of the monitoring report to which this report applies</b>	01, version 03	
<b>Coordinating/managing entity (CME)</b>	Anaconda Carbon S.A.	
<b>Host Parties</b>	<b>Host Parties of the PoA</b>	<b>Is this a host Party to a CPA covered in this report? (yes/no)</b>
	Honduras	Yes
	Nicaragua	No
	Costa Rica	No
<b>Applied methodologies and standardized baselines</b>	Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)	
<b>Mandatory sectoral scopes</b>	AMS- I.D., version 17- Grid connected renewable electricity generation.	
<b>Conditional sectoral scopes, if applicable</b>	NA	
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report</b>	94,967 tCO <sub>2</sub> e (8950-P1-0002-CP1: 26,843 tCO <sub>2</sub> e + 8950-P1-0003-CP1: 68,124 tCO <sub>2</sub> e)	
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	68,459 tCO <sub>2</sub> e	
<b>Name and UNFCCC reference number of the DOE</b>	Carbon Check (India) Private Ltd.(E-0052)	
<b>Name, position and signature of the approver of the verification and certification</b>	Amit Anand, CEO	

report	
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## SECTION A. Executive summary

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The Project Participant has appointed the DOE, Carbon Check (India) Private Ltd. to perform an independent verification of the CDM Programme of Activities “PoA 8950: Guacamaya Small Scale Hydropower Programme of Activities” in Honduras, Nicaragua and Costa Rica (hereafter referred to as “Programme of Activities or PoA”) for the CPAs titled “Zinguizapa Small – Scale Hydropower Project” (Reference number: 8950-P1-0002-CP1) and “Puringla Sazagua Small Scale Hydropower Project” (Reference number: 8950-P1-0003-CP1). The PoA supports the development of new small-scale hydropower projects in Honduras, Nicaragua and Costa Rica that supply electricity to the respective national grid. Each CPA under this PoA has a combined installed capacity of no more than 15 MW, the threshold for small-scale CDM projects.

During the current monitoring period, the CPAs 8950-P1-0002-CP1 (CPA 02) and 8950-P1-0003-CP1 (CPA 03) were only implemented and the CPA 8950-P1-0001-CP1 (CPA 1) was not implemented. CPA 1 (8950-P1-0001-CP1) is not included in this monitoring report. The CPAs are designed to generate emission reductions by new small-scale hydropower project activities in Honduras that supply electricity to the respective national grid ENEE (Honduran National Electricity Company) and displace electricity that is otherwise produced by coal and fossil fuels. 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 achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the “Guacamaya Small Scale Hydropower Programme of Activities” in the host country Honduras, Nicaragua and Costa Rica for the period 01/05/2017 to 31/08/2019.

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 the approved revised CPA-DD and the approved monitoring methodology.

### Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the approved revised CPA-DD

- To verify the implemented monitoring plan with the approved revised CPA-DD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- 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 covering the monitoring period from 01/05/2017 to 31/08/2019 and based on the approved revised CPA-DDs including the monitoring plan, emission reduction calculation spread-sheet, monitoring methodology and all related evidence provided by project participant.

On-site visit and stakeholders' interviews are also performed as part of the verification process.

The verification team assigned by the DOE concludes that the registered PoA-DD /B04/, CPAs 8950-P1-0002-CP1 (CPA02) and 8950-P1-0003-CP1 (CPA03), as described in the approved revised CPA-DDs /B04/ and monitoring report /01-b/), 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 (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the VVS requirements Version 02.0 /B01-1/.

The component project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the approved revised CPA-DD/s. 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 68,459 tCO<sub>2</sub>e emission reductions during the third monitoring period.

CC IPL, as a DOE, is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

**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	IR	Singh	Vikash Kumar	CC IPL	X	X	X	X
2.	Verifier	IR	Singh	Vikash Kumar	CC IPL	X	X	X	X
3.	Technical Expert	IR	Singh	Vikash Kumar	CC IPL	X	X	X	X
4.	Local Expert	EI	Valladares	Katherine	CC IPL		X	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	Anand	Amit	CC IPL
2.	Approver	IR	Anand	Amit	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 potential risk		Assessment of the records/information/interview with personnel to check controls/ mitigation measures
		Risk level	Justification	
1.	Human Error: Recording and reporting of the information in the ER spreadsheet.	<i>Medium</i>	<p>According to the monitoring plan and the Monitoring Report, there are QA/QC procedures applied for monitoring parameters and data management/information flow.</p> <p>Calculation spreadsheets are used to determine the emissions reductions. Further data collected are through calibrated meters and automated system.</p>	<p>Verification team of CC IPL has focused its assessment on the following:</p> <ul style="list-style-type: none"> <li>• Procedure of raw data collection/ Monitoring procedures.</li> <li>• Data &amp; information flow with a special focus on any material mistake</li> <li>• Calculation spreadsheets.</li> <li>• Procedures/QA/QC established to detect and correct any error or omission in monitoring parameters.</li> <li>• Quality control for monitored parameters and metering systems.</li> <li>• Complete verification (100 % data) of all the monitoring records (measurement records, invoices and the calibration certificates) shall be done by the verification team and compared with the values indicated in the emission reduction spread-sheet. No risk identified.</li> </ul> <p>CAR-02, CAR-03, CAR-04 and CAR-05 have been raised and satisfactorily closed.</p>
2.	Accuracy of the measuring equipment	<i>High</i>	Data collected through calibrated meters and automated system.	The risk can be mitigated by reviewing the calibration certificates of the electricity meters. CL-01 has been raised in this context and satisfactorily closed.

## C.2. Consideration of materiality in conducting the verification

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The threshold of materiality was evaluated based on §13 of “Guideline: Application of materiality in verifications” (version 02.0) /B08/ 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

- 8950-P1-0002-CP1 (CPA02): 22,294<sup>1</sup> tCO<sub>2</sub>e which is equal to 1115 tCO<sub>2</sub>e.
- 8950-P1-0003-CP1 (CPA03): 48,688<sup>2</sup> tCO<sub>2</sub>e which is equal to 2434 tCO<sub>2</sub>e.

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 1115 and 2434 tCO<sub>2</sub>e for CPA02 and CPA03 respectively 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 on-site 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 spread sheet.

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

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

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<sup>1</sup> Values as per monitoring report published for GSC

<sup>2</sup> Values as per monitoring report published for GSC

## D.2. On-site inspection

Duration of on-site inspection: 14/10/2019 to 16/10/2019				
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, approved revised CPA-DDs.	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
3.	Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the approved revised CPA-DD	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
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	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the approved revised CPA-DD and the selected methodology and corresponding tool(s), where applicable	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares
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	CPA002 and CPA003 site	14/10/2019 to 16/10/2019	Vikash Kumar Singh Katherine Valladares

## D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Giles	Christian	Anaconda Carbon S.A.	14/10/2019 to 16/10/2019	Project operation, CER calculation and completeness of monitoring report, Quality Assurance – Management and operating system, compliance of monitoring plan with monitoring methodology and approved revised CPA-DDs.	Vikash Kumar Singh Katherine Valladares
2.	Larios	Paola	Anaconda Carbon	15/10/2019	Project operation, CER calculation	Vikash Kumar Singh Katherine Valladares

			S.A.		and completeness of monitoring report.	
3.	Maradiaga	Pablo	GA Energy (CPA002)	14/10/2019	Project implementation and operation, monitoring procedure, data and information flow, Roles and responsibility, Quality Assurance – Management and operating system, Qualification and Training	Vikash Kumar Singh Katherine Valladares
4.	Montoya	Miguel	GA Energy (CPA002)	14/10/2019	Project technical specification and operation including metering and QA/QC	Vikash Kumar Singh Katherine Valladares
5.	Quiroz	Marvin	GA Energy (CPA002)	14/10/2019	Project technical specification and operation including metering and QA/QC	Vikash Kumar Singh Katherine Valladares
6.	Panchame	Kevin	CECA(CPA 003)	15/10/2019	Project implementation and operation, monitoring procedure, data and information flow, Roles and responsibility, Quality Assurance – Management and operating system, Qualification and Training	Vikash Kumar Singh Katherine Valladares
7.	Villatoro	Sorge	CECA(CPA 003)	15/10/2019	Project technical specification and operation including metering and QA/QC	Vikash Kumar Singh Katherine Valladares
8.	Malolonado	Jorge	CECA(CPA 003)	15/10/2019	Project technical specification and operation including metering and QA/QC	Vikash Kumar Singh Katherine Valladares
9.	Argueta	Jose	CECA(CPA 003)	15/10/2019	Project technical specification and operation including metering and QA/QC	Vikash Kumar Singh Katherine Valladares

