




**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

Title and UNFCCC reference number of the programme of activities (PoA)	Household energy appliance programme UNFCCC reference number: 10030	
Version number(s) of the PoA-DD(s) to which this report applies	Version 21	
Version number of the verification and certification report	043.0	
Completion date of the verification and certification report	3108/076/2020	
Monitoring period number and duration of this monitoring period	First Monitoring period 10/03/2016 to 29/02/2020 ¹ (inclusive of both days)	
Number and version number of the monitoring report to which this report applies	Monitoring report number 01, version 03.0	
Coordinating/managing entity (CME)	Differ Cookstoves AS	
Host Parties	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)
	Myanmar	No
	Democratic Republic of Timor-Leste	No
	Lao PDR	Yes
	Cambodia	Yes
	Kenya	No
	Uganda	No
Applied methodologies and standardized baselines	AMS-I.A Electricity generation by the user, Version 16 AMS-II.G Energy efficiency measures in thermal applications of non-renewable biomass, Version 6	
Mandatory sectoral scopes	Sectoral Scopes: 01, 03	
Conditional sectoral scopes, if applicable	Not applicable	
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	10030-P1-0003-CP1—720 t CO ₂ e 10030-P1-0004-CP1-- 266 t CO ₂ e Total—986 t CO ₂ e	
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs	10030-P1-0003-CP1—419 t CO ₂ e 10030-P1-0004-CP1-- 104 t CO ₂ e	

¹ CERs are being claimed only for the period between 08/01/2020 – 29/02/2020 (both days included)

covered in this report	Total— 523 t CO ₂ e
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. E-0052
Name, position and signature of the approver of the verification and certification report	Amit Anand, CEO 

SECTION A. Executive summary

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Introduction:

The Co-ordinating Managing Entity/Project Participant has commissioned the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent verification of the CDM Programme of Activities “Household energy appliance programme” in Myanmar, Timor-Leste, Lao PDR, Cambodia, Kenya and Uganda (hereafter referred to as “Programme of Activities or PoA”) for the CPAs titled “Household appliance distribution in Lao PDR - CPA003” (10030-P1-0003-CP1 and “Household appliance distribution in Cambodia – CPA004” (10030-P1-0004-CP1).

The PoA aims to distribute solar lighting systems (lanterns, home systems) and improved cook stoves to households. The Efficient cook stoves distributed under CPAs of the PoA are more efficient as compared to the stoves typically used in baseline. By replacing inefficient stoves, the CPA will save on consumption of woody biomass.

The CPAs are designed to generate emission reductions by distribution of the fuel-efficient wood stoves. The fuel-efficient cook stoves are replacing the less efficient baseline stoves in common use (baseline scenario). 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 activities. Ecoeye Co., Ltd. (Ecoeye) and Korea Zinc Co. Ltd. (Korea Zinc) have fully financed all improved cooking stoves distributed to the households, and the total project cost per stove is USD 29.50 /20/.

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 CPAs 10030-P1-0003-CP1 and 10030-P1-0004-CP1 in Lao PDR and Cambodia respectively for the period 10/03/2016 to 29/02/2020 (CERs are being claimed for the period 08/01/2020 – 29/02/2020).

The purpose of verification is to review the monitoring results and verify that the monitoring was implemented according to the monitoring methodology and the monitoring plan in the approved revised PoA-DD /revised CPA-DDs /B04/ and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CC IPL’s objective is to perform a thorough, independent assessment of the implementation of the programme of activities / CPA-DDs /B04/.

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 revised CPA-DDs and the approved monitoring methodology.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the revised CPA-DDs
- To verify the implemented monitoring plan with the revised CPA-DDs 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 10/03/2016 to 29/02/2020 based on the revised CPA-DDs including the monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participant.

Remote stakeholder's interviews are also performed as part of the verification process.

The verification team assigned by the DOE concludes that the PoA-DD (Version 21, dated 24/02/2020) /B04/, CPAs, 10030-P1-0003-CP1 and 10030-P1-0004-CP1 as described in the revised CPA-DDs /B04/ and the Monitoring report, Version 03.0, dated 05/06/2020 /02/, 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 CDM VVS for PoAs requirements Version 02.0 /B01-1/.

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the 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 remote interviews verification team confirms that the PoA has resulted in the 523 tCO₂e emission reductions during the first 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
2.	Local Expert (Lao PDR)	EI	Kaneko	Akkhamoun	CC IPL	X		X	X
3.	Local Expert (Cambodia)	EI	Socheat	Sorin	CC IPL	X		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	Agarwalla	Sanjay Kumar	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 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.	Medium	<i>All the input data in the ER spreadsheet including sales database, determination of parameter for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the PoA-DD/CPA-DDs /B04/.</i>	<i>The risk was mitigated by the training of the personnel involved in the data capture, calculation and by following the monitoring responsibilities. The training records /10-4/ were reviewed which was also confirmed during the remote interviews. Verification team, based on the above, confirms that the risk is appropriately mitigated.</i>
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	<i>The data is recorded in electronic database along with the name of recipient, contact details, location of household (village, district and/or GPS coordinates and date of installation. The access to the spreadsheets for calculation of ERs, monitoring and sales database and Stove efficiency testing records.</i>	<i>The identified risk was mitigated by managing access to the records /05/, /10/, 12/, /13/, /14/. It was confirmed through interviews that the raw data is collected by the field personnel and then transmitted and stored electronically to the CME's office. The data quality control is maintained by the CME.</i>

3.	<i>Accuracy of the measuring equipment</i>	<i>Low</i>	<i>Check the calibration records for the measurement equipment used for efficiency test.</i>	<i>The risk due to accuracy of the measuring equipment /10-6/ was ensured by checking calibration certificates of the measuring equipment used for stove efficiency (water boiling tests).</i>
4.	Competence of personnel involved in conducting standardized tests viz., WBT	<i>Medium</i>	<i>Interview of the personnel involved and check the training records / accreditation certificates (applicable in case of institutions) involved in conducting such tests.</i>	<i>The risk has been mitigated by reviewing the training records /10-4/ of the personnel involved in conducting such tests and by following the monitoring responsibilities. The training records /10-4/ and competency certificates /10-4/ were reviewed which was also confirmed during the remote interviews.</i>
5.	Sample	<i>Medium</i>	<i>Sample size is not adequate; or the surveyed households at the CPA level are not random.</i>	<i>Crosscheck the procedure to identify the sample size against the methodology/ sampling guideline / sampling standard and confirm the sample size is calculated correctly.</i>

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 § 308 of CDM VVS for PoAs, 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 523 tCO₂e which is equal to 26 tCO₂e.

In planning the verification, verification team took cognizance of para 11 and 12 of the “Guideline: Application of materiality in verifications” Version 02.0 /B08/. A materiality threshold of 26 tCO₂e is determined in line with para 308 (b) of CDM VVS for PoAs, version 02.0.

Based on the above, activities in which risks were assessed were:

1. Monitoring system including the data input procedure (including relevant personnel and applicable template forms used)
2. Copy of the agreement between household and Project Participant (s) (origin of data)
3. Stove unique ID system
4. ER sheet (application of data)
5. Data flow
6. Data control procedures
7. Stove efficiency test (WBT) records
8. Monitoring survey records

In conducting the verification, DOE took cognizance of para 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 sampling of records during desk review. Data flow was checked through comparison of data source provided 05/, /10/, 12/,/13/,/14/ and ER sheet /04/. The competence of the personnel involved in conducting the stove efficiency testing, recording of data and calculation of the emission reductions data has been checked by the verification team by means of remote interviews.

The risks identified can be mitigated through cross check with all sets of documents. The verification team performed the following checks in order to mitigate the effects of the above-identified sources of error:

Mitigation of Human error risks: The verification team mitigated the risk by checking the training records of the personnel and during the remote interviews. Further, data was crosschecked with the ER calculation spreadsheet /04/ and the raw data.

Mitigation due to error in Information system: Verification team by conducting interviews with the personnel responsible for such activities mitigated the risk due to error in information system. It was confirmed through interviews that an electronic database for the project activity has been maintained by the CME, which is accessible to the CME, CPA implementing body and to the verification DOE if required for check. Enumerators, coordinated by the CME, were trained on the basic concept of the programme and were introduced to the questionnaire before sending to the field. They were also made to fill sample questionnaires during the training process and problems faced during the test filling were shared and discussed to avoid similar problems in the actual survey.

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing calibration certificates of all the project equipment.

As no material errors, omissions or misstatements could be found, a reasonable level of assurance is achieved.

SECTION D. Means of verification

D.1. Desk/document review

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The verification was performed primarily based on the review of the Monitoring report /01/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology /B02/. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

D.2. On-site inspection

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Carbon Check has not conducted an on-site inspection, which is in conformity with CDM Executive Board's recommendation to avoid site visit due to COVID-19 outbreak (https://cdm.unfccc.int/newsroom/latestnews/releases/2020/01041_index.html).

The on-site inspection can-not be postponed due to time-line agreed between the Project Participant and the CER buyer as per the ERPA. The evidence for such CER delivery commitment /17/ has been provided to the DOE.

The alternative means used for the purpose of verification are demonstrated as follows:

The verification team has carried out remote interviews in order to assess the information included in the monitoring report and monitoring measurement procedures adopted during the monitoring period. During the desk review, the relevant monitoring records were checked.

Through the review of validation reports, comparing the relevant evidence and remote interviews with the CME's representatives, remote interviews with the households sampled by the DOE from the CME's samples, CCIPL has confirmed that the project is implemented in line with the revised and approved PoA-DD/revised CPA-DDs during the monitoring period. There is no change of the project design, operation and monitoring plan.

Remote interviews were performed by verification team in order to assess the following:

Remote on-site inspection and interviews: 21/05/2020 and 23/05/2020				
No.	Activities performed remotely	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 interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	Remote interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
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 interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
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 interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
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 interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	Remote interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun
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 interviews	21/05/2020 and 23/05/2020	Vikash Kumar Singh, Socheat Sorin, Kaneko Akkhamoun

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Steele	Jason	Program Manager, Differ Cookstoves AS (CME)	21/05/2020	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Vikash Kumar Singh
2	Gosawmi	Tidip	CQC	21/05/2020 to 23/05/2020	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Vikash Kumar Singh
3	Verma	Pooja	CQC	23/05/2020	Monitoring records, MR and ER calculation	Vikash Kumar Singh
4.	Long	Reaksmey	CQC-Cambodia	21/05/2020	Project implementation and operation, Sales/Distribution records	Vikash Kumar Singh, Socheat Sorin
5.	Sourn	Thou	CQC-Cambodia	21/05/2020	Project implementation and operation, Sales/Distribution records	Vikash Kumar Singh, Socheat Sorin
6.	Smith	Russell Morris	CQC-Cambodia	23/05/2020	Project implementation and operation, Sales/Distribution records	Vikash Kumar Singh
7.	Vilaythong	CHANTHA LINH (BIE)	CQC-Laos	22/05/2020	Project implementation and operation, Sales/Distribution records	Vikash Kumar Singh, Kaneko Akkhamoun
8.	TOEY THI	Stove ID: CQCKHSS M000046	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
9.	MONY DONG	Stove ID: CQCKHSS M000066	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
10.	TOES TONG	Stove ID: CQCKHSS M000053	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
11.	SRI NITA	Stove ID: CQCKHSS M000102	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
12.	PHAYAY CHORNH	Stove ID: CQCKHSS M000117	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat

						Sorin
13.	NHEUROV DOEURNH	Stove ID: CQCKHSS M000140	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
14.	PHALLY NHORCH	Stove ID: CQCKHSS M000145	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
15.	KES BOCHEA	Stove ID: CQCKHSS M000200	Local people	21/05/2020	Remote interviews	Vikash Kumar Singh, Socheat Sorin
16.	YOM	Stove ID: CQCLASS M000047	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
17.	MRKHAM KENSOUV ONG	Stove ID: CQCLASS M000286	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
18.	MS.MAI	Stove ID: CQCLASS M000322	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
19.	SOMPHO NG	Stove ID: CQCLASS M000567	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
20.	MRKHUNT EY	Stove ID: CQCLASS M000589	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
21	SAIYKHA M	Stove ID: CQCLASS M000670	Local people	22/05/2020	Remote interviews	Vikash Kumar Singh, Kaneke Akkhamoun
22	DOK	Stove ID: CQCLASS M000700	Local people	22/05/2020	Remote interviews.	Vikash Kumar Singh, Kaneke Akkhamoun
23	FONG	Stove ID: CQCLASS M000778	Local people	22/05/2020	Remote interviews.	Vikash Kumar Singh, Kaneke Akkhamoun

D.4. Sampling approach

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As assessed in above sections, emission reductions for the two CPAs, 10030-P1-0003-CP1 and 10030-P1-0004-CP1, are being claimed for this monitoring period and the total population of the stoves under these two CPAs are as below:

SI No.	CPA Reference No.	Number of ICS Distributed
1	10030-P1-0003-CP1	851
2	10030-P1-0004-CP1	195
Total		1,046

The monitoring parameters required to be monitored through the sampling plan are:

Parameter	Description of Parameter	Parameter of Interest
$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation ($a=1$) and Thermal efficiency of the device of type i being deployed as part of the project activity with age ' a '	Mean
$B_{y=1,new,i,survey}$	Annual quantity of woody biomass used during the project activity in tonnes per device of type i	Mean
$N_{y,i,a}$	<i>Number of project devices of type i and age a that are operating in year y.</i>	Proportion
$\mu_{y,i}$	Number of days of utilization of the cook stove device of type i during the year y	Proportion

Simple random sampling was applied by the CME for selection of the monitoring samples with 95/10 confidence/precision for each for all the parameters which is deemed acceptable as per Sampling Standard, version 08 /B07/.