**D.4. Sampling approach**

N/A



## 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
<b>General</b>			
Compliance of the monitoring report with the monitoring report form	--	01	--
Remaining forward action requests from validation and/or previous verifications	--	--	--
CPAs considered for verification and covered in this report	--	--	--
<b>Programme of activities</b>			
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 <sup>3</sup>	--	--	--
• Changes to the programme design	--	--	--
• Addition of CPA inclusion template	--	--	--
• Change of coordinating/managing entity	--	--	--
• Changes specific to afforestation and reforestation activities	--	--	--
<b>Component project activities</b>			
Compliance of the CPA implementation with the included CPA design document	--	01	--
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			
• Data and parameters fixed ex ante or at renewal of crediting period	--	--	--
• Data and parameters monitored	--	02	--
• Implementation of sampling plan	--	--	--
Compliance with the calibration frequency requirements for measuring instruments	01	01	--
Assessment of data and calculation of emission reductions or net removals			

<sup>3</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

• 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 (please specify)	--	--	--
<b>Total</b>	01	05	00

## SECTION E. Verification findings

### E.1. General

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

<b>Means of verification</b>	DR, I
<b>Findings</b>	CAR-01 has been raised and satisfactorily closed.
<b>Conclusion</b>	<p>The latest available version of the Monitoring report form for CDM programme of activities is version 03.0 /B03/. Verification team confirms that the latest available version has been used by the CME and the MR /01-b/ is in compliance of the monitoring report form with the relevant form and instructions therein /B03/.</p> <p>CC IPL had made the MR (version 1.2, dated 05/09/2019) for CPAs 8950-P1-0002-CP1 and 8950-P1-0003-CP1, covering the monitoring period from 01/05/2017 to 31/08/2019 (both days inclusive) was made publicly available on 06/09/2019. The site visit was conducted on the dates as mentioned above after completion of 21 days of webhosting for public comments period.</p> <p>This confirms compliance with the §338 and §339 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

#### E.1.2. Remaining forward action requests from validation and/or previous verifications

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There were no forward action requests during the previous (01<sup>st</sup>) 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)
8950-P1-0001-CP1: San Alejo Hydroelectric Project	NO	20/12/2012	Version: 7 Date: 04/12/2012	N

8950-P1-0002-CP1: Zinguizapa Small – Scale Hydropower Project	YES	28/06/2016	Version: 7 Date: 04/12/2012	Y
8950-P1-0003-CP1: Puringla Sazagua Small Scale Hydropower Project	YES	28/06/2016	Version: 7 Date: 04/12/2012	Y

## E.2. Programme of activities

### E.2.1. Compliance of the programme implementation with the registered programme design document

<b>Means of verification</b>	DR, I
<b>Findings</b>	--
<b>Conclusion</b>	<p>As part of the site visit, the verification team was able to confirm that the implementation of Programme of Activity (PoA) and the Component Project Activities (CPAs) are in accordance with the project description contained in the approved revised CPA-DDs (CPA02 and CPA03) /B04/.</p> <p>Verification team confirms that the programme has been implemented as per the registered PoA-DD /B04/. This confirms the compliance of §340, §341 and §342 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

### E.2.2. Implementation and operation of the management system

<b>Means of verification</b>	DR, I
<b>Findings</b>	--
<b>Conclusion</b>	<p>The PoA management system including the record-keeping system has been explained in section C of the registered PoA-DD /B04/. During the course of verification, verification team based on review of provided documents and OSV 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 roles and responsibilities, operational diagram, training and capacity development records, procedures for technical review and inclusion of CPAs, procedures to assert legal rights for the carbon credits and avoid double counting, records and documentation control process for each CPA under the PoA, Measures for continuous improvements of the PoA management system. As outlined in section B.5 of the approved revised CPA-DDs /B04/ and section D of MR, 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, Anaconda Carbon S.A.</p> <p>In order to ensure completeness and accuracy of monitoring information, electronic database(s) is operated and maintained by the CPA implementer. This information is further maintained by the CME. The provision for the avoidance of double counting as outlined in the PoA management system. It was confirmed during the OSV 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-b/. The data flow and management and reporting structure was also checked during the site visit.</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-b/.</p>

	The verification team confirms that the monitoring management system of the CDM PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of §340 (a), § 347 (b) (iv) and §347 (e) of CDM VVS PoAs (version 02.0) /B01-1/.
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**E.2.3. Post-registration changes**

**E.2.3.1. Corrections**

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N/A

**E.2.3.2. Inclusion of a monitoring plan**

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N/A

**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**

>>  
N/A

**E.2.3.4. Changes to the programme design**

>>  
N/A

**E.2.3.5. Addition of CPA inclusion template**

>>  
N/A

**E.2.3.6. Change of coordination/managing entity**

>>  
N/A

**E.2.3.7. Changes specific to afforestation and reforestation activities**

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N/A

**E.3. Component project activities**

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

<b>Means of verification</b>	DR,I
<b>Findings</b>	CAR-04 has been raised and satisfactorily closed.
<b>Conclusion</b>	As part of the site visit, the verification team was able to confirm that implementation of Programme of Activity (PoA) and the Component Project Activities (CPAs) is in accordance with the project description contained in the approved revised CPA-DDs /B04/. The verification took cognizance of the verification team took cognizance of §340, §341 and §342 of the CDM VVS for PoA (version 02.0) /B01-1/.  <b><u>Verified Project Description of 8950-P1-0002-CP1 (CPA02):</u></b>  As verified during the on-site inspection, the CPA is a run of river hydropower plant; it involves the construction of the intake structure, the water conveyance system

and the powerhouse. Verification team based on review of approved revised CPA-DD /B04/ and on-site inspection confirms that the project is a run-of-the-river because it does not have a reservoir to store water and thus relies on the natural water flow of the river.

Based on review of provided evidence /04/ and on-site physical inspection, verification team confirms that the turbine installed is of 3.276 MW and the installed capacity of the generator is of 3222 KVA. During the on-site inspection, the assessment team has verified the actual installed capacity of the turbine generator as 3222 KVA i.e.  $3222 \times 0.9 = 2899 \text{ KW} = 2.899 \text{ MW}$ , where 3222KVA is the alternator capacity in KVA ratings & 0.9 is the power factor of the generator. It is verified that a transmission line is connected the powerhouse to a substation located in the community of El Volcan, in the Department of Comayagua. Based on review of provided evidence /06/, /07/ /09/, it is confirmed that the electricity generated from the project has been supplied to ENEE (Honduran National Electricity Company) during the reported monitoring period and also that the project displaces electricity that is otherwise produced by coal and fossil fuels.

Verification team based on site inspection confirms that following component of the project:

- a bypass dam,
- conduction and pressure pipelines,
- a powerhouse with a control room, and
- transmission line that leads to the substation which then feeds electricity to the “Sistema Interconectado Nacional” of Honduras, (National Interconnected System) which is operated by ENEE.

Verification team during the on-site inspection noted that the water discharged from the powerhouse re-entering the river through an energy dissipation system. All of the electricity produced is measured on site with SCADA equipment and at the substation. As per the approved revised CPA-DD /B04/, the operational lifetime is expected to be of 30 years.

Verification team during on-site inspection confirms that the electricity supplied to the grid by the project activity is measured by calibrated electricity meters which are located at the point of connection to the grid, in the community of “El Volcan”, Comayagua.

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

It was confirmed during OSV that Anaconda Carbon S.A. is the Co-ordinating/Managing Entity for the PoA. The actual project activity is in line with the approved revised CPA-DD /B04/. G.A. Energy S.A. de C.V. is the CPA implementer/ programme activity implementer for CPA02 included in the PoA.

#### The actual operation of the CDM project activity

The starting date of the CPA02 is 27/10/2011 as per the CPA-DD /B04/ and the commercial operation of the project started on 01/04/2015 as verified from the commissioning certificate /04/. During the reported monitoring period, the CPA has supplied 35,171.03 MWh /06/, /07/ of electricity to the ENEE and thus displaces 21,886 tCO<sub>2e</sub> of emission reduction during the period. The measurement of supplied electricity is being carried out by electricity meters /08/ as per the provision delineated in the Power Purchase Agreement signed /05/ between the CPA Implementer & ENEE. Verification team confirms that project has obtained all statutory clearances /10/ as required for its implementation and operation.

Carbon Check’s verification team confirms that the CPAs 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 approved revised CPA-DD /B04/.

**Verified Project Description of 8950-P1-0003-CP1 (CPA03):**

As verified during the on-site inspection, the CPA is a run of river hydropower plant and it involves the construction of the intake structure, the water conveyance system and the powerhouse. Verification team based on review of approved revised CPA DD /B04/ and on-site inspection confirms that the project is a run-of-the-river because it does not have a reservoir to store water and thus relies on the natural water flow of the river. Verification team during on-site inspection noted that the water is diverted from the Puringla and Sazagua rivers, it goes through three vertical axis Francis turbines and is subsequently discharged to the Puringla river, which later connects to the Sazagua river.

Verification team based on review of provided evidence /14/ and on-site inspection confirms that the project consists of three Francis turbines with individual capacity of 3.383 MW and three generators of 3900 KVA. During the on-site inspection, the assessment team has verified the actual installed capacity of the turbine generator as 3900KVA i.e.  $3900 \times 0.85 = 3,315 \text{KW} = 3.315 \text{MW}$ , where 3900KVA is the alternator capacity in KVA ratings & 0.85 is the power factor of the generator. The total verified installed capacity of the project based on generator capacity is 9.945 MW (3 multiplied by 3.315). Based on review of provided evidence /06/, /07/, it is confirmed that the electricity is supplied to ENEE (Honduran National Electricity Company) and displace electricity that is otherwise produced by coal and fossil fuels. This electricity is supplied to the Honduran national grid via a 10-km long transmission line that is located near the city of Siguatepeque.

Verification team based on site inspection confirms that following component of the project:

- a bypass dam,
- conduction and
- pressure pipelines,
- a powerhouse with a control room,
- and transmission line.

As per the approved revised CPA-DD /B04/, the operational lifetime is expected to be of 30 years.

Verification team during on-site inspection confirms that the electricity supplied to the grid by the project activity is being measured by calibrated electricity meters which are located in the point of connection to the grid, which in this case is outside the powerhouse, next to the substation, which is located in the same building as the powerhouse.

It was confirmed during OSV that Anaconda Carbon S.A. is the Co-ordinating/Managing Entity for the PoA. The actual project activity is in line with the approved revised CPA-DD /B04/. Compañía Eléctrica Centroamericana S.A. de C.V. is the CPA implementer/ programme activity implementer for CPA03 included in the PoA.

The actual operation of the CDM project activity

The starting date of the CPA03 is 28/09/2012 as per the approved revised CPA-DD /B04/ and the commercial operation of the project started on 01/04/2015 as verified from the commissioning certificate /13/. During the reported monitoring period, the CPA has supplied 74,841.13 MWh /16/, /17/ of electricity to the ENEE and thus displaces 46,573 tCO<sub>2</sub> of emission reduction during the period. The measurement of supplied electricity is being carried out by electricity meters /18/ as per the provision delineated in the Power Purchase Agreement signed /15/ between the CPA Implementer & ENEE. Verification team confirms that project has obtained all statutory clearances /20/ as required for its implementation and operation.

Carbon Check's verification team confirms that the CPAs are implemented within the boundary of the PoA as described in the registered PoA-DD /B04/ and the

	<p>implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PoA-DD /B04/ and approved revised CPA-DDs /B04/.</p> <p>Verification team further confirms that no other emission source (which is not covered by the approved revised CPA-DDs /B04/ and the applied methodology /B02/) were found at both the CPA sites, as verified during the on-site inspection. Furthermore, the calculation of power density is not applicable for both the CPAs as it is run of river project and does not involve construction of any reservoir, the same was verified during the on-site inspection. In summary, the monitoring period is reasonable, and the operation of the CPAs is in accordance with the registered (included) CPA-DD/s /B04/.</p> <p>The verification team took cognizance of §340, §341 and §342 of the CDM VVS for PoA (version 02.0) /B01-1/ and has assessed the project in order to check any proposed or actual changes to the project design. Carbon Check's verification team confirms that the CPAs 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 the approved revised CPA-DDs /B04/.</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**

>>  
N/A

#### **E.3.2.2. Corrections**

>>  
There were corrections in CPA DD of CPA 002 and 003 and it was approved as a part of issuance of 1<sup>st</sup> periodic verification.

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

>>  
N/A

#### **E.3.2.4. Inclusion of a monitoring plan**

>>  
N/A

#### **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**

>>  
There were revisions in monitoring plan of CPA DD of CPA 002 and 003 and it was approved as a part of issuance of 1<sup>st</sup> periodic verification.

#### **E.3.2.6. Changes to the project design**

>>  
N/A

#### **E.3.2.7. Changes specific to afforestation and reforestation activities**

>>

N/A

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

<b>Means of verification</b>	DR
<b>Findings</b>	-
<b>Conclusion</b>	<p>The verification team is able to confirm that the monitoring plan contained in the approved revised CPA-DDs is in accordance with the approved methodology applied by the project activity, i.e. AMS-I.D (version 17.0) /B02/.</p> <p>The monitoring plan is in accordance with the approved methodology, AMS-I.D (version 17.0) /B02/, applied by the component project activity and as provided in the approved revised CPA-DDs /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**

<b>Means of verification</b>	DR
<b>Findings</b>	-
<b>Conclusion</b>	<p>Verification team confirms that the Data and parameters fixed ex ante are in compliance with the approved revised CPA-DDs and monitoring plan.</p> <p>The verification took cognizance of §346 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>

**E.3.4.2. Data and parameters monitored**

<b>Means of verification</b>	DR,I										
<b>Findings</b>	CAR-02 and CAR-05 has been raised.										
<b>Conclusion</b>	<p>All relevant monitoring parameters (as listed in section D. 7.1 of the approved revised CPA-DDs /B04/ and E.2 of the MR /01-b/) 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.</p> <table border="1" data-bbox="448 1375 1442 1805"> <thead> <tr> <th>Parameter</th> <th>Description</th> <th>Value</th> <th>Unit</th> <th>Assessment</th> </tr> </thead> <tbody> <tr> <td>(EG<sub>y</sub>)</td> <td>Quantity of net electricity supplied to the grid in year y</td> <td> <b>8950-P1-0002-CP1 (CPA 02):</b>                      35,171.03 MWh   <b>8950-P1-0003-CP1 (CPA03):</b>                      74,841.13 MWh                 </td> <td>MWh</td> <td>The values in the monitoring report were compared against the values in ER sheet /02/ and has been checked with monthly generation report /06/, /16/ and further cross checked with invoices /07/, /17/ of sold electricity.</td> </tr> </tbody> </table> <p>The verification took cognizance of §346, §358 and §359 of CDM VVS for PoAs (version 02.0) /B01-1/:</p> <ul style="list-style-type: none"> <li>The monitoring has been carried out in accordance with the monitoring plan in the registered PoA DD /B04/.</li> <li>All parameters required by the monitoring plan have been measured / determined without (subject to closure of all findings) material misstatements and in line with all applicable standards and relevant requirements.</li> </ul>	Parameter	Description	Value	Unit	Assessment	(EG <sub>y</sub> )	Quantity of net electricity supplied to the grid in year y	<b>8950-P1-0002-CP1 (CPA 02):</b> 35,171.03 MWh  <b>8950-P1-0003-CP1 (CPA03):</b> 74,841.13 MWh	MWh	The values in the monitoring report were compared against the values in ER sheet /02/ and has been checked with monthly generation report /06/, /16/ and further cross checked with invoices /07/, /17/ of sold electricity.
Parameter	Description	Value	Unit	Assessment							
(EG <sub>y</sub> )	Quantity of net electricity supplied to the grid in year y	<b>8950-P1-0002-CP1 (CPA 02):</b> 35,171.03 MWh  <b>8950-P1-0003-CP1 (CPA03):</b> 74,841.13 MWh	MWh	The values in the monitoring report were compared against the values in ER sheet /02/ and has been checked with monthly generation report /06/, /16/ and further cross checked with invoices /07/, /17/ of sold electricity.							