As per paragraph 25 of the Sampling Standard, version 08 /B07/, the verification team has to verify whether the project participants or the coordinating/managing entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- (a) Whether the required confidence/precision has been met;
- (b) Whether the selected sample was representative of the population.

In line with paragraph 26 of the Sampling Standard, the verification team has applied a sampling approach for the remote interviews as part of verification. Now as the CME had applied sampling approach, the verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B07/.

DOE used sampling during verification for checking the CME's samples. In accordance with paragraph 29 (a) of the Sampling Standard /B07/, the verification team took random samples from the CME's samples. Considering that the annual emission reductions for the PoA in the monitoring period is less than 100,000 tCO₂e, applying paragraph 39 (a) of the sampling standard, version 08 /B07/, a sample size of 8 (with no discrepant records) was chosen. A sample size of 8 was required for each CPA, based on an AQL of 1.0% and UQL of 20%, producer risk 10% and consumer risk 20%. Acceptance number (c) thus determined for the sample is 0. DOE has interviewed 8 samples from each CPA. It was confirmed by all the 8 samples from each CPA, that stoves were found to be operational in all households and the survey including the measurement of firewood consumption were conducted by the CME. Furthermore, using the following table questions were asked to the households on the different aspects of PP's survey which includes the measurement of the firewood /12/,/13/,/14/,/16/. No discrepant records were observed and thus $c=0$. Thus, CME's set of records has been accepted in line with § 33 of the sampling standard, version 08 /B07/. Verification team has cross verified these sample documents during the remote interviews and document reviews. Verification team has also checked evidences pertaining to the conduction of WBT /10/ and based on review of these documents /10/ and remote interviews it can be confirmed that the WBTs were conducted in 7 household of each CPA.

The following table illustrates the agenda covered during the acceptance sampling by the verification team which is as per Table 1, paragraph 37 of "Standard: Sampling and surveys for CDM project activities and programmes of activities (version 08.0);

Parameter	How the CME conducted sampling surveys (to obtain the project participants' or the coordinating/managing entities' records)	How the DOE could obtain records for verification	Criteria for deciding what ultimately constitutes a discrepancy
% of improved cook stoves (ICS) in operation	Sampling based survey (questionnaire survey/interviews)	<p>Cross-check of a sample of project participants' samples (questionnaire operation surveys/interviews) including but not limited to following:</p> <ul style="list-style-type: none"> • Consistency between the information as contained in Survey sheet and revealed from the remote interviews • Baseline scenario of the household • Enquire/observe the pre-project/baseline stove/s and its operation during the project scenario. • Enquire/observe parallel use of any other stove and their fuel • Enquire/observe source /storage of fuelwood/charcoal or any other fuel • Enquire number of meals cooked (along with family size of household) on project cook stove or any other baseline and/or stoves utilizing other fuel/s. 	DOE results, accounting for duly justified differences.
Efficiency of improved cook stoves (ICS)	Water Boiling Test as the procedure allowed for efficient test prescribed by applied CDM methodology	Check the test reports/methods; check qualifications/ capabilities of testers; Witnessing of testing in CME's laboratory.	Whether conducted by qualified institutions/testers; Whether conducted in accordance with approved established international/national standards, procedures and test methods prescribed by applicable CDM methodologies.
By=1,new,i,survey Annual quantity of woody biomass used during the	Annual quantity of woody biomass used during the project activity in tonnes	1. Confirmation with the household which method i.e.	Cross check the results obtained by the CME and those revealed from

project activity in tonnes per device of type i “		<p>undertook measurement or questionnaires or interviews without measurement was used.</p> <p>2. If it is solely based on questionnaires or interviews whether the following conditions are satisfied in the household:</p> <p>(a) Pre-project devices have been completely decommissioned and only efficient project devices are exclusively used in the project households;</p> <p>(b) If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of woody biomass being used by each device.</p> <p>3. Confirmation on the consumption by the households on daily/weekly/monthly basis</p>	the DOE's interviews, account for duly justified differences.
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The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology /B02/ and the PoA-DD/CPA-DDs /B04/. The CME has appropriately performed Sampling procedure in line with the applied methodology.

The necessary confidence / precision of 95/10 each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted /04/.

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	--	01	--
Remaining forward action requests from validation and/or previous verifications	--	--	03
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 ²	--	--	--
• 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	--	01	01
Compliance of monitoring activities with the registered monitoring plan	02	01	--
• Data and parameters fixed ex ante or at renewal of crediting period	--	--	--
• Data and parameters monitored	--	--	--
• Implementation of sampling plan	--	01	--
Compliance with the calibration frequency requirements for measuring instruments	--	01	--
Assessment of data and calculation of emission reductions or net removals	--	--	--
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	--	01	--
• 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	--	--	--

² 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).

Global stakeholder consultation	--	--	--
Others (please specify & R Check comment)	01 --	--	--
Total	032	06	04

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	CAR-01 had been raised and satisfactorily closed. Please refer to Appendix 4 for further details.
Conclusion	<p>CME has used the Monitoring report form for CDM programme of activities, Version 03.0 /B03/. Verification team confirms that the latest available version of the Monitoring report template /B03/ has been used by the CME and the MR is in compliance of the monitoring report form and instructions therein /B03/.</p> <p>CC IPL, had made the version 1.0, dated 27/04/2020 of the monitoring report /1/, covering the monitoring period from 10/03/2016 to 29/02/2020 (both days inclusive) publicly available on 06/05/2020.</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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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)
Household appliance distribution in TimorLeste 10030-P1-0001-CP1	No	10/03/2016	18	N
Household appliance distribution in Myanmar CPA002 10030-P1-0002-CP1	No	08/01/2020	18	N
Household appliance distribution in Lao PDR CPA003 (10030-P1-0003-CP1)	Yes	08/01/2020	21	N

Household appliance distribution in Cambodia – CPA004 (10030-P1-0004-CP1)	Yes	08/01/2020	21	N
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E.2. Programme of activities

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

Means of verification	Document Review, Remote interview
Findings	--
Conclusion	<p>CC IPL by means of an remote interviews and document review, assessed that all physical features (technology, project equipment, and monitoring equipment) of the included CPAs in the approved revised PoA-DD are in place and that the coordinating/managing entity has operated the PoA and the CPAs as per the approved revised PoA-DD and the revised CPA-DDs.</p> <p>There are no deviations or proposed or actual changes in the implementation or operation of the PoA and the included CPAs.</p> <p>The verification team confirms actual operation of the CPAs and PoA implementation and operation in compliance with the revised PoA-DD / revised CPA-DDs in order to confirm 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

Means of verification	Document Review, Remote interview
Findings	--
Conclusion	<p>The PoA management system including the record-keeping system has been explained in the approved revised PoA-DD /B04/. During the course of verification, verification team based on review of provided documents and remote 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, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system.</p> <p>Monitoring surveys were conducted by the CME. The records of sales database /05-1/ have been verified during the course of verification. The data is further periodically spot checked /05-2/ (through review of electronic database and sample sales receipts) by the CME to ensure there is no double counting. This provision for the avoidance of double counting as outlined in the PoA management system has been verified by means of review records of sales database /05-1, 2/ and remote interview/observation during the course of verification. The unique serial numbering system /11/ with photograph of the users with stoves /07/ and the sales database were further cross-checked (on a sampling basis) during the document review process.</p> <p>It was confirmed during the remote interviews 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.</p> <p>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 /02/. The data flow and management and reporting structure was also confirmed during the remote interviews.</p> <p>The verification team confirms that the monitoring management system of the CDM</p>

	PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of § 340 (a) and § 347 (b) (iv) 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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PRC-10030-001: Approval date — 25/07/2019

1. In Section I.6.1, the registered PoA made it mandatory to use option (a) for determining Bold for Charcoal cookstoves and option (c) for determining Bold value for wood fuel cook stoves. This condition has been corrected and now either of options (a) or (c) can be used for determining Bold value for wood fuel cook stoves.
2. During the registration, CO₂ was mistakenly excluded from project scenario under “In case of CPAs involving deployment of efficient cook stoves”. The correction was made in section I.4 of the PoA-DD.

E.2.3.2. Inclusion of a monitoring plan

>>

There are no inclusions of monitoring plan to the registered programme of activities has been approved by the Board during this monitoring 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

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PRC-10030-001: Approval date — 25/07/2019

(i) The initial monitoring plan requires the monitoring to be conducted separately for each CPA. The revision is made to enable sampling by grouping of CPAs if the following requirement is met — “Alternatively, for the CPAs implemented in the same country and applying the same combinations of methodologies, a single sampling plan covering a group of CPAs can be undertaken to collect the data required.”

(ii) Revision is made on sample size calculation to demonstrate the use of Student’s t-distribution where the parameter of interest is a numeric mean value (i.e. not a proportion or percentage) and the resulting sample size is less than 30.

(iii) Requirement of reporting number of members in a household has been removed.

(iv) Approach to determine $B_{y,saving}$

In Section I.6.1, under “In case of CPAs involving deployment of efficient cook stoves”, the formula below is added to allow additional option to determine $B_{y,savings,i,a}$

$$B_{y,savings,i,a} = B_{y=1,new,i,survey} \times \left(\frac{\eta_{new,i,a=1} \times \Delta \eta_{y,i,a}}{\eta_{old}} - 1 \right)$$

Accordingly, the parameter table for $B_{y=1,new,i,survey}$ is added in Section I.7.1.

PRC-10030-002: Approval date — 11/05/2020

1. Approach to determine $B_{y,saving}$

In the registered, approved PoA DD version 18, estimation of $B_{y,saving}$ for Lao PDR was based on equation 5 of the applied methodology under Water Boiling Test option. Through this PRC, the CME has revised the option and now equation 6 of the applied methodology is proposed to be used for estimation of $B_{y,saving}$.

Accordingly in Section I.7.1, choice of option for Lao PDR has been changed to 2, for parameter $B_{y,saving,i,a}$ and for $B_{y=1,new,i,survey}$, Lao PDR has been added.

2. Option to declare the value of $B_{y=1,new,i,survey}$ at the time of first verification.

The option of declaring $B_{y=1,new,i,survey}$ value at the time of first verification has been included keeping in mind the CPAs for which project stove installation begins after CPA inclusion hence the value $B_{y=1,new,i,survey}$ is not available at the time of inclusion.

E.2.3.4. Changes to the programme design

>>

PRC-10030-001: Approval date – 25/07/2019

- (i) Expansion of the geographical coverage or to include additional host Parties

Lao PDR and Cambodia are included as additional boundary to the PoA and the relevant sections/information in PoA-DD are updated accordingly.