## 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	CL 01 and CAR 03 has been raised.
Conclusion	<p>The monitoring equipment used for measurement of electricity is electricity meters. According to registered PoA-DD /B04/ &amp; approved revised CPA-DDs /B04/ calibration of the meters used for all the monitoring parameters, has to be done once in a three year. This is in line with the calibration frequency mentioned in registered PoA-DD /B04/ &amp; approved revised CPA-DDs /B04/. 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 CPAs are described as below –</p> <p><b>8950-P1-0002-CP1 (CPA 02):</b>  Main meter (ENEE)  Schneider Electric ION 8650  Serial Number MW-1406A496-01  Class: 0.2  New Device installed on :26/11/2014  Validity of previous calibration until: 25/11/2017  Latest calibration date: 11/10/2019</p> <p>Backup meter (Zinguizapa HPP)  Schneider Electric ION 8650  Serial Number MW-1409A770-01  Class: 0.2  New Device installed on:26/11/2014  Validity of previous calibration until: 25/11/2017  Latest calibration date: 11/10/2019</p> <p><b>Note:</b> The calibration was delayed during the period 25/11/2017 until 31/08/2019 and was conducted after the end date of the monitoring period i.e. on 11/10/2019. In this context CAR 03 has been raised. The results of delayed calibration /12/ reveals that the error was within the maximum permissible error. Hence, in accordance with guidelines under Appendix-Calibration” of VVS for CDM PoAs (version 02.0) /B01-1/, the electricity export and import data have been adjusted by applying error of 0.2% (class as provided by the equipment supplier) to calculate the net exported electricity and the emission reductions accrued by the project activity. The accuracy class of 0.2% as provided by the equipment supplier was applied as the error identified in the delayed calibration is smaller than the maximum permissible error. The same is in accordance with the guideline provided under Appendix-Calibration” of VVS for CDM PoAs (version 02.0) /B01-1/.</p> <p>As per the approved revised CPA-DDs /B04/, “Device calibration is carried out periodically in accordance with manufacturer specifications where available. A calibration is to take place in case one of the meters is not functioning properly, which is deemed the case if there is more than a 1% difference in readings between the project meter and the utility meter. Calibration interval will not exceed 3 years, as per CDM standards.” It is verified /06/ by the verification team that the average difference of the reading of both the meters are well within 1 % during all the months of the monitoring period and thus the provision (which required meters to undergo to calibration immediately in case the difference of reading between two meters are more than 1 %) are not required to be adopted by the CPA implementers during the reported monitoring period.</p>

	<p><b>8950-P1-0003-CP1 (CPA 03):</b>                  Main meter (ENEE)                  Schneider Electric ION 8650                  Serial Number MW-1409A771-01                  Class: 0.2                  New Device installed on:12/11/2014                  Validity of previous calibration until:11/11/2017                  Latest calibration date: 20/11/2019</p> <p>Backup meter (Puringla Sazagua HPP)                  Schneider Electric ION 8650                  Serial Number MW-1206A274-01                  Class: 0.2                  New Device installed on:15/11/2014                  Validity of previous calibration until:14/11/2017                  Latest calibration date: 20/11/2019</p> <p><b>Note:</b> The calibration was delayed during the period 14/11/2017 until 31/08/2019 and was conducted after the end date of the monitoring period i.e. on 20/11/2019</p> <p>Verification team has reviewed the calibration certificate /22/ of CPA03 and found that the maximum error for meter (MW-1409A771-01) is 0.077%, whereas the maximum error for meter MW-1206A274-01 was 6.408%. It can be thus concluded that the meter MW-1409A771-01 was deemed appropriate for use and the meter 1409A771-01 was malfunctioned. The accuracy class of the meter as per MR is 0.2 and thus based on the fact that 6.408 % (maximum error out of the two meters) has been used for adjustment of electricity export and import and hence the revision can be acceptable. The same is in accordance with the guideline provided under Appendix-Calibration” of VVS for CDM PoAs (version 02.0) /B01-1/. VT deems this approach adopted by PP to address the issue of delayed calibration acceptable.</p> <p>As per the approved revised CPA-DD /B04/, “Device calibration is carried out periodically in accordance with manufacturer specifications where available. A calibration is to take place in case one of the meters is not functioning properly, which is deemed the case if there is more than a 1% difference in readings between the project meter and the utility meter. Calibration interval will not exceed 3 years, as per CDM standards.”</p> <p>It has been verified /16/ by the verification team that the average difference of the reading of both the meters (CPA03) for few months of the monitoring period was not within 1 % and thus the provision (which required meters to undergo to calibration immediately in case the difference of reading between two meters are more than 1 %) was not adhered by CPA implementers and in this context CL 01 has been raised and satisfactorily closed.</p> <p>The verification took cognizance of section 10.2.6 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>
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**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**

<b>Means of verification</b>	DR,I		
<b>Findings</b>	--		
<b>Conclusion</b>	<p>Baseline emissions at CPA level are calculated as Methodology AMS-I.D (version 17.0), which multiplies electrical energy baseline <math>EG_{BL,y}</math> (expressed in MWh of electricity produced by the CPA) by the grid emission factor.</p> <p><math>BE_y = EG_{BL,y} * EF_{CO2,grid,y}</math></p> <p>Where:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20%;"><math>BE_y</math></td> <td>Baseline Emission in year y (tCO<sub>2</sub>)</td> </tr> </table>	$BE_y$	Baseline Emission in year y (tCO <sub>2</sub> )
$BE_y$	Baseline Emission in year y (tCO <sub>2</sub> )		

	$EG_{BL,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the Project Activity(ies) under the CPA in year y (MWh)
	$EF_{CO_2,grid,y}$	CO <sub>2</sub> emission factor of the grid in year y (tCO <sub>2</sub> /MWh)
<p>The calculation of the grid emission factor is based on official data available at the time of the PoA Registration. The value of the grid emission factor is 0.6223 tCO<sub>2</sub>/MWh, which is fixed ex-ante for the entire crediting period of the CPAs. The detailed grid emission factor calculation based on data available prior to publication of the PoA DD, is provided in section E.6.1 of the PoA-DD /B04/. Hence, annual baseline emissions are calculated by multiplication of the annual quantity of net electricity supplied to the grid (as calculated above) with the grid emission factor.</p> <p><b>8950-P1-0002-CP1 (CPA 02):</b></p> $BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$ $= 35,171.03 \text{ MWh} * 0.6223 \text{ tCO}_2\text{e/MWh}$ $= 21,886 \text{ tCO}_2\text{e}$ <p><b>8950-P1-0003-CP1 (CPA 03):</b></p> $BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$ $= 74,841.13 \text{ MWh/y} * 0.6223 \text{ tCO}_2\text{e/MWh}$ $= 46,573 \text{ tCO}_2\text{e}$ <p>Verification team further confirms that no other emission source (which is not covered by the approved revised CPA-DDs /B04/ and the applied methodology /B02/) were found at both the CPA sites, as verified during the on-site inspection. Furthermore, the calculation of power density is not applicable for both the CPAs as it is run of river project and does not involve construction of any reservoir, the same was verified during the on-site inspection.</p> <p>In summary, the verification team confirms that all the ex-ante and ex-post parameters are monitored in accordance with the approved monitoring plan and applied methodology. The verification took cognizance of §358 of CDM VVS for PoAs (version 02.0) /B01-1/.</p>		

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

<b>Means of verification</b>	N/A
<b>Findings</b>	N/A
<b>Conclusion</b>	N/A

**E.3.6.3. Calculation of leakage GHG emissions**

<b>Means of verification</b>	N/A
<b>Findings</b>	N/A
<b>Conclusion</b>	N/A

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

<b>Means of verification</b>	DR,I
<b>Findings</b>	---
<b>Conclusion</b>	<p>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 the monitoring period is 68,459 tCO<sub>2</sub>e.</p> <p>In summary, verification team confirms that actual emission reduction is lower than the estimate of the approved revised CPA-DDs /B04/ for the current monitoring period.</p> <p>The verification took cognizance of §358 of CDM VVS PoAs (version 02.0) /B01-1/.</p>

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
8950-P1-0002-CP1: Zinguizapa Small – Scale Hydropower Project	21,886	0	0	0	21,886	21,886
8950-P1-0003-CP1: Puringla Sazagua Small Scale Hydropower Project	46,573	0	0	0	46,573	46,573
<b>Total</b>	68,459	0	0	0	68,459	68,459

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

<b>Means of verification</b>	DR
<b>Findings</b>	-
<b>Conclusion</b>	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 § 401 of VVS Version 02.0 /B01/.

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)
8950-P1-0002-CP1: Zinguizapa Small – Scale Hydropower Project	21,886	26,843
8950-P1-0003-CP1: Puringla Sazagua Small Scale Hydropower Project	46,573	68,124
<b>Total</b>	68,459	94,967

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

<b>Means of verification</b>	DR, I
<b>Findings</b>	--
<b>Conclusion</b>	Verification team confirms that actual emission reduction is lower than the estimate of the approved revised CPA-DDs /B04/ for the current monitoring period.

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

<b>Means of verification</b>	Not applicable
<b>Findings</b>	--
<b>Conclusion</b>	Not applicable

#### E.3.8. Global stakeholder consultation

<b>Means of verification</b>	Not applicable
<b>Findings</b>	--
<b>Conclusion</b>	Not applicable

## SECTION F. Internal quality control

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

## SECTION G. Verification opinion

>>

Carbon Check (India) Private Ltd. (CCIPL) has performed the second (2<sup>nd</sup>) periodic verification of the registered CDM Programme of Activities "PoA 8950:Guacamaya Small Scale Hydropower Programme of Activities" in Honduras, Nicaragua and Costa Rica (hereafter referred to as "Programme of Activities or PoA") for the CPAs titled "Zinguizapa Small – Scale Hydropower Project" (Reference number: 8950-P1-0002-CP1) and "Puringla Sazagua Small Scale Hydropower Project" (Reference number: 8950-P1-0003-CP1) . During the current monitoring period, the CPAs 8950-0002 and 8950-0003 were only implemented and the CPA 8950-P1-0001-CP1 was not implemented. CPA 8950-P1-0001-CP1 is not included in this monitoring report.

The verification team assigned by the DOE concludes that the PoA-DD (Version 7, date 04/12/2012) /B04/, CPAs 8950-P1-0002-CP1 and 8950-P1-0003-CP1 as described in the respective approved revised CPA-DDs /B04/ and the monitoring report /01-b/, 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 (Marrakesh Accords) 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 PoA (version 02.0) /B01-1/.

### Verification methodology and process

The Verification team confirms the contractual relationship signed on 19/06/2019 between the DOE, Carbon Check (India) Private Ltd. and the Project Participant, (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 PoA (version 02.0) and constitutes the review and completion of the following steps:

- Reviewing the registered PoA-DD (version 7, date 04/12/2012), the approved revised CPA DDs for 8950-P1-0002-CP1, 8950-P1-0003-CP1, including the monitoring plan and the corresponding validation report/s /B04/;
- Receipt of Monitoring report directly from the CME and Publication of the MR (version 1.2, 05/09/2019) /01/ on the UNFCCC website on 06/09/2019
- Desk review of the validation report, 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 17.0) /B02/;
- Review of any CMP and EB decisions, clarifications and guidance /B05/;
- On-site assessment (14/10/2019 – 16/10/2019)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the approved revised CPA DD/s. 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 68,459 tCO<sub>2</sub>e emission reductions during the third monitoring period.

Verified emission reductions for the PoA: 68,459 tCO<sub>2</sub>e.

The break-up of emission reduction up-to 31/12/2012 and 01/01/2013 onwards 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
<b>Emission reductions (t CO<sub>2</sub>e)</b>	0	68,459

Break up of emission reductions CPA wise:

8950-P1-0002-CP1: 21,886 tCO<sub>2</sub>e

8950-P1-0003-CP1: 46,573 tCO<sub>2</sub>e

CC IPL as a DOE is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

## **SECTION H. Certification statement**

>>

Carbon Check (India) Private Ltd., the DOE, has performed the verification of the registered Programme of Activities, "PoA 8950:Guacamaya Small Scale Hydropower Programme of Activities" in Honduras, Nicaragua and Costa Rica (hereafter referred to as "Programme of Activities or PoA") for the CPAs "Zinguizapa Small – Scale Hydropower Project" (Reference number: 8950-P1-0002-CP1) and "Puringla Sazagua Small Scale Hydropower Project" (Reference number: 8950-P1-0003-CP1) . The PoA supports the development of new small-scale hydropower projects in Honduras, Nicaragua and Costa Rica that supply electricity to the respective national grid. Each CPA under this PoA has a combined installed capacity of no more than 15 MW, the threshold for small-scale CDM projects.

The component project activities (8950-P1-0002-CP1 and 8950-P1-0003-CP1) of the Programme of Activities are designed to generate emission reductions by implementing new small-scale hydropower projects in Honduras that supply electricity to the respective national grid ENEE (Honduran National Electricity Company). 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-DDs /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 on-site 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:

- PoA-DD (version 7, date 04/12/2012);
- CPA-DD/s included in the registered PoA and its monitoring plan for the monitoring period 01/05/2017 – 31/08/2019.
- Approved monitoring methodology AMS-I.D. Grid connected renewable electricity generation (version 17.0);
- Validation report /B04/ for the PoA and the CPA/s;
- Monitoring reports (version 01, 02 and 03).

This statement covers verification period from 01/05/2017 – 31/08/2019.

The DOE had raised 01 clarification requests and 05 corrective action requests, all of which are satisfactorily closed.

**CDM-PoA-VCR-FORM**

The DOE considers 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 approved revised CPA-DDs are fairly stated.

The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 68,459 tCO<sub>2</sub> 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 up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

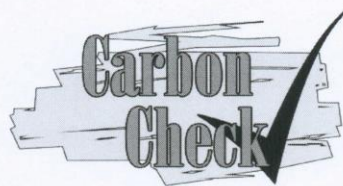
<b>Item</b>	<b>Emission reductions up to 31 December 2012</b>	<b>Emission reductions from 1 January 2013 onwards</b>
<b>Emission reductions (t CO<sub>2</sub>e)</b>	0	68,459

## Appendix 1. Abbreviations

Abbreviations	Full texts
BAU	Business As Usual
CA	Corrective Action / Clarification Action
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CER	Certified Emission Reduction
CL	Clarification Request
CME	Co-ordinating and Managing entity
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
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.**

**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  Team Leader  Technical reviewer   
 Verifier  Technical Expert  Local Expert<sup>1</sup>

In the following Technical Areas:

TA 1.1  TA 3.1  TA 5.2  TA 9.2  TA 13.2   
 TA 1.2  TA 4.1  TA 8.1  TA 10.1  TA 14.1   
 TA 2.1  TA 5.1  TA 9.1  TA 13.1

  
 Mr. Amit Anand  
 CEO

Date of Approval  
 24/12/2019

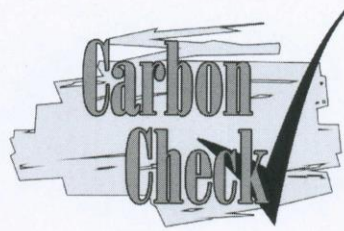
Valid Till  
 24/12/2020

**Revision History of the Document**

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

<sup>1</sup> India, South Africa

**CARBON CHECK (INDIA) PRIVATE LIMITED**  
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 Regd. Off: 2071/38, 2<sup>nd</sup> Floor, Naiwala, Karol Bagh, New Delhi - 110005  
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**Carbon Check (India) Private Ltd.**