- (ii) Changes to Project Participant
Withdrawal of Brighterlite Norway AS, as project Participant.

- (iii) A revision to the eligibility criteria pertaining to the demonstration of additionality

During the registration, each CPA was considered as small-scale project activity and Methodological tool: "Demonstration of additionality of small-scale project activities" was applied for the CPA. However, as each CPA being developed under the present PoA is envisaged to consist exclusively of units that can be defined as microscale CDM unit hence Methodological tool: Demonstration of Additionality of microscale project activities; version 09.0 is being applied for demonstration of additionality. Accordingly, section C of the PoA DD has been revised.

- (iv) Revision in eligibility criteria for inclusion of CPA in section H.3 and K

Addition of criteria as per paragraph 124 (m) and (n) of CDM project standard for programmes of activities; version 02.0; exempting CPAs consisting solely of microscale CDM units from demonstrating compliance with small scale or microscale threshold at the CPA level as well as conducting debundling check.

- (v) Revision in eligibility criteria to remove criteria on Environmental Impact Analysis to be conducted at CPA level

Environmental Impact Analysis will be conducted at PoA level for each of the geographic boundary included in the programme, hence this criterion is being removed from the eligibility criteria for inclusion of CPAs.

- (vi) Removal of applied methodology and standardized baselines from the PoA-DD

The PoA removes the application of methodology AMS-III.AV: Low greenhouse gas emitting safe drinking water production systems (version 4) and its standardized baselines from PoA-DD. In accordance with the removal of AMS-III.AV, the application of water filter is removed from PoA-DD.

- (vii) Change of technologies/measures

The PoA removes the option to replace charcoal stoves, therefore only replacement of wood-fuel stoves will be considered under this PoA.

PRC-10030-002: Approval date – 11/05/2020

4. Expansion of the geographical coverage or to include additional host Parties
Kenya and Uganda are included as additional boundary to the PoA and the relevant sections/information in PoA-DD are updated accordingly.

2. Revision to eligibility criteria pertaining to demonstration of additionality Application of figure 1 in appendix to Tool 21, 'Demonstration of additionality of small- scale project activities' (version 13.0) for demonstrating additionality of project activities which are not eligible for auto additionality under tool 19.

E.2.3.5. Addition of CPA inclusion template

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Not Applicable

E.2.3.6. Change of coordination/managing entity

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Not Applicable

E.2.3.7. Changes specific to afforestation and reforestation activities

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Not Applicable

E.3. Component project activities

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

Means of verification	Document Review, Interview																																								
Findings	--																																								
Conclusion	<p>The implementation status of the PoA and the component project activities is:</p> <table border="1"> <tr> <td>Co-ordinating and Managing entity/Project Participants:</td><td>Differ Cookstoves AS</td></tr> <tr> <td>Title of the PoA:</td><td>Household energy appliance programme</td></tr> <tr> <td>UNFCCC registration No:</td><td>PoA- 10030</td></tr> <tr> <td>Applied Baseline and monitoring methodology:</td><td>AMS-II.G, Version 06, AMS-I.A Version 16</td></tr> </table> <table border="1"> <tr> <td>Title of the CPA:</td><td>Household energy appliance programme</td></tr> <tr> <td>CPA reference number:</td><td>10030-P1-0003-CP1</td></tr> <tr> <td>Date of inclusion:</td><td>08/01/2020</td></tr> <tr> <td>CPA implementer</td><td>Differ Cookstoves AS</td></tr> <tr> <td>Project Scale:</td><td>Small scale</td></tr> <tr> <td>Location of the CPA:</td><td>Lao People's Democratic Republic</td></tr> <tr> <td>CPA crediting period:</td><td>08/01/2020 to 07/01/2027</td></tr> <tr> <td>Reported monitoring Period verified in this verification:</td><td>10/03/2016 to 29/02/2020</td></tr> </table> <table border="1"> <tr> <td>Title of the CPA:</td><td>Household energy appliance programme</td></tr> <tr> <td>CPA reference number:</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>Date of inclusion:</td><td>08/01/2020</td></tr> <tr> <td>CPA implementer</td><td>Differ Cookstoves AS</td></tr> <tr> <td>Project Scale:</td><td>Small scale</td></tr> <tr> <td>Location of the CPA:</td><td>Cambodia</td></tr> <tr> <td>CPA crediting period:</td><td>08/01/2020 to 07/01/2027</td></tr> <tr> <td>Reported monitoring Period verified in this verification:</td><td>10/03/2016 to 29/02/2020</td></tr> </table> <p>As a part of the remote interview, the verification team was able to confirm that the</p>	Co-ordinating and Managing entity/Project Participants:	Differ Cookstoves AS	Title of the PoA:	Household energy appliance programme	UNFCCC registration No:	PoA- 10030	Applied Baseline and monitoring methodology:	AMS-II.G, Version 06, AMS-I.A Version 16	Title of the CPA:	Household energy appliance programme	CPA reference number:	10030-P1-0003-CP1	Date of inclusion:	08/01/2020	CPA implementer	Differ Cookstoves AS	Project Scale:	Small scale	Location of the CPA:	Lao People's Democratic Republic	CPA crediting period:	08/01/2020 to 07/01/2027	Reported monitoring Period verified in this verification:	10/03/2016 to 29/02/2020	Title of the CPA:	Household energy appliance programme	CPA reference number:	10030-P1-0004-CP1	Date of inclusion:	08/01/2020	CPA implementer	Differ Cookstoves AS	Project Scale:	Small scale	Location of the CPA:	Cambodia	CPA crediting period:	08/01/2020 to 07/01/2027	Reported monitoring Period verified in this verification:	10/03/2016 to 29/02/2020
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component project activities implementation are in accordance with the project description contained in the revised CPA-DDs /B04/.

The CPAs include distribution of energy efficient improved cooking stoves. During the reported monitoring period, 10030-P1-0003-CP1 and 10030-P1-0004-CP1 implemented SSM S32-13 cookstoves /06/, which is designed to use wood fuel /06/ as fuel.

The number of stoves deployed under each CPAs has been confirmed by the stove database /05/ and as stated below:

SI .No.	CPA Reference No.	Number of ICS Distributed
1	10030-P1-0003-CP1	851
2	10030-P1-0004-CP1	195
Total		1,046

It was confirmed during the remote interviews that Differ Cookstoves AS is the Coordinating/Managing Entity for the PoA. The actual component project activity/ies are in line with the revised CPA-DDs /B04/. As per the revised CPA-DDs /B04/, C-Quest Capital Stoves Asia Limited, Ecoeye Co. Ltd. and Korea Zinc Co. Ltd. are the CPA implementers for the CPAs (10030-P1-0003-CP1 and 10030-P1-0004-CP1). The information (including data and variables) provided in the MR /02/ is in line with the details provided in the revised CPA-DDs /B04/.

The Monitoring report /02/ for the first monitoring period (10/03/2016 to 29/02/2020) is for 10030-P1-0003-CP1 and 10030-P1-0004-CP1.

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

In accordance with § 342 of CDM VVS for PoAs, version 02 /B01-1/, the verification team confirms that there is no information (data and variables) in the current monitoring period that are different from that stated in the revised CPA-DDs which has caused an increase in the estimates of GHG emission reductions.

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, Version 02.0. In the opinion of CC IPL, there is no change to the project design. CC IPL's verification team confirms that the CPAs are implemented within the boundary of the PoA as described in the approved revised PoA-DD and the implementation and operation of the project activity has been conducted in accordance with the description contained in the revised CPA-DDs.

The verification team took cognizance of § 340, § 341 and § 342 of the CDM VVS for PoAs, version 02 /B01-1/ to conduct the verification and conducted a remote interviews in accordance with the CDM VVS for PoAs, version 02 /B01-1/.

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 from the registered monitoring plan, monitoring methodology or standardized baseline during the monitoring period.

E.3.2.2. Corrections

>>

1. 10030-P1-0003-CP1: Household appliance distribution in Lao PDR – CPA003
2. 10030-P1-0004-CP1: Household appliance distribution in Cambodia – CPA004

Corrections were made in CPA-DDs to update them in line with the latest approved revised PoA-DD (Version 21, 24/02/2020). CPAs involve correction due to update based on latest approved PoA-DD such as update in the option to declare the value of $B_{y=1, new, i, survey}$ at the time of verification as per FAR raised during the CPA Inclusion.

PRC Approval Date: 05/07/2020

PRC-10030-003: 10030-P1-0003-CP1 Household Appliance Distribution in Lao PDR-CPA003
<https://cdm.unfccc.int/CPAPostRegChanges/DB/prcp316135586/view>

PRC-10030-004: 10030-P1-0004-CP1 Household Appliance Distribution in Cambodia-CPA004
<https://cdm.unfccc.int/CPAPostRegChanges/DB/prcp482532165/view>

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

>>

There are no changes to the start date of the crediting period for the CPAs.

E.3.2.4. Inclusion of a monitoring plan

>>

There are no inclusions of monitoring plan to included CPA-DDs.

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 are no permanent changes to the registered monitoring plan or permanent deviation of the monitoring from applied methodologies during the current monitoring period

E.3.2.6. Changes to the project design

>>

There are no changes to the programme design of the included CPA-DDs

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	Document Review, Interview
Findings	CAR-02 had been raised and satisfactorily closed. Also FAR-01 has been raised during the current verification. Please refer to Appendix 4 for further details.
Conclusion	<p>The verification team is able to confirm that the monitoring plan contained in the revised CPA-DDs is in accordance with the approved methodology applied by the project activity, i.e. AMS-II. G, version 06 /B02/.</p> <p>The monitoring plan is in accordance with the approved methodology, AMS-II. G, version 06 /B02/, applied by the component project activities and as provided in the CPA-DDs /B04/.</p>

	The verification took cognizance of § 343 to § 345 of CDM VVS for PoAs, Version 02.0 /B01-1/.
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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	Document Review, Interview
Findings	--
Conclusion	<p>Verification team confirms that the Data and parameters fixed ex ante are in compliance with the revised CPA-DDs /B04/ and the monitoring plan. Please refer Annex 1 for detailed analysis of the ex-ante parameters.</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

Means of verification	Document Review, Interview
Findings	CL 01, CL 02, CAR-03 had been raised and satisfactorily closed. Please refer to Appendix 4 for further details.
Conclusion	<p>The Verification team confirms that the Data and parameters monitored are in compliance with the revised CPA-DDs /B04/ and the monitoring plan /B04/. A complete assessment of each of the monitored parameters has been provided in Annex 2 of the verification report.</p> <p>The verification took cognizance of § 346, § 347(c), §358 and §359 of CDM VVS for PoAs, Version 02.0 /B01-1/.</p>

E.3.4.3. Implementation of sampling plan

Means of verification	Document Review, Interview		
Findings	CAR-04 had been raised and satisfactorily closed. Please refer to Appendix 4 for further details.		
Conclusion	The population of the stoves under the two CPAs considered for the monitoring period are:		
	SI .No.	CPA Reference No.	Number of ICS Distributed
	1	10030-P1-0003-CP1	851
	2	10030-P1-0004-CP1	195
	The monitoring parameters required to be monitored through the sampling plan are:		
	Parameter	Description of Parameter	Parameter of Interest
	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation ($a=1$) and Thermal efficiency of the device of type i being deployed as part of the project activity with age ' a '	Mean
$B_{y=1,new,i,survey}$	Annual quantity of woody biomass used during the project activity in tonnes per device of type i	Mean	
$N_{y,i,a}$	Number of project devices of type i and age a that are operating in year y .	Proportion	
$\mu_{y,i}$	Number of days of utilization of the cook stove device of type i during the year y	Proportion	
Separate sampling for both the CPAs has been carried out with 95/10 confidence/precision for all the parameters for annual monitoring which is deemed acceptable.			

Applying the random number generator, the ICS were randomly picked from the defined population upto the required sample size as calculated by the CME /08/. The verification team confirms that the applied method for sample size calculation is in accordance with the PoA-DD / CPA-DDs /B04/.