**Amit Anand**

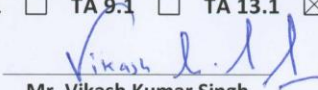
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

*For following functions:*

Validator  Team Leader  Technical reviewer   
 Verifier  Technical Expert  Local Expert<sup>1</sup>

*In the following Technical Areas:*

TA 1.1  TA 3.1  TA 5.2  TA 9.2  TA 13.2   
 TA 1.2  TA 4.1  TA 8.1  TA 10.1  TA 14.1   
 TA 2.1  TA 5.1  TA 9.1  TA 13.1

  
 Mr. Vikash Kumar Singh  
 Compliance Officer

**Date of Approval**  
 24/12/2019

**Valid Till**  
 23/12/2020

**Revision History of the Document**

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 e-mail: [info@carboncheck.co.in](mailto:info@carboncheck.co.in)

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	CME	a) Monitoring Report b) Final Monitoring report	a) Version 01.2, dated 05/09/2019 b) Version 03.0, dated 30/12/2019	CME
/02/	CME	a) Emission reduction calculation spread sheet corresponding to /1-a/ b) Emission reduction calculation spread sheet corresponding to /1-b/	--	CME
<b>Documents pertaining to CPA 8950-0002</b>				
/03/	ENEE	Evidence for the commissioning of the hydro project on 01 <sup>st</sup> April 2015	Cert. dated 13/12/2016	CME
/04/	G A Energy	1. FICHA TECNICA (data sheet)-evidence for the technical specifications of the project equipment 2. Evidence for the technical specifications of the project equipment - photograph of the project equipment	September 2014	CME
/05/	ENEE	Power Purchase Agreement Signed between ENEE & G A Energy	Contract Number:050-2010 dated 23/04/2010	CME
/06/	ENEE	Monthly report- "REGISTROS DE ENERGIA ELECTRICA Y POTENCIA DE LA PLANTA PROYECTO ZINGUIZAPA ETAPA I, G.A. ENERGY, S.A. DE.C.V.-CONTRACTO No. 050-2010" for each month of the monitoring period	different dates & reference number for each month	CME
/07/	G A Energy	Copies of invoices (FACTRUA DE SUMINSTRO DE DENERGIA) for cross check of the energy meter readings covering the monitoring period	Different dates & reference number for each month	CME
/08/	ENEE	Meter installation certificate of: <ul style="list-style-type: none"> <li>▪ Meter Serial Number MW-1406A496-01 (pre-calibrated on June 2014) and installed on 26/11/2014</li> <li>▪ Meter Serial Number MW-1409A770-01 (pre-calibrated on September 2014) and installed on 26/11/2014</li> </ul>	REF NO: UAC-211-05/15 dated 21/05/2015	CME
/09/	CME	a. Layout plan of electricity transmission line b. Diagram showing the electricity generation, transmission, evacuation and metering system. c. Snapshot of PLC depicting different component (operational parameters) of the project d. Photographs of meters	--	CME

/10/	Different entities	Statutory clearances: a. Contract for the use of national waters for the generation of electricity from the hydroelectric project b. Environmental License c. ICF PERMISSIONS d. Municipal Permits	--	CME
/11/	CME	Organogram of the CPA Implementer	--	CME
/12/	Energia Potencia y Desarrollos S.de. R.L.	Meter calibration certificate of: ▪ Meter Serial Number MW-1406A496-01 dated 11/10/2019 ▪ Meter Serial Number MW-1409A770-01 dated 11/10/2019	Dated 11/10/2019	CME
<b>Documents pertaining to CPA 8950-0003</b>				
/13/	ENEE	Evidence for the commissioning of the hydro project on 01 <sup>st</sup> April 2015	Cert. dated 03/06/2015	CME
/14/	OFICINA TÉCNICA DE ESTUDIOS Y CONTROL DE OBRAS, S.A.	1. Evidence for the technical specifications of the project equipment –photo-graph of the project equipment 2. STUDY OF FEASIBILITY AND FINAL DESIGN FOR THE DEVELOPMENT OF THE PURINGLA AND SAZAGUA HYDROELECTRIC POWER PLANT OF THE REPUBLIC OF HONDURAS	November 2010	CME
/15/	ENEE& CECA	Power Purchase Agreement Signed between ENEE & CECA	--	CME
/16/	ENEE	Monthly report- “REGISTROS DE ENERGIA ELECTRICA EN LA CENTRAL HIDROELECTRICA PURINGLA-SAZAGAU” for each month of the monitoring period	--	CME
/17/	CECA	Copies of invoices (FACTRUA) for cross check of the energy meter readings covering the monitoring period	--	CME
/18/	ENEE	Meter installation certificate of ▪ Meter Serial Number MW-1409A771-01 (pre-calibrated on September 2014) and installed on:12/11/2014 ▪ Meter Serial Number MW-1206A274-01 (pre-calibrated on June 2012) and installed on:15/11/2014	Reference number: UAC-013-01/15 dated 08/01/2015	CME
/19/	CECA	a. Diagram indicating location of power plant and its components. b. Line diagram showing the electricity generation, transmission, evacuation and metering system. c. Photographs of meters	--	CME
/20/	Different entities	Statutory clearances: a. Water contract b. Operation Contract c. Environmental Licence	--	CME
/21/	EQUIPOS INDUSTRIALES SA	Record of purchase of meter installed at the project site	Dated 12/11/2014 and 15/11/2014	CME

/22/	Energia Potencia y Desarrollos S.de. R.L.	Meter calibration certificate of <ul style="list-style-type: none"> <li>▪ Meter Serial Number MW-1409A771-dated</li> <li>▪ Meter Serial Number MW-1206A274-01 dated</li> </ul>	Dated 20/11/2019	CME
/23/	ENEE	Certificate from the Utility regarding the issue on the timing and how it was resolved.	15/07/2019	CME
<b>Common for CPA 002 and 003</b>				
/24/	Schneider Electric	Electrical Network management page 128 of 262 provides technical specification of ION 8650 series. This specifies accuracy class as 0.2 and accuracy for current, power + voltage, power factor and for energy as 0.1%.	--	<a href="http://www.schneider-electric.com">www.schneider-electric.com</a>
/25/	CME	Interim version of monitoring reports <ol style="list-style-type: none"> <li>1. Monitoring Report</li> <li>2. Monitoring report</li> </ol>	a) Version 2, dated 09/12/2019 b) Version 3, dated 23/12/2019	CME
/B01/	UNFCCC	<ol style="list-style-type: none"> <li>1. Validation and Verification Standard Version 02.0</li> <li>2. Project Standard Version 02.0</li> <li>3. Project Cycle Procedure Version 02.0</li> </ol>	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
/B02/	UNFCCC	Applied baseline and monitoring methodology, AMS-I.D, Version 17	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
/B03/	UNFCCC	Instructions for filling out the monitoring report form for CDM programme of activities Version 03.0	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
/B04/	UNFCCC	Registered PoA-DD (Version 7, date 04/12/2012), the approved revised CPA DDs for 8950-0002, 8950-0003 (Version 4 date 22/12/2017, Version 4 date 22/12/2017 respectively. respectively) and corresponding validation reports.	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others
/B05/	Web sites	Websites: <a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a> <a href="http://www.ipcc-nggip.iges.or.jp/">http://www.ipcc-nggip.iges.or.jp/</a>	--	Others
/B06/	UNFCCC	SSC_530 Clarification on the maximum output capacity for a project activity applying AMS-I.D	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Others