CPA 003:

Parameter	Sample Size (n) required	Samples covered during monitoring
$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	7	7
$B_{y=1,new,i,survey}$	41	50
$N_{y,i,a}$	50	50
$\mu_{y,i-}$	4	50

CPA 004:

Parameter	Sample Size (n) required	Samples covered during monitoring
$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	7	7
$B_{y=1,new,i,survey}$	35	48
$N_{y,i,a}$	42	48
$\mu_{y,i-}$	4	48

As the actual sample size in all the cases was not less than the initially calculated sample size, the sample size covered by the CME was accepted.

As these were based on sampling approach, the reliability of precision was checked and found within the prescribed limit (<10%). The same is deemed appropriate by Verification team and in accordance with the revised and approved PoA-DD/revised CPA-DDs /B04/.

For the monitoring parameters data were collected following a specially designed survey form. For thermal efficiency of the stoves WBTs (Water Boiling Tests) were conducted.

DOE used acceptance sampling for the assessment of the CME's sampling/survey. Please refer to the assessment under section D.4 for further details.

The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology /B02/ and the PoA-DD/CPA-DDs /B04/. The CME has appropriately performed Simple Random Sampling procedure in line with the applied methodology and best suited for this type of project.

The necessary confidence / precision of 95/10 each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted /04/. Please also refer to the assessment provided in Annex 3 of this report.

The verification took cognizance of § 348 of CDM VVS for PoAs, Version 02.0 /B01-1/.

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

Means of verification	Document Review, Interview
Findings	CAR-05 had been raised and satisfactorily closed. Please refer to Appendix 4 for further details.
Conclusion	The stove efficiency testing has been determined by WBTs conducted inline with requirements of the revised CPA-DDs /B04/. The WBTs were conducted /10/ by the CME. During the remote interviews, it was confirmed that the personnel involved in the WBT test has relevant experience and competence in monitoring cookstove projects. The monitoring equipment used for conducting the stove efficiencies by WBTs are thermometer, weighing machine and moisture meter. All the monitoring equipment were duly calibrated and hence deemed acceptable /10-5,6/. The

	appropriate QA/QC procedures have been followed for the monitoring parameters.
	The verification took cognizance of section 10.2.6 of CDM VVS for PoAs, version 02 /B01-1/.

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	Document Review, Interview
Findings	CAR-06 had been raised and satisfactorily closed. Please refer to Appendix 4 for further details.
Conclusion	<p>The equations for baseline emissions, as provided in the Monitoring report /02/ and confirmed with the revised CPA-DDs /B04/ and the methodology AMS-II.G, Version 06 /B02/, are:</p> <p>Emission reductions have been calculated as:</p> $ER_y = \sum_i ER_{y,i}$ <p>Where,</p> <p><i>i</i> Indices for the situation where more than one type of project device introduced to replace the pre-project devices</p> <p>ER_y Emission reductions during year <i>y</i> in t CO₂e</p> <p>$ER_{y,i}$ Emission reductions by project device of type <i>i</i> during year <i>y</i> in t CO₂e</p> $ER_{y,i} = \sum_{a=1}^{a=y} B_{y,savings,i,a} \times N_{y,i,a} \times \frac{\mu_{y,i}}{365} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel} - LE_y$ <p>Where,</p> <p><i>A</i> 'a' is the indices for the age (in years) of the cook stoves that are operating in the year 'y' of the crediting period.</p> <p>$B_{y,savings,i,a}$ Quantity of woody biomass that is saved in tonnes per cook stove device of type <i>i</i> and age <i>a</i> in year <i>y</i></p> <p>$f_{NRB,y}$ Fraction of woody biomass saved by the project activity in year <i>y</i> that can be established as non-renewable biomass using survey methods or government data or default country specific fraction of non-renewable woody biomass (f_{NRB}) values available on the CDM website</p> <p>NCV_{biomas} Net calorific value of the non-renewable woody biomass that is substituted</p> <p>$EF_{projected_fossil\ fuel}$ Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers</p> <p>$N_{y,i,a}$ Number of project devices of type <i>i</i> and age <i>a</i> operating in year <i>y</i></p> <p>$\mu_{y,i}$ Number of days of utilization of the project device during the year <i>y</i></p> <p>LE_y Leakage emissions in the year <i>y</i></p> <p>In line with paragraph 14 of the methodology, $B_{y,savings,i,a}$ has been estimated using option 2 that is water boiling test (WBT)</p> <p>Under WBT option, 2 options are given to determine $B_{y,savings,i,a}$.</p> <p>Equation 6 has been used for calculating $B_{y,savings,i,a}$.</p>

$$B_{y,savings,i,a} = B_{y=1,new,i,survey} \times \left(\frac{\eta_{new,i,a=1} \times \Delta\eta_{y,i,a}}{\eta_{old}} - 1 \right)$$

Where,

$B_{y=1,new,i,survey}$

Annual quantity of woody biomass used by project devices in tonnes per device of type i , determined in the first year of the introduction of the devices (e.g. during the first year of the crediting period, $y=1$) through a sample survey. Sample surveys to estimate this parameter, that are solely based on questionnaires or interviews (i.e. that do not implement measurement campaigns) may only be used if the following conditions are satisfied:

(a) Pre-project devices have been completely decommissioned and only efficient project devices are exclusively used in the project households;

(b) If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of woody biomass being used by each device. In other words, if more than one device, or another device that consumes woody biomass, are in use in project households, then the sample survey needs to distinguish the quantity of biomass used by the project device and the other devices That use biomass.

η_{old}

Efficiency of the pre-project device (fraction)

$\eta_{new,i,a=1}$

Thermal efficiency of the device of type i being deployed as part of the project activity (fraction), using the WBT protocol carried out in accordance with national standards (if available) or international standards or guidelines, for the initial efficiency determined in the year of its installation ($a=1$).

$\Delta\eta_{y,i,a}$

Factor to consider the efficiency loss of the project device type i due to its aging at the year y , as expressed as follows:

$$\Delta\eta_{y,i,a} = \frac{\eta_{new,i,a}}{\eta_{new,i,a=1}}$$

where $\eta_{new,i,a}$ is the thermal efficiency of the device ' i ' with age ' a ' determined using the WBT and $\eta_{new,i,a=1}$ is the thermal efficiency of the device at its first year of operation. $\Delta\eta_{y,i,a}$ may be determined through sample surveys of project device type i with the same age at each year of the crediting period.

Based on the above equation and the parameter values, emission reductions are calculated as:

10030-P1-0003-CP1: 419 t CO₂e

10030-P1-0004-CP1: 104 t CO₂e

Total: 523 t CO₂e

The verification team confirms that the calculation of baseline emission and emission reductions is in accordance with the applied methodological equation and the revised CPA-DDs. Calculations have been checked and confirmed from the ER spread sheet /04/.

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	Document Review, Interview
Findings	-
Conclusion	There are no project emissions identified in the monitoring methodology /B02/ and

the CPA-DDs /B04/.

E.3.6.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	-
Conclusion	Leakage adjustment factor for leakage (fixed default values of 0.95 as per AMS II.G. version 06) /B02/ was applied to the project activity to calculate Emission Reductions of this Monitoring Period. 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 revised CPA-DDs /B04/.

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

Means of verification	Document Review, Interview
Findings	-
Conclusion	The 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 revised CPA-DDs. The total number of ERs achieved during the monitoring period is 523 tCO _{2e} . In summary, verification team confirms that actual emission reduction is lower than the estimate of the revised CPA-DDs /B04/ for the current monitoring period. The verification took cognizance of § 358 of CDM VVS PoAs, version 02 /B01-1/.

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO _{2e})	Project emissions or actual net GHG removals by sinks (tCO _{2e})	Leakage (tCO _{2e})	GHG emission reductions or net GHG removals by sinks (tCO _{2e})		
				Amount achieved before 1 January 2013(tCO _{2e})	Amount achieved from 1 January 2013 (tCO _{2e})	Amount achieved in the entire monitoring period (tCO _{2e})
10030-P10003-CP1	419	0	0	0	419	419
10030-P10004-CP1	104	0	0	0	104	104
Total	523	0	0	0	523	523

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

Means of verification	Document Review
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 /B01-1/.

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period (tCO _{2e})	Value estimated in ex ante calculation in the included CPA-DD(s) (tCO _{2e})
10030-P10003-CP1	419	720

10030-P10004-CP	104	266
Total	523	986

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

Means of verification	Document review
Findings	--
Conclusion	The actual emission reductions are less than the ex-ante estimated values in the revised CPA-DDs.

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

Means of verification	Not applicable (as there are no sustainable development co-benefits required as per the registered CDM PoA-DD)
Findings	-
Conclusion	Not applicable The verification took cognizance of § 361 of CDM VVS PoAs, version 02 /B01-1/.

E.3.8. Global stakeholder consultation

Means of verification	DR
Findings	--
Conclusion	No comments received during the global stakeholder consultation process. In accordance with §370 of CDM VVS PoAs (version 02.0) /18/, verification team confirms that no comments received during the global stakeholder consultation process.

SECTION F. Internal quality control

>>

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

SECTION G. Verification opinion

>>

Carbon Check (India) Private Ltd. has performed the first (1st) periodic verification of the registered CDM Programme of Activities "Household energy appliance programme" and the CPAs; "Household appliance distribution in Lao PDR - CPA003" (10030-P1-0003-CP1) and "Household appliance distribution in Cambodia – CPA004" (10030-P1-0004-CP1).

The verification team assigned by the DOE concludes that the PoA-DD (Version 21, dated 24/02/2020), CPAs 10030-P1-0003-CP1 and 10030-P1-0004-CP1, as described in the revised and revised CPA-DDs /B04/ and the Monitoring report (Version 3.0, dated 05/06/2020) /02/, 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 CDM VVS for programme of activities requirements version 02.0 /B01-1/.

Verification methodology and process:

The Verification team confirms the contractual relationship signed on 08/04/2020 between the DOE, Carbon Check (India) Private Ltd. and the Co-ordinating Managing Entity/ Project Participant, Differ cookstove AS. The team assigned to the verification meets the Carbon Check (India) Private Ltd.'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 Carbon Check's procedures and requirements.

The verification is being performed as per the requirements described in the CDM VVS for PoAs, version 02.0 /B01-1/ and constitutes the review and completion of the following steps:

- Reviewing the approved revised PoA-DD (Version 21.0, date 24/02/2020), the revised CPA-DDs (10030-P1-0003-CP1 and 10030-P1-0004-CP1) (/B04/), including the monitoring plan and the corresponding validation report/s /B04/;
- Publication of the MR on the UNFCCC website (version 1.0, 27/04/2020) on 06/05/2020
- 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-II.G, version 06);
- Review of any CMP and EB decisions, clarifications and guidance;
- Remote interviews (21/05/2020-23/05/2020)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The component project activities were correctly implemented according to the selected monitoring methodology, monitoring plan and the revised CPA-DDs. 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 interviews, the verification team confirms that the PoA has resulted in the 523 tCO₂e emission reductions during the first monitoring period.

Verified emission reductions:

10030-P1-0003-CP1 -- 419 tCO₂e
 10030-P1-0004-CP1 -- 104 tCO₂e

The break-up of emission reduction upto 31st December 2012 and 1st January 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
Emission reductions (t CO ₂ e)	0	523

CCIPL as a DOE is therefore pleased to issue a positive verification opinion 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, UNFCCC Registration Number 10030, "Household energy appliance programme" for the CPAs:

Sl. #	CPA Reference Number	Title of the CPA
1.	10030-P1-0003-CP1	Household appliance distribution in Lao PDR – CPA003
2.	10030-P1-0004-CP1	Household appliance distribution in Cambodia-CPA004

The component project activities are designed to generate emission reductions by distribution of the fuel-efficient cook stoves to households in Lao PDR and Cambodia. The fuel-efficient cook stoves are replacing the traditional stoves that were being used in the baseline scenario.

The CME is responsible for the monitoring, 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 verification is carried out in-line with the requirements of CDM VVS for PoA (version 02.0).

The verification was performed to identify the compliance of the component project activities with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information through remote interviews 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:

- Revised and approved PoA-DD) /B04-1/;
- Revised CPA-DD/s included in the registered PoA and its monitoring plan /B04/;
- Approved monitoring methodology AMS-II.G "Energy efficiency measures in thermal applications of non-renewable biomass" (version 6.0) /B02/;
- Validation report /B04/ for the PoA and CPA/s;
- Monitoring report(s) /01/, /02/.

This statement covers verification period from 10/03/2016 to 29/02/2020.

The DOE had raised ~~three~~ (03) clarification requests (CLs) and six (06) corrective action requests (CARs), all of which are closed. There are three (03) Forward action required (FAR) raised during the validation, in which two FAR is satisfactorily closed which was under the scope of this verification and one FAR is still open which is not applicable for this verification. One (01) Forward action required (FAR) has been raised during this verification, which shall be addressed during subsequent verification.

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 revised CPA-DDs /B04/ is fairly stated.

The DOE hereby certifies that 523 tCO₂e of emission reductions by sources of GHG have been achieved by the programme of activity and all monitoring requirements have been fulfilled, which is

substantiated by an audit trail that contains evidence and records. The break-up of emission reduction from 10/03/2016 to 29/02/2020 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 (tCO ₂ e)	0	523

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Limit
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 ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CQC	C-Quest Capital Stoves Asia Limited
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
MP	Monitoring Period
MWh	Mega Watt Hour
MR	Monitoring Report
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
QC/QA	Quality control /Quality assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
WBT	Water boiling test

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	<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 Expert 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
24/12/2019

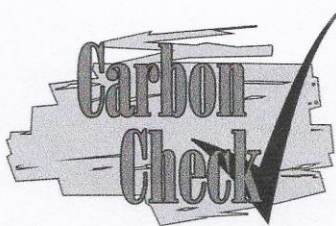
Valid Till
23/12/2020

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

¹ India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
Registered in India: U74930DL2012PTC232495
Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
Tel: +91 120 4373114 | URL: www.carboncheck.co.in
e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Sanjay Agarwalla

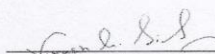
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

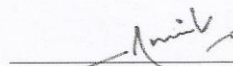
For following functions:

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 Expert 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 checked="" type="checkbox"/>	TA 9.2	<input checked="" type="checkbox"/>	TA 13.2	<input 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 checked="" type="checkbox"/>	TA 5.1	<input checked="" type="checkbox"/>	TA 9.1	<input checked="" type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		


Mr. Vikash Kumar Singh
 Compliance Officer


Mr. Amit Anand
 CEO

Date of Approval
 24/12/2019

Valid Till
 23/12/2020

Revision History of the Document

26/12/2014	Initial Adoption
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23/12/2017	Annual Revision
24/12/2018	Annual Revision
24/12/2019	Annual Revision

¹ India

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 e-mail: info@carboncheck.co.in

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	Differ Cookstoves AS	Monitoring report	Version 1.0, dated 27/04/2020	CME
/02/	Differ Cookstoves AS	Final Monitoring report	Version 03.0, dated 05/06/2020	CME
/03/	Differ Cookstoves AS	Emission reduction calculation spread sheets for the CPAs corresponding to /01/	-	CME
/04/	Differ Cookstoves AS	Emission reduction calculation spread sheets for the CPAs corresponding to /02/	-	CME
/05/	Differ Cookstoves AS	<ol style="list-style-type: none"> 1. CPA distribution records including evidence for the dates of distribution 2. Spot checked report by CME (through review of electronic database and sample sales receipts) for the monitoring period. 3. Sample sales receipts 	-	CME
/06/	Differ Cookstoves AS	Evidence for the stove specifications (SSM S32-13) distributed under the CPA(s) during the reported monitoring period.	-	CME
/07/	Differ Cookstoves AS	Evidence of Carbon Credits waivers	-	CME
/08/	Differ Cookstoves AS	Evidence for the random sample generator for the parameters opted for sampling/survey.	-	CME
/09/	Differ Cookstoves AS	Initial Sample size calculation sheet included as a part of (/03/, /04/) along with actual samples conducted and the reliability assessment.	-	CME
/10/	Differ Cookstoves AS	Records of water boiling test: <ol style="list-style-type: none"> 1. WBT Protocol used 2. Raw sheet of data capture 3. Excel sheet for the calculation of individual WBTs 4. Training and Competency Records of the WBT personnel/ monitoring personnel. 5. Manufacturer's specifications of the equipment used for conducting WBTs 6. Purchase invoices/ receipts for the monitoring equipment (WBT)/ Calibration certificates of WBT equipment 	--	CME
/11/	Differ Cookstoves AS	Evidence for unique identification of each of the ICS stoves	--	
/12/	Differ Cookstoves AS	Data source of the parameter "N _{y,i,a} Number of project devices of type i and age a operating in year y" (same as	-	CME

		evidence /05/).		
/13/	Differ Cookstoves AS	Data source of the parameter " $B_{y=1,new,i,survey}$ Annual quantity of woody biomass used during the project activity in tonnes per device of type i" - Scan copy of survey sheets and Survey records as contained in the ER spread sheet /03/,/04/	-	CME
/14/	Differ Cookstoves AS	Usage Survey of the project ICS including quantification of use of baseline devices, by formulating questions to determine the frequency of usage of both the project devices and baseline devices. - Scan copy of survey sheets and Survey records as contained in the ER spread sheet /03/,/04/	-	CME
/15/	Differ Cookstoves AS	Data source of the parameter " $B_{y,savings,i,a}$ Quantity of woody biomass that is saved in tonnes per cook stove device of type i and age a in year y" - Calculated parameter as provided in the ER spread sheet /03/,/04/	-	CME
/16/	Differ Cookstoves AS	Data source of the parameter " $\mu_{y,i}$ Number of days of utilization of the cook stove device of type i during the year y" - Scan copy of survey sheets and Survey records as contained in the ER spread sheet /03/,/04/	-	CME
/17/	Third party	Evidence of CER Delivery Commitment	-	CME
/18/	Differ Cookstoves AS	Pilot Study conducted in Lao PDR and Cambodia	-	CME
/19/	Differ Cookstoves AS	Interim Monitoring report	Version 2.0, dated 01/06/2020	CME
/20/	Differ Cookstoves AS	Emissions Reduction Project Funding Agreement between C-Quest Capital Stoves Asia Ltd, Ecoeye Co., Ltd, and Korea Zinc Co., Ltd.	--	CME
<u>/21/</u>	<u>Differ Cookstoves AS</u>	<u>fNRB calculation spread sheet (prepared by the CME) of Lao PDR and</u>	<u>--</u>	<u>CME</u>
<u>/22/</u>	<u>C4EcoSolutions</u>	<u>C4EcoSolutions's (Third party contracted by the CME) report as well fNRB calculation spread sheet.</u>	<u>24/08/2018</u>	<u>CME</u>
/B01/	UNFCCC	1.Validation and Verification Standard for PoAs, version 02 2.Project Standard for PoAs, version 2 3.Project Cycle Procedure for PoAs, version 02	http://cdm.unfccc.int/	Others
/B02/	UNFCCC	Applied baseline and monitoring methodology, AMS-II.G, version 06.0	http://cdm.unfccc.int/	Others
/B03/	UNFCCC	Instructions for filling out the monitoring report form for CDM programme of activities, version 03.0	http://cdm.unfccc.int/	Others
/B04/	UNFCCC	Approved revised PoA-DD (Version 21 dated 24/02/2020), (CPA-DD for CPA003 10030-P1-0003-CP1: Version 03.1 date 14/05/2020; and CPA004,	http://cdm.unfccc.int/	Others

		10030-P1-0004-CP1: Version 03.1, date 14/05/2020 and corresponding validation reports.		
/B05/	Web sites	Websites: http://cdm.unfccc.int/ http://www.ipcc-nggip.iges.or.jp/	--	Others
/B06/	UNFCCC	Guidelines: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0	http://cdm.unfccc.int/	Others
/B07/	UNFCCC	Standard: Sampling and surveys for CDM project activities and programmes of activities, version 08.0	http://cdm.unfccc.int/	Others
/B08/	UNFCCC	Guideline: Application of materiality in verifications" Version 02.0	http://cdm.unfccc.int/	Others
/B09/	UNFCCC	SSWG Clarification: 713 & AMS-II.G, version 06.0	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	01	Section no.	--	Date: 29/05/2020
Description of FAR				
CME to determine the value of $B_{y=1, new, i, survey}$, based on baseline survey to be conducted at the time of first verification and update the same in CPA-DD before starting first verification for CPA 10030-P1-0004-CP1.				
CME response				Date: 01/06/2020
<i>According to revised and approved PoA DD; version 21, this value can now be declared at verification and shall remain constant throughout the crediting period. The survey has been conducted and value has been submitted to the verifying DOE. Also the notification of changes to CPAs as per para 178 of PCP-PoA, version 2.0 has been sent to UNFCCC for approval.</i>				
Documentation provided by the CME				
--				
DOE assessment				Date: 02/06/2020
Apropos to the FAR; a notification of change of the CPA has been initiated. FAR-01 is closed.				

FAR ID	02	Section no.	--	Date: 29/05/2020
Description of FAR				
CME to update the PoA-DD to mention the use of option 2 for determining the value of $B_{y, savings}$ for Lao PDR. Also, CME to determine the value of $B_{y=1, new, i, survey}$, based on baseline survey to be conducted at the time of first verification and update the same in CPA-DD before starting first verification for CPA 10030-P1-0003-CP1.				
CME response				Date: 01/06/2020
<i>According to revised and approved PoA DD; version 21, the option for determining value $B_{y, savings}$ has been changed to option 2; the value of which can be declared at the time of verification. This value will remain same throughout the entire crediting period. The survey has been conducted and value has been submitted to the verifying DOE. Also the notification of changes to CPAs as per para 178 of PCP-PoA, version 2.0 has been sent to UNFCCC for approval.</i>				
Documentation provided by the CME				
--				
DOE assessment				Date: 02/06/2020
Apropos to the FAR; the POA DD underwent a revision and got approved; a notification of change of the CPA has been initiated. FAR-02 is closed.				

FAR ID	03	Section no.	--	Date: 29/05/2020
---------------	----	--------------------	----	-------------------------

Description of FAR	
Implementation of the CPA 10030-P1-0002-CP1 cannot be validated by the DOE at the inclusion stage when no project stoves have been distributed. Therefore, verifying DOE shall review the compliance of CPA with the requirements listed in section A.7 of CPA-DD in line with PS for PoA to ensure no displacement of any former PA/PoA/CPA.	
CME response	Date: 01/06/2020
<i>No project stoves have been distributed in CPA 0002; moreover, the CPA is not part of this monitoring period.</i>	
Documentation provided by the CME	
--	
DOE assessment	Date: 02/06/2020
N/A	

Table 2. CLs from this verification

CL ID	01	Section no.	E.3.4.2	Date: 29/05/2020
Description of CL				
VVS-PoA ver. 02 paragraph 349:				
As per section B.5.1 of the CPA DD for the parameter "Ny,i,a", "Spot-check of data collection process would be done during on-going monitoring to ensure accuracy and transparency. "				
The results of such spot checks (including the basis of such checks for e.g. sales records) needs to be provided to the DOE.				
CME response				Date: 01/06/2020
<i>CME as per its stove installation program carries out spot checks in the respective CPAs through its field agent from time to time to ascertain whether the stoves have been installed and whether the data collected from the stove users have been correctly transferred to the database or not. CME now has provided a declaration and evidence of spot checks to the verifying DOE.</i>				
Documentation provided by the CME				
<i>spot check declaration along with sale records</i>				
DOE assessment				Date: 02/06/2020
Verification team is in receipt of <i>spot check report /05-2/ of CME along with sale records/05-3/</i>				
The records of sales database /05-1/ have been verified during the course of verification. The data is further periodically spot checked /05-2/ (through review of electronic database and sample sales receipts) by the CME. Verification team has also checked sample sales receipt /05-3/ and confirms that that the reported values are correct.				
CL-01 is closed.				