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

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

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

Table 2. CLs from this verification

### 8950-P1-0003-CP1 (CPA 03):

<b>CL ID</b>	01	<b>Section no.</b>	E.3.5	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				
<p>The calibration of the meters were due on 11/11/2017. During the on-site inspection, it has been clarified by the CME that the calibration of meters has not been performed and shall be conducted shortly. In the regard, the date of calibration mentioned in the MR is misleading and incorrect.</p> <p>Furthermore, verification team also noted as per the approved revised CPA DD, "Device calibration is carried out periodically in accordance with manufacturer specifications where available. A calibration is to take place in case one of the meters is not functioning properly, which is deemed the case if there is more than a 1% difference in readings between the project meter and the utility meter. Calibration interval will not exceed 3 years, as per CDM standards."</p> <p>During the review of monthly meter reading report ie. "REGISTROS DE ENERGIA ELECTRICA EN LA CENTRAL HIDROELECTRICA PURINGLA-SAZAGAU" /16/, for few months (for e.g. May 2018) the difference between the meters are more than 1%. CME is requested to clarify.</p>				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<p><i>Main and Backup meters for both CPAs have been calibrated. Calibration certificates and results have been handed to the DOE.</i></p> <p><i>The monitoring report has also been updated to reflect these meter calibrations.</i></p>				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>• Calibration certificates</li> <li>• Calibration results</li> <li>• Modified Monitoring Report</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2019
<p>CME has revised the date of calibration in the revised Monitoring period and also provided the calibration certificate to the DOE for review. The CL is still open due to following reasons:</p> <ol style="list-style-type: none"> <li>The second part of CL as reiterated below is unanswered. <ul style="list-style-type: none"> <li>"Furthermore, verification team also noted as per the approved revised CPA DD, "Device calibration is carried out periodically in accordance with manufacturer specifications where available. A calibration is to take place in case one of the meters is not functioning properly, which is deemed the case if there is more than a 1% difference in readings between the project meter and the utility meter. Calibration interval will not exceed 3 years, as per CDM standards."</li> <li>During the review of monthly meter reading report i.e. "REGISTROS DE ENERGIA ELECTRICA EN LA CENTRAL HIDROELECTRICA PURINGLA-SAZAGAU" /16/, for few months (for e.g. May 2018) the difference between the meters are more than 1%."</li> </ul> </li> <li>The results of calibration (i.e. error %) and information (such as period of delay and basis of adjustment</li> </ol>				

based on calibration results and accuracy class of the meters) on adjustment in electricity generation during the delayed calibration period are missing in the revised Monitoring report.	
<b>CME response</b>	<b>Date:</b> DD/MM/YYYY
<ol style="list-style-type: none"> <li><i>The Puringla Sazagua HPP had readings that were indeed over the 1% difference threshold which were noted during the monitoring period by the project owner and the utility. These discrepancies were studied and found to be caused by a mismatch in the timing of the readings that took place with the main and the backup meter, where one of the meters would have a start/stop period of time that was not synchronized properly with the other.</i></li> <li><i>The MR has been modified to include the results of the calibration.</i></li> </ol>	
<b>Documentation provided by the CME</b>	
<ul style="list-style-type: none"> <li><i>Certificate from the Utility regarding the issue on the timing and how it was resolved.</i></li> <li><i>Revised MR</i></li> </ul>	
<b>DOE assessment</b>	<b>Date:</b> 03/01/2020
<ol style="list-style-type: none"> <li>Verification team based accept the justification above by the CME based on following:                     <ul style="list-style-type: none"> <li><i>review of certificate from the Utility /23/ regarding the issue on the timing and its resolution,</i></li> <li><i>and the fact that the period from when such difference arise has already been discounted by maximum error (as revealed during the latest calibration i.e. 6.408 %) and thus this difference does not have any material impact on the project emission reduction quantification and hence acceptable.</i></li> </ul> </li> <li>The results of delayed calibration has been provided in the revised MR and thus acceptable.</li> </ol> <p>Verification team has reviewed the calibration certificate of CPA 3 and found that the maximum error for meter (MW-1409A771-01) is 0.077% where as the maximum error for meter MW-1206A274-01 was 6.408 % . It can be thus concluded that the meter MW-1409A771-01 was deemed appropriate for use and the meter 1409A771-01 was malfunctioned. The accuracy class of the meter as per MR is 0.1 and thus based on the fact that 6.408 % (maximum error out of the two meters) has been used for adjustment of electricity export and import and hence the revision can be acceptable, however CME needs to clarify the following:</p> <ol style="list-style-type: none"> <li>The reason of difference of accuracy class as cited in the response and in the Monitoring report.</li> <li>The fate of malfunctioned meter after calibration needs to be indicated in the MR.</li> </ol> <p>CAR is open.</p>	
<b>CME response</b>	<b>Date:</b> DD/MM/YYYY
<ol style="list-style-type: none"> <li><i>The MR has been modified to show that the "Class" of the meter is 0.2. However, it should be noted as per manufacturer specification, the accuracy for current, power + voltage, power factor and for energy is of 0.1%. The MR has been modified to reflect the class of the meters as 0.2</i></li> <li><i>The relevant table in the MR has been modified to mention that the malfunctioning meter has been replaced by one of the same make and model.</i></li> </ol>	
<b>Documentation provided by the CME</b>	
<i>Modified MR</i>	
<b>DOE assessment</b>	<b>Date:</b> 08/01/2020
<p>The fate of the malfunctioned meter has been provided in the revised MR. Verification team has further reviewed the technical specification /24/ of meter and found that <i>the correct class of the meter is 0.2 (the class of the meter was inadvertently mentioned/verified as 0.1 during the previous verification).</i></p> <p><i>Furthermore, as per the approved revised CPA DD, it is stated that "A high level of accuracy of the measurements will be achieved due to the use of high-precision equipment of at least 0.15 (extended range) for P (electric power) and Q (reactive power) and in compliance with the ANSI requirements.". Verification team based on review of technical specification /24/ of meter noted that the accuracy of meter for current, power + voltage, power factor and for energy is of 0.1% in compliance with the ANSI requirements and thus confirms to the requirement of CPA DD for the use of high-precision equipment of at least 0.15 (extended range) for P (electric power) and Q (reactive power).</i></p> <p>The required revision has been done in the revised Monitoring report. CL is closed.</p>	

Table 3. CARs from this verification

Common for both 8950-P1-0002-CP1 (CPA02) and 8950-P1-0003-CP1 (CPA03):

<b>CAR ID</b>	01	<b>Section no.</b>	E.1.1	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				



The following information as required by MR filling guidelines is missing in section B.1 and section C of the MR:	
<ol style="list-style-type: none"> <li>Section B.1: Indicate whether a sampling approach was applied for monitoring of a group of CPAs or each CPA covered in this monitoring report, and elaborate details in section E.3 below. Provide the description of installed technologies, technical processes and equipment for the included CPAs, and the information on the implementation and actual operation of the included CPAs in section C.1 below.</li> <li>Section C: Include line diagrams showing all relevant monitoring points.</li> </ol>	
Furthermore, CME is requested to correct estimated emission reduction from the PoA for the reported monitoring period.	
<b>CME response</b>	<b>Date:</b> DD/MM/YYYY
<ol style="list-style-type: none"> <li>The Monitoring Report has been modified accordingly.</li> <li>The Monitoring Report has been modified accordingly.</li> </ol>	
<b>Documentation provided by the CME</b>	
<ul style="list-style-type: none"> <li>Modified MR</li> </ul>	
<b>DOE assessment</b>	<b>Date:</b> 19/12/2019
CME has submitted the revised Monitoring report after addressing bullet 1 and 2 of the findings. The same was found acceptable. However, the last paragraph of the finding has been un-answered/addressed in the revised MR. CAR is open.	
<b>CME response</b>	<b>Date:</b> DD/MM/YYYY
<i>Estimated reduction for the monitoring period has been corrected to reflect expected ERs from each CPA during that time (852 days)</i>	
<b>Documentation provided by the CME</b>	
<i>Revised MR</i>	
<b>DOE assessment</b>	<b>Date:</b> 03/01/2020
CME has corrected the estimated ER in the revised Monitoring Report; checked and confirmed by the verification team. CAR is closed.	