CL ID	02	Section no.	E.3.4.2	Date: 29/05/2020
Description of CL				
VVS-PoA ver. 02 paragraph 349:				
For the parameter $B_{y=1,new,i,survey}$, as per the paragraph 17 of AMS II.G., version 06.0, "Sample surveys to estimate this parameter, that are solely based on questionnaires or interviews (i.e. that do not implement measurement campaigns) may only be used if the following conditions are satisfied:				
(a) <i>Pre-project devices have been completely decommissioned and only efficient project devices are exclusively used in the project households;</i>				
(b) <i>If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of woody biomass being used by each device. In other words, if more than one device, or another device that consumes woody biomass, are in use in project households, then the sample survey needs to distinguish the quantity of biomass used by the project device and the other devices that use biomass. "</i>				
Clarification is requested as how the survey was conducted by the CME and its compliance with above				

quoted paragraph of the applied methodology.	
CME response	Date: 01/06/2020
<p>In order to monitor $B_{y=1, \text{new}, i, \text{survey}}$, the CME undertook measurement of biomass used in the project stove for each of the sampled households. The survey was undertaken between 8:00 AM to 6:00 PM thus enabling surveyors to conduct the survey at a time when most of the households would be preparing for major meals. The respondents were asked to make bundles of firewood that they consume during cooking all meals in a day. This bundle was measured. For households where respondents were found using only project stove, this bundle represented the amount of wood used in the project stove in a day. However, for households where a baseline stove was used, the respondents were further asked to separate from the bundle, the wood that they use on project stove. Measuring the second bundle gave the amount of wood that was used on project stove. Moreover, prior to conducting the actual monitoring, the CME had also conducted pilot survey in the months of March and May. The result of this survey also showed similar trend in use of woody biomass in project stoves. Since the pilot survey was conducted in other season (dry whereas actual survey was in wet) and showed similar consumption figures, no significant seasonal variation was observed in the use of woody biomass. Hence the CME believes that the monitoring of said parameter has been done in compliance with the applied methodology as the sample survey included measurement of the quantity of fuelwood used in the project stove. Moreover, multiple devices are not being used in the project activity and each household owns a single ICS which has been confirmed by the DOE through registration database.</p>	
Documentation provided by the CME	
<i>Revised MR</i>	
DOE assessment	Date: 02/06/2020
<p>Based on justification above, verification team confirms that the CME undertook measurement of biomass used in the project stove for each of the sampled households. In the opinion of verification team, the measurement of the biomass during the survey is inline with the requirement of the paragraph 17 of AMS II.G., version 06.0. Furthermore, the same was also verified during the acceptance sampling of the DOE (refer section D.4 of this report). CL is closed.</p>	

CL ID	03	Section no.	I & R Check comment by UNFCCC	Date: 29/07/2020
Description of CL				
<p>The fNRB of Lao and Cambodia was determined as 0.88 and 0.97 respectively in the PoA-DD. It is noted that the PoA-DD has further referred to EB 67 Annex 22, in which the fNRB of Lao and Cambodia was 0.87 and 0.76 respectively by default. The DOE is requested to provide information:</p> <p>(a) on correctness of ex-ante determined fNRB in the PoA-DD;</p> <p>(b) why a post-registration-change to correct the fNRB value in the PoA-DD was not submitted.</p>				
CME response				Date: 30/07/2020
<p>(a) At the start the CME wishes to apologise for the confusion surrounding the fNRB values of Lao PDR and Cambodia as stated in PoA DD. It was never intended on part of CME to consider the default values stated in EB 67 Annex 22 for the above-mentioned countries as the FAO data that was used for arriving at the default values in this document was from 2010 report whereas more recent data FAO 2015, was available at the time of inclusion of these host countries in the PoA (PRC- 10030-001, approved on 26/07/2019).</p> <p>The reference of EB 67, Annex 22 is simply to denote that the CME used this document (EB 67, Annex 22) as the guiding document to calculate the fNRB value of Lao PDR using same steps of calculation as well as using same reference documents as used in calculations of Annex 22; albeit the most recent version of the documents that was available at the time of inclusion were used.</p> <p>For fNRB calculation of Cambodia, CME contracted a third party, C4EcoSolutions to prepare the report which was prepared using version 01 of Tool 30 and the same was shared at the time of PRC validation.</p> <p>Details of both the fNRB calculations for Lao PDR and Cambodia were submitted and validated by the DOE at the time of Validation of PRC and the same was also considered and accepted by EB at the time of PRC approval. The CME is hereby submitting the documents again for the consideration of the Board and once again reiterates that reference of EB 67, annex 22 is only for it's use as a guiding document and it was never the intention of CME to use default values mentioned in it.</p> <p>(b) Through PRC-10030-001 (approved 26/07/2019), the geographic boundary of PoA was extended to include host countries- Lao PDR and Cambodia. Accordingly, all parameters that were to be determined ex-ante including fNRB values for these two countries were included in the revised and approved PoA-DD (version 18). The supporting documents as well as calculations for same were</p>				

submitted to validating DOE and were verified by it (evident from Appendix 3 and CAR ID 03-Validation report³ for PRC; version no 04, dated 21/06/2019). This report too, mentions that fNRB for Lao PDR has been calculated using FAO 2015 data and for Cambodia the value has been sourced from third party report.

Documentation provided by the CME

Documents related to fNRB calculation for Lao PDR and Cambodia.

DOE assessment

Date: 31/07/2020

As clarified by the CME, the fNRB of Lao PDR and Cambodia was calculated and not as per the default of EB 67 Annex 22. CCIPL's verification team has checked the PRC-10030-001: <https://cdm.unfccc.int/PRCContainer/DB/prcp541738782/view> and found that indeed the fNRB of Lao and Cambodia was validated by the DOE as a part of PRC (to add Lao and Cambodia) and was approved by the Board during the PRC approval.

Verification Team is in receipt of fNRB calculation spread sheet (prepared by the CME) /21/ of Lao PDR and C4EcoSolutions's (Third party contracted by the CME) report as well fNRB calculation spread sheet (prepared by the C4EcoSolutions) /22/. Based on review of the provided documents /21/,/22/; verification team confirms the correctness of the ex-ante value determined fNRB in the PoA-DD including the method of calculation and the data source used. Thus, in the opinion of verification team, a post-registration-change to correct the fNRB value in the PoA-DD is not required and for the same reason it wasn't submitted.

However, as pointed by CDM Team, the source document of fNRB in the PoA DD is creating confusion to the readers and for the same reason it should be made transparent through a correction of the PoA DD. FAR-01 has been raised in this context.

CL-03 is closed.

Table 3. CARs from this verification

CAR ID	01	Section no.	E.1.1	Date: 29/05/2020
Description of CAR				
VVS-PoA ver. 02 paragraph 339:				
Section C.1 of the MR should provide the number cook stove implemented under the project with relevant dates of implementation for each CPA.				
CME response				Date: 01/06/2020
Details have been included in section B.1				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 02/06/2020
The required correction has been made in the revised MR; checked and confirmed by the verification team. CAR-01 is closed.				

CAR ID	02	Section no.	E.3.3	Date: 29/05/2020
Description of CAR				
VVS-PoA ver. 02 paragraph 343:				
CME has opted 95/10 confidence precision for the sampling/survey, which is in accordance with the §23 of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0 /B07/. However, the registered monitoring plan as per the PoA DD is not in accordance with requirement stated above .				
CME response				Date: 02/06/2020
According to the applied methodology, a 90/10 sampling approach is required for annual sampling. No further direction has been provided for sampling of CPAs consisting of microscale CDM units. Same has been mentioned in the PoA DD. Guidance on sampling of such CPAs, however, can be found under paragraph 22 of Standard for sampling and surveys version 05.0. According to it CPAs consisting solely of				

³

https://cdm.unfccc.int/filestorage/K/4/R/K4RG1U2EWB3PTJC69NDZQSV5A7I8HL/Revised%20PRC%20Validation%20Report-ver%2004.pdf?t=dTJ8cWVhNmxfDB5PhSZlo5wUF_e-xJ4oFiG

microscale CDM units shall apply 95/10 confidence precision. The CME has followed the standard for sampling and surveys and applied 95/10 confidence precision. Moreover, the surveyed sample meet the confidence precision requirements of both PoA DD (90/10) and Standard for sampling and surveys version 05.0 (95/10).

10030-P1-0003-CP1

Proportion Parameters			Mean Parameter		
Parameters	$N_{y,i,a}$	$\mu_{y,i}$	$\eta_{new,i,a}$	$\eta_{new,i,a=1}$	$B_{y=1,new,i,survey}$
Relative Precision achieved-95/10	0%	0%	1.28%	0.6%	8.76%
Relative Precision achieved-90/10	0%	0%	1.0%	0.5%	7.5%

10030-P1-0004-CP1

Proportion Parameters			Mean Parameter		
Parameters	$N_{y,i,a}$	$\mu_{y,i}$	$\eta_{new,i,a}$	$\eta_{new,i,a=1}$	$B_{y=1,new,i,survey}$
Relative Precision achieved-95/10	0%	0%	1.97%	0.8%	7.97%
Relative Precision achieved-90/10	0%	0%	1.6%	0.7%	7.7%

Documentation provided by the CME

Revised MR

DOE assessment

Date: 02/06/2020

Based on the above response by the CME and in view of the fact that actual confidence/precision used for the sampling/survey is 95/10, which is in accordance with the §23 of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0 /B07/; CAR-02 is closed. FAR-01 has been raised.

CAR ID	03	Section no.	E.3.4.2	Date:	29/05/2020
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Description of CAR

VVS-PoA ver. 02 paragraph 346:

Not all monitoring parameters as required by the CPA DD has been provided in section E.2 of the monitoring report (for e.g. parameter “ $\mu_{y,i}$ —Number of days of utilization of the cook stove device of type i during the year y ”).

CME response

Date: 01/06/2020

Monitoring details of this parameter are thus-

The number of days of stove utilization was monitored in accordance with paragraph 22 of the applied methodology, AMS II.G; version 06 according to which-

“Alternatively, surveys may be conducted if the use of data loggers to record the continued operation of baseline devices is not practical, for example when the baseline device is the three stone fire. The surveys should be better designed to capture cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidences to determine the frequency of usage of both the project devices and baseline devices.”

Along with this the CME also referred to clarification SSC_713 as well as AMS II.G version 07 for more clarity on the monitoring requirement of this parameter. According to both these documents, the value of “ $\mu_{y,i}$ ” shall be 1 that is (365/365 in equation 2), if the project does not face logistic or availability of fuelwood constraint (SSC_713), moreover as stated in clarification SSC_713, in Version 07 of the applied methodology, this parameter could be considered as 1 for projects that directly measure the biomass consumed in project stoves

As the baseline devices that were replaced by the project device, were either three stone fire or iron-tri-pod, hence the use of data loggers was not practical. The CME undertook survey where the respondents were questioned about their daily cooking habits including average number of meals prepared in a day and out of

these number prepared on baseline device. Further questions like whether the respondents were using the project stove on a regular basis that is every day or not and number of days when baseline stoves are used exclusively for preparing meals helped the CME determine this parameter. Hence in line with the results of the survey and the guidance from the documents mentioned above, the value of “ μy_i ” was determined to be 1 for CPA 10030-P1-0003-CP1 and 1 for CPA 10030-P1-0004-CP1.

Moreover, as equation 6 has been applied for determining $B_{y,savings,i}$, a hence the biomass consumption of project devices are directly measured. The emission reduction calculation is based solely on consumption of fuel wood in project devices as a result the continued use of baseline devices do not have any effect on the emission reduction. This is further confirmed in the recent versions of the applied methodology where computation of this parameter is not required in case of direct measurement of biomass fuel use in project devices.

Documentation provided by the CME

Revised MR

DOE assessment

Date: 02/06/2020

The required correction has been made in the revised MR to include all the parameters; checked and confirmed by the verification team. The reported data in MR has been compared with the ER sheet /04/ and survey sheet /16/, based on this review it is being confirmed that the data transfer from the raw survey records /16/ to ER sheet /04/ and MR /02/ is correct. The survey /16/ was designed to capture cooking habits and stove usage of households by formulating questions to determine the frequency of usage of both the project devices and baseline devices. The average use of project device for cooking in households in a week was used to estimate the number of days of utilization of project stove. The approach is inline with the requirements of the applied methodology /B02/. Based on the response above, revision in the MR and review of clarification SSC_713 and the fact as equation 6 of the applied methodology has been applied for determining $B_{y,savings,i}$, a hence the fuel wood consumption of project devices are directly measured and thus a value of 1 for the parameter “ μy_i ” is justified; CAR-03 is closed.

CAR ID	04	Section no.	E.3.4.3	Date: 29/05/2020
Description of CAR				
VVS-PoA ver. 02 paragraph 348:				
<i>In section E.3 of the monitoring report, information of all the parameters subject to sampling/survey is required to be provided. Furthermore, it is also required that CME shall provide the initial sample size calculation along with the precision achieved for each of the parameter.</i>				
CME response				Date: 01/06/2020
<i>These details have been added to Section E.3</i>				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 02/06/2020
The required correction has been made in the revised MR; checked and confirmed by the verification team. CAR-04 is closed.				

CAR ID	05	Section no.	E.3.5	Date: 29/05/2020
Description of CAR				
VVS-PoA ver. 02 paragraph 355 & 356:				
<i>The DOE has verified the evidence of the calibration of the equipment used for the WBT based on calibration records submitted by the CME. However, no information is provided in the monitoring report section D.2 about the calibration and also to confirm if the procedure is in accordance with the specifications of the local/national standards, or as per the manufacturer's specification or the international standards.</i>				
CME response				Date: 01/06/2020
<i>Information on calibration requirements and procedure followed has been included in the relevant section of the MR</i>				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 02/06/2020
The required correction has been made in the revised MR; checked and confirmed by the verification team. CAR-05 is closed.				

CAR ID	06	Section no.	E.3.6	Date: 29/05/2020
Description of CAR				

Following inconsistencies have been found during the review of MR:	
<ul style="list-style-type: none"> • POA DD version 18 has been quoted and referred in MR. • Host parties are inconsistent with the project page. • The amount ER reduction is inconsistent with the ER calculation spread sheet. • Values of the parameter (for e.g. $\eta_{new,i,a=1}$) is inconsistent with the survey records 	
CME response	Date: 01/06/2020
The MR has been made consistent with the ER sheet and survey records and corrections have been made.	
Documentation provided by the CME	
Revised MR and calculation spread sheets	
DOE assessment	Date: 02/06/2020
The required correction has been made in the revised MR; checked and confirmed by the verification team. CAR-06 is closed.	

Table 4. FARs from this verification

FAR ID	01	Section No.	E.3.3	Date: 05/06/2020
Description of FAR				
The PoA DD and CPA DDs shall undergo a PRC in order to comply with §23 of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0 /B07/ <u>and also to transparently provide the source document of fNRB for Lao PDR and Cambodia in the PoA DD</u> .				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY

Annex 1: Data and parameters fixed ex ante

Parameter	Efficiency of the system being replaced (η_{old})
Data unit:	Fraction
Default values used:	10 %
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Net calorific value of the non-renewable woody biomass that is substituted ($NCV_{biomass}$)
Data unit:	TJ/tonne
Default values used:	0.015
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Emission factor for the fossil fuels projected to be used for substitution of non renewable woody biomass by similar consumers ($EF_{projected_fossil\ fuel}$)
Data unit:	tCO ₂ /TJ
Default values used:	81.6
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass ($f_{NRB,y}$)
Data unit:	Fraction
Default values used:	Lao PDR: 0.88 Cambodia: 0.97
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante in the PoA DD approved by UNFCCC /B04/. <u>Please also refer to the closure of CL-03.</u>

Parameter	Net to gross adjustment factor to account for leakage (L_y)
Data unit:	Fraction
Default values used:	0.95
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Annex 2: Data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the DOE						
Data / Parameter: (as in monitoring plan of CPA-DD):	Number of project devices of type i and age a operating in year y ($N_{y,i,a}$)						
Measuring frequency/Time Interval:	Annual						
Reporting frequency:	Annual						
Reported value:	<table border="1"> <thead> <tr> <th>CPA</th><th></th></tr> </thead> <tbody> <tr> <td>10030- 0003-</td><td>851</td></tr> <tr> <td>10030- 0004-</td><td>195</td></tr> </tbody> </table>	CPA		10030- 0003-	851	10030- 0004-	195
CPA							
10030- 0003-	851						
10030- 0004-	195						
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes						
Details of monitoring equipment:	Sales database						
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	An electronic sales database has been maintained for the project activity /05/.						
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA						
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.						
Company performing the calibration(internal or external calibration):	NA						
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA						
Is (are) calibration(s) valid for the whole reporting period?	NA						
If applicable, has the reported data been cross-checked with other available data?	The records of sales database /05-1/ have been verified during the course of verification. The data is further periodically spot checked /05-2/ (through review of electronic database and sample sales receipts) by the CME. Verification team has also checked sample sales receipt /05-3/ and confirms that that the reported valuers are correct. Please also refer to the assessment in section D.4 and annex 3 of this report for the details on the acceptance sampling and assessment of the sampling. Please also refer to the closure of CL-01.						
How were the values in the monitoring report verified?	NA						
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.						
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA						

Monitoring Parameter Requirement	Assessment/ Observation by the DOE				
Data / Parameter: (as in monitoring plan of CPA-DD):	Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation (a=1) ($\eta_{new,i,a=1}$)				
Measuring frequency/Time Interval:	Once at the time of stove installation				
Reporting frequency:	--				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>38.50 %</td><td>38.51 %</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	38.50 %	38.51 %
10030-P1-0003-CP1	10030-P1-0004-CP1				
38.50 %	38.51 %				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	Value obtained from monitoring survey sample WBTs /10/				
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA				
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA				
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.				
Company performing the calibration(internal or external calibration):	NA				
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA				
Is (are) calibration(s) valid for the whole reporting period?	NA				
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with ER sheet /04/ and found correct. Furthermore, the ER sheet has been cross checked with the WBT spread sheet /10-3/ and hard copy of WBT raw records /10-2/ for each sample and based on this review it is being confirmed that the data transfer from the raw sheet /10-2/ to WBT sheet /10-3/ and eventually to ER sheet /04/ and MR /02/ is correct. Please also refer to the assessment in section D.4 and annex 3 of this report for the details on the acceptance sampling and assessment of the sampling.				
How were the values in the monitoring report verified?	NA				
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.				
In case only partial data are available because activity levels or non-activity parameters have not been monitored in	NA				

accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE				
Data / Parameter: (as in monitoring plan of CPA-DD):	Thermal efficiency of the device of type i being deployed as part of the project activity with age 'a' ($\eta_{new,i,a}$)				
Measuring frequency/Time Interval:	annual				
Reporting frequency:	annual				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>38.46 %</td><td>38.48 %</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	38.46 %	38.48 %
10030-P1-0003-CP1	10030-P1-0004-CP1				
38.46 %	38.48 %				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	Value obtained from sample WBTs /10/				
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA				
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA				
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.				
Company performing the calibration(internal or external calibration):	NA				
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA				
Is (are) calibration(s) valid for the whole reporting period?	NA				
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with ER sheet /04/ and found correct. Furthermore, the ER sheet has been cross checked with the WBT spread sheet /10-3/ and hard copy of WBT raw records /10-2/ for each sample and based on this review it is being confirmed that the data transfer from the raw sheet /10-2/ to WBT sheet /10-3/ and eventually to ER sheet /04/ and MR /02/ is correct. Please also refer to the assessment in section D.4 and annex 3 of this report for the details on the acceptance sampling and assessment of the sampling.				
How were the values in the monitoring report verified?	NA				
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.				
In case only partial data are available	NA				

because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE				
Data / Parameter: (as in monitoring plan of CPA-DD):	Factor to consider the efficiency loss of the project device type i due to its aging at the year y ($\Delta\eta_{y,i,a}$)				
Measuring frequency/Time Interval:	annual				
Reporting frequency:	annual				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>0.9989</td><td>0.9992</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	0.9989	0.9992
10030-P1-0003-CP1	10030-P1-0004-CP1				
0.9989	0.9992				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	NA				
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA				
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA				
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.				
Company performing the calibration(internal or external calibration):	NA				
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA				
Is (are) calibration(s) valid for the whole reporting period?	NA				
If applicable, has the reported data been cross-checked with other available data?	It is a calculated parameter. Yes, the reported data in MR has been compared with the ER sheet /4/.				
How were the values in the monitoring report verified?	NA				
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.				
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA				

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Annual quantity of woody biomass used during the project activity in tonnes per device of type i ($B_{y=1,new,i,survey}$)

Measuring frequency/Time Interval:	Once, during first year of project implementation.				
Reporting frequency:	Once, during first year of project implementation.				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>1.163</td><td>1.144</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	1.163	1.144
10030-P1-0003-CP1	10030-P1-0004-CP1				
1.163	1.144				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	Value obtained from monitoring survey of samples /13/				
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA				
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA				
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.				
Company performing the calibration(internal or external calibration):	NA				
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA				
Is (are) calibration(s) valid for the whole reporting period?	NA				
If applicable, has the reported data been cross-checked with other available data?	<p>Yes, the reported data in MR has been compared with monitoring survey records /13/ and the ER sheet /04/, based on this review it is being confirmed that the data transfer from the raw survey records /13/ to ER sheet /04/ and MR /02/ is correct. Please also refer to the assessment in section D.4 and annex 3 of this report for the details on the acceptance sampling and assessment of the sampling.</p> <p>Please also refer to the closure of CL-02.</p>				
How were the values in the monitoring report verified?	NA				
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.				
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA				

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Quantity of woody biomass that is saved in tonnes per cook stove device of type I and age a in year y ($B_{y, savings,i,a}$)
Measuring frequency/Time Interval:	Calculated Annual

Reporting frequency:	annual				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>3.1</td><td>3</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	3.1	3
10030-P1-0003-CP1	10030-P1-0004-CP1				
3.1	3				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	NA				
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA				
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA				
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.				
Company performing the calibration(internal or external calibration):	NA				
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA				
Is (are) calibration(s) valid for the whole reporting period?	NA				
If applicable, has the reported data been cross-checked with other available data?	It is a calculated parameter. Yes, the reported data in MR has been compared with the ER sheet /4/.				
How were the values in the monitoring report verified?	NA				
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.				
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA				

Monitoring Parameter Requirement	Assessment/ Observation by the DOE				
Data / Parameter: (as in monitoring plan of CPA-DD):	Number of days of utilization of the cook stove device of type i during the year y ($\mu_{y,i}$)				
Measuring frequency/Time Interval:	Calculated Annual				
Reporting frequency:	annual				
Reported value:	<table border="1"> <tr> <td>10030-P1-0003-CP1</td><td>10030-P1-0004-CP1</td></tr> <tr> <td>1</td><td>1</td></tr> </table>	10030-P1-0003-CP1	10030-P1-0004-CP1	1	1
10030-P1-0003-CP1	10030-P1-0004-CP1				
1	1				
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes				
Details of monitoring equipment:	NA				

Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DDs.
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	<p>Yes, the reported data in MR has been compared with the ER sheet /4/ and survey sheet /16/, based on this review it is being confirmed that the data transfer from the raw survey records /16/ to ER sheet /04/ and MR /02/ is correct.</p> <p>The survey /16/ was designed to capture cooking habits and stove usage of households by formulating questions to determine the frequency of usage of both the project devices and baseline devices. The average use of project device for cooking in households in a week was used to estimate the number of days of utilization of project stove. The approach is inline with the requirements of the applied methodology /B02/. Please also refer to the assessment in section D.4 and annex 3 of this report for the details on the acceptance sampling and assessment of the sampling.</p> <p>Please also refer to the closure of CAR-03.</p>
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Annex 3: Assessment of Monitoring parameters monitored through sampling/surveys

Sl. No.	Checklist Questions	Assessment															
1.	Does the Monitoring Report apply sampling for determination of ex-post monitoring parameters?	Yes, there are ex-post monitoring parameters determined through the sampling effort.															
2.	Is the applied sampling plan in accordance with the sampling plan proposed in the registered PoA-DD/ PDD?	Yes, the applied sampling plan is in accordance with the sampling plan proposed in the revised and approved PoA-DD /B04/ and CPA-DDs /B04/.															
3.	<p>List the parameters determined through sampling and respective parameters of interest.</p> <p>In situations where the monitoring of a parameter is based on data, which is being recorded only once at the time of implementation/distribution particularly for distribution projects, where there are large/dispersed number of project technology, the VV team shall assess the accuracy of such data/information during the onsite verification through document review and where applicable through acceptance sampling.</p> <p>The assessment of implementation status of distribution projects or projects having dispersed and large number of components, it is pertinent that the VV Team shall assess that all physical features (technology, project equipment, and monitoring and metering equipment) of the included CPAs/projects are as specified in the included CPA-DDs/PDD. In cases where the households/users are no longer using the project technology or have voluntarily left the project, it is important for VT to assess CME/PP's QA/QC procedures with regards to handling of its database and where applicable consider those dropped out from technology</p>	<p>Parameters determined through sampling and respective parameters of interest are:</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Description of Parameter</th><th>Parameter of Interest</th></tr> </thead> <tbody> <tr> <td>$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$</td><td>Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation ($a=1$) and Thermal efficiency of the device of type i being deployed as part of the project activity with age 'a'</td><td>Mean</td></tr> <tr> <td>$B_{y=1,new,i,survey}$</td><td>Annual quantity of woody biomass used during the project activity in tonnes per device of type i</td><td>Mean</td></tr> <tr> <td>$N_{y,i,a}$</td><td>Number of project devices of type i and age a that are operating in year y.</td><td>Proportion</td></tr> <tr> <td>$\mu_{y,i}$</td><td>Number of days of utilization of the cook stove device of type i during the year y</td><td>Proportion</td></tr> </tbody> </table> <p>The parameter "$B_{y=1,new,i,survey}$" is monitored once during first year of project implementation. The assessment of the parameter has been done by document review as well as acceptance sampling, please refer the assessment later in this section as well in section D.4 of this report.</p> <p>The assessment of the implementation of the CPAs has been provided in section E.3.1 of this report. Furthermore, no dropped out from technology has been found during assessment of the project implementation by reviewing the CPA Database and monitoring survey records.</p>	Parameter	Description of Parameter	Parameter of Interest	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation ($a=1$) and Thermal efficiency of the device of type i being deployed as part of the project activity with age ' a '	Mean	$B_{y=1,new,i,survey}$	Annual quantity of woody biomass used during the project activity in tonnes per device of type i	Mean	$N_{y,i,a}$	Number of project devices of type i and age a that are operating in year y .	Proportion	$\mu_{y,i}$	Number of days of utilization of the cook stove device of type i during the year y	Proportion
Parameter	Description of Parameter	Parameter of Interest															
$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	Thermal efficiency of the device of type i being deployed as part of the project activity in the year of its installation ($a=1$) and Thermal efficiency of the device of type i being deployed as part of the project activity with age ' a '	Mean															
$B_{y=1,new,i,survey}$	Annual quantity of woody biomass used during the project activity in tonnes per device of type i	Mean															
$N_{y,i,a}$	Number of project devices of type i and age a that are operating in year y .	Proportion															
$\mu_{y,i}$	Number of days of utilization of the cook stove device of type i during the year y	Proportion															

	as a part of assessment of sampling requirements, including acceptance sampling by DOE.																															
4.	Is the sample size calculated in accordance with the formula presented in the registered PoA-DD/PDD?	Yes, the sample size calculated is in accordance with the formula presented in the revised and approved PoA-DD/revised CPA-DDs /B04/.																														
5.	Are the assumptions used for calculation of sample size appropriate and correct? P.S.: Provide assessment on appropriateness of value of proportion (p), standard deviation (STDEV) or variance (v) used for calculation of sample size.	<p>Yes, the assumptions used for calculation of sample size for parameters are appropriate and correct.</p> <p>The CPAs solely composed of “microscale CDM units” and thus a 95/10 confidence/precision has been applied for sampling surveys, this is in accordance with the paragraph 23 of Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0. The standard deviation used for the sample size calculation is based on a pilot study done /18/ done by the CME before the monitoring surveys.</p> <p>The actual surveyed ICS were equal or more than the required number. As these were based on sampling approach, the reliability of precision was checked and found within the prescribed limit (<10%). The same is deemed appropriate by Verification Team and in accordance with the revised and approved PoA-DD/revised CPA-DDs /B04/.</p>																														
6.	<p>What are the sample sizes obtained for the parameters being monitored? Is the determined sample size deemed adequate for the parameter of interest being monitored?</p> <p>P.S.: If the sample size calculation returns a value of less than 30 samples, a minimum sample size of 30 shall be chosen when the parameter of interest is a proportion. If the parameter of interest is a numeric mean value (i.e. not a proportion or percentage) the Student's t-distribution shall be used if the resulting sample size is less than 30.</p> <p>While assessing the sampling effort by the PP/CME particularly the sample size, the VV Team shall make sure that the reliability criteria (confidence level and precision) should be as per the requirement of the applied methodology. Only when there is no specific guidance in the applied methodology for the sampling requirements, the confidence/precision as stated in the sampling</p>	<p>Since the CPAs solely composed of “microscale CDM units” and thus a 95/10 confidence/precision is applicable for sampling surveys, this is in accordance with the paragraph 23 of Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0. This requirement shall take precedence over the requirements of the applied methodology for required confidence/precision for sample size determination.</p> <p>It was found that for all the parameters, the respective confidence/precision was met. The number of samples for each of the parameters covered during the monitoring activity is as given below: <u>CPA 003:</u></p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$</td><td>7</td><td>7</td></tr> <tr> <td>$B_{y=1,new,i,survey}$</td><td>41</td><td>50</td></tr> <tr> <td>$N_{y,i,a}$</td><td>50</td><td>50</td></tr> <tr> <td>$\mu_{y,i}$</td><td>4</td><td>50</td></tr> </tbody> </table> <p><u>CPA 004:</u></p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$</td><td>7</td><td>7</td></tr> <tr> <td>$B_{y=1,new,i,survey}$</td><td>35</td><td>48</td></tr> <tr> <td>$N_{y,i,a}$</td><td>42</td><td>48</td></tr> <tr> <td>$\mu_{y,i}$</td><td>4</td><td>48</td></tr> </tbody> </table> <p>As the actual sample size in all the cases was not less than the initially calculated sample size, the sample size covered by the CME was accepted.</p> <p>As these were based on sampling approach, the reliability of precision was checked and found within the prescribed limit (<10%). The same</p>	Parameter	Sample Size (n) required	Samples covered during monitoring	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	7	7	$B_{y=1,new,i,survey}$	41	50	$N_{y,i,a}$	50	50	$\mu_{y,i}$	4	50	Parameter	Sample Size (n) required	Samples covered during monitoring	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	7	7	$B_{y=1,new,i,survey}$	35	48	$N_{y,i,a}$	42	48	$\mu_{y,i}$	4	48
Parameter	Sample Size (n) required	Samples covered during monitoring																														
$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	7	7																														
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$\mu_{y,i}$	4	48																														

	standards should be considered. As a rule of thumb it is to be always kept in mind that the sampling requirements in the applied methodology shall take precedence.	is deemed appropriate by Verification Team and in accordance with the revised and approved PoA-DD/revised CPA-DDs /B04/. FAR-01 has been raised. Please refer to Appendix 4 for further details.															
7.	Has reliability specification been applied to determine the sampling requirements for each individual parameter value determined through a sampling effort? P.S.: If there is more than one parameter to be estimated in a CDM project activity, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen for the sampling effort with one common survey, or the sampling effort and survey is repeated for each of the parameters. A random sub-sample within the common survey is allowed as long as: (i) the reliability specification (e.g. 90/10 confidence/precision for small-scale CDM project activities and 95/10 for large scale CDM project activities) is achieved for each individual parameter; and (ii) the random sub-sample is consistent with the design of the survey and the corresponding sample size calculation.	The CPAs solely composed of “microscale CDM units” and thus a 95/10 confidence/precision has been applied for sampling surveys, this is in accordance with the paragraph 23 of Standard: Sampling and surveys for CDM project activities and programmes of activities Version 08.0. Please also refer to CAR-02. It was found that for all the parameters, the confidence/precision was met. The number of samples for each of the parameters covered during the monitoring activity is provided in the above row.															
8.	Is the assumed response rate reasonable (appropriate and correct) for the determination of samples to be surveyed?	Yes, the assumed response rate is reasonable (appropriate and correct) for the determination of samples to be surveyed for each of the parameter of interest.															
9.	Is the sample selected by PP for determination of the monitored parameters unbiased (random) and representative?	Yes, the verification team, based on evidence for random number generator /08/ as provided by the CME, confirms that sample selected by the CME for determination of the monitored parameters are random. It can be considered as representative of the population.															
10.	Has minimum target level of precision been achieved based on estimates from the actual samples?	Yes, the minimum target level of precision been achieved based on estimates from the actual samples. CPA 003: <table border="1"> <thead> <tr> <th>Parameter</th><th>Target level</th><th>Precision achieved</th></tr> </thead> <tbody> <tr> <td>$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$</td><td>10%</td><td>0.6% and 1.28%</td></tr> <tr> <td>$B_{y=1,new,i,survey}$</td><td>10%</td><td>8.76%</td></tr> <tr> <td>$N_{y,i,a}$</td><td>10%</td><td>0%</td></tr> <tr> <td>$\mu_{y,i}$</td><td>10%</td><td>0%</td></tr> </tbody> </table>	Parameter	Target level	Precision achieved	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$	10%	0.6% and 1.28%	$B_{y=1,new,i,survey}$	10%	8.76%	$N_{y,i,a}$	10%	0%	$\mu_{y,i}$	10%	0%
Parameter	Target level	Precision achieved															
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		<p>CPA 004:</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Target level</th><th>precision</th><th>Precision achieved</th></tr> </thead> <tbody> <tr> <td>$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$</td><td></td><td>10%</td><td>0.8 % and 1.97 %</td></tr> <tr> <td>$B_{y=1,new,i,survey}$</td><td></td><td>10%</td><td>7.97%</td></tr> <tr> <td>$N_{y,i,a}$</td><td></td><td>10%</td><td>0%</td></tr> <tr> <td>$\mu_{y,i}$</td><td></td><td>10%</td><td>0</td></tr> </tbody> </table> <p>This has been checked and confirmed by reviewing Survey database /12/, /13/,/14/,/15/ and /16/ and WBT results /10/ provided by the CME.</p>	Parameter	Target level	precision	Precision achieved	$\eta_{new,i,a=1}$ and $\eta_{new,i,a}$		10%	0.8 % and 1.97 %	$B_{y=1,new,i,survey}$		10%	7.97%	$N_{y,i,a}$		10%	0%	$\mu_{y,i}$		10%	0
Parameter	Target level	precision	Precision achieved																			
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$N_{y,i,a}$		10%	0%																			
$\mu_{y,i}$		10%	0																			
11.	In case the minimum target level of precision has not been achieved based on estimates from the actual samples, please specify the approach adopted by PP to reach the required precision and also justify the appropriateness of the adopted approach in accordance with the applied methodology or paragraph 17 of Sampling and surveys for CDM project activities and programmes of activities (Version 07.0).	Not applicable since as assessed above the target level of precision has been achieved.																				
12.	<p>Has Verification Team applied acceptance sampling to verify that the results of sampling efforts undertaken by PP for determination of ex-post parameters. If yes, please provide a detailed justification of the approach adopted including information on (but not limited to):</p> <ul style="list-style-type: none"> (a) Selected AQL Level (b) Selected UQL Level (c) Selected Consumer Risk Level (d) Selected Producer Risk Level (e) Sample Size chosen for acceptance sampling (f) Acceptance number (c) <p>Approach adopted by Verification Team to in case value of greater than c discrepant records were observed in the sample</p>	In line with §26 of the Sampling Standard /B07/, the verification team has applied a sampling approach for remote interviews surveys as part of verification. Please refer to the assessment under section D.4 of this report.																				
13.	Are the procedures for the selected survey and data collection method unambiguously defined and do they adequately provide	Verification team based on remote interviews and review of documented procedure confirms that the selected survey and data collection method is unambiguously defined. This also adequately ensure minimizing non-sampling errors.																				

	for minimizing non-sampling errors?	
14.	Have potential sources of bias inherent in the selected data collection method, such as self-selection and under-coverage, been anticipated? Have mechanisms for mitigating these been considered?	Review of sampling records, documented procedure and remote interviews with the Personnel conducted WBT/Surveys does not any reveal sources of bias inherent in the selected data collection.
15.	Is the quality control and assurance strategy adequate?	Verification team based on review of provided supporting documents and remote interviews confirms