**8950-P1-0002-CP1 (CPA02):**

<b>CAR ID</b>	02	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				
<p>During the on-site inspection review of monthly meter reading reports ie. "REGISTROS DE ENERGIA ELECTRICA Y POTENCIA DE LA PLANTA PROYECTO ZINGUIZAPA ETAPA I, G.A.ENERGY, S.A. DE.C.V.-CONTRACTO No. 050-2010" /06/ and Invoices "FACTURA DE SUMINSTRO DE DENERGIA" /07/, verification team noted that the electricity generation figure for the month of July 2018, January 2019, February 2019 are incorrect.</p> <p>Furthermore, in the Emission reduction spread sheet /02/, the generation figure for the month of August 2019 is empty. It is also noted that in the work sheet "ER Calculation" the CPA 2 generation figure has been mentioned as CPA 3.</p>				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<i>MR and ER sheet has been modified accordingly</i>				
<i>Copies of all reports of electricity sales with generation info from main and backup meters have been handed in to DOE.</i>				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>Electricity sales reports</li> <li>Calibration Certificates and results</li> <li>Modified ER sheet</li> <li>Modified MR</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2019
<p>Verification team is in receipt of revised ER sheet. Based on review of revised ER sheet, verification team confirms that following corrections has been done by the CME.</p> <ol style="list-style-type: none"> <li>electricity generation figure for the month of July 2018, January 2019, February 2019 has been corrected.</li> <li>generation figure for the month of August 2019 has been provided</li> <li>Work sheet ER Calculation has been revised to correct the misleading information i.e. the CPA 2 generation figure has been mentioned as CPA 3.</li> </ol> <p>CAR is closed.</p>				



<b>CAR ID</b>	03	<b>Section no.</b>	E.3.5	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				
The calibration of the electricity meters was due on 25/11/2017, however the same were performed on 11/10/2019 as verified by reviewing the calibration certificate /22/ during the on-site inspection. CME is requested to do the needful adjustments in monitored electricity as per the provision of Project Standard, version 02.0 for the delayed period. Furthermore, the date of calibration in section D.7.1 of the Monitoring report is incorrect.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<i>MR and ER sheet has been modified accordingly</i>				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>• Calibration Certificates and results</li> <li>• Modified ER sheet</li> <li>• Modified MR</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2019
CME has revised the date of calibration in the revised Monitoring period and also provided the calibration certificate to the DOE for review. The CAR is still open due to following reasons:				
<ol style="list-style-type: none"> <li>1. The error % applied for the adjustment appears to be incorrect in the revised ER spread sheet. Also, the color code provided in the ER sheet for the adjustment is misleading.</li> <li>2. The results of calibration (i.e. error %) and information (such as period of delay and basis of adjustment based on calibration results and accuracy class of the meters) on adjustment in electricity generation during the delayed calibration period is missing in the revised Monitoring report.</li> </ol>				
CAR is open.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<ol style="list-style-type: none"> <li>1. <i>The error % applied has been modified to reflect the exact error result in the calibration tests. For CPA 003 the highest error % from all the tests has been applied in order to be conservative (6.408%), which was found to be on the backup meter. For CPA 002 an adjustment of 0.2% has been applied which is based on the accuracy class of this model of meter. It should be noted that the actual errors found in the calibration were below this threshold.</i></li> <li>2. <i>MR has been modified to include information regarding the results of the calibrations.</i></li> </ol>				
<b>Documentation provided by the CME</b>				
<i>Revised MR.</i>				
<b>DOE assessment</b>				<b>Date:</b> 03/01/2020
Verification team has reviewed the calibration certificate of CPA 2 and found that the maximum error found is 0.091% (maximum out of both the meters). Thus both the meters were found acceptable. The accuracy class of the meter as per MR is 0.1 and thus based on the fact that 0.2 has been proposed to use for adjustment of electricity export and import, the response and the proposed revision can be acceptable, however CME needs to clarify/correct the following:				
<ol style="list-style-type: none"> <li>1. The reason of difference of accuracy class as cited in the response above and in the Monitoring report.</li> <li>2. Adjustment factor applied for export and import seems to be incorrect, please check and correct.</li> </ol>				
CAR is open.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<ol style="list-style-type: none"> <li>1. <i>The MR has been modified to show that the "Class" of the meter is 0.2. However, it should be noted as per manufacturer specification, the accuracy for current, power + voltage, power factor and for energy is of 0.1%. The MR has been modified to reflect the class of the meters as 0.2</i></li> <li>2. <i>The adjustment factor for energy import and export has been modified in the ER sheet for CPA002. The values in the ER sheet are now reflected in the MR.</i></li> </ol>				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>• Modified MR</li> <li>• Modified ER Sheet</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> 08/01/2020

The adjustment factor for energy import and export has been applied in the revised ER sheet for CPA002, the same has been checked and found correct and thus acceptable to the verification team. Verification team has further reviewed the technical specification /24/ of meter and found that the correct class of the meter is 0.2 (the class of the meter was inadvertently mentioned/verified as 0.1 during the previous verification).

Furthermore, as per the approved revised CPA DD, it is stated that “A high level of accuracy of the measurements will be achieved due to the use of high-precision equipment of at least 0.15 (extended range) for P (electric power) and Q (reactive power) and in compliance with the ANSI requirements.”. Verification team based on review of technical specification /24/ of meter noted that the accuracy of meter for current, power + voltage, power factor and for energy is of 0.1% in compliance with the ANSI requirements and thus confirms to the requirement of CPA DD for the use of high-precision equipment of at least 0.15 (extended range) for P (electric power) and Q (reactive power).

The required revision has been done in the revised Monitoring report. CAR is closed.

**8950-P1-0003-CP1 (CPA03):**

<b>CAR ID</b>	04	<b>Section no.</b>	E.3.1	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				
The total installed capacity of the CPA based on capacity and number of generators needs to be provided in section C.1 of the monitoring report as per the approved revised CPA DD.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<i>Monitoring report has been modified to include total installed capacity of three generators.</i>				
<b>Documentation provided by the CME</b>				
<i>Modified MR</i>				
<b>DOE assessment</b>				<b>Date:</b> 19/12/2019
The information as required by the CAR has been provided in the revised Monitoring report; checked and confirmed by the verification team. CAR is closed.				

<b>CAR ID</b>	05	<b>Section no.</b>	E.3.4.2	<b>Date:</b> 16/10/2019
<b>Description of CAR</b>				
During the on-site inspection review of monthly meter reading reports ie. “REGISTROS DE ENERGIA ELECTRICA EN LA CENTRAL HIDROELECTRICA PURINGLA-SAZAGAU” /16/ and Invoices “FACTURA” /17/, verification team noted that the electricity generation figure for the of November 2018, February 2019, July 2019 and August 2019 are incorrect. It is also noted that in the work sheet “ER Calculation”, the CPA 3 generation figure has been mentioned as CPA 2.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<i>MR and ER sheet has been modified accordingly</i>				
<i>Copies of all reports of electricity sales with generation info from main and backup meters have been handed in to DOE.</i>				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>• Electricity sales reports</li> <li>• Calibration Certificates and results</li> <li>• Modified ER sheet</li> <li>• Modified MR</li> </ul>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
Verification team is in receipt of revised ER sheet. Based on review of revised ER sheet, verification team confirms that following corrections has been done by the CME.				
<ol style="list-style-type: none"> <li>1. Electricity generation figure for the month of November 2018, February 2019, July 2019 and August 2019 has been corrected.</li> <li>2. Work sheet ER Calculation has been revised to correct the misleading information i.e. the CPA 2 generation figure has been mentioned as CPA 3.</li> </ol>				
CAR is closed.				

**Table 4. FARs from this verification**

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY

<b>Documentation provided by the CME</b>	
<b>DOE assessment</b>	<b>Date: DD/MM/YYYY</b>

**Document information**

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<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);</li><li>• Make structural and editorial improvements.</li></ul>
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.

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Decision Class: Regulatory  
Document Type: Form  
Business Function: Issuance  
Keywords: programme of activities, verifying and certifying

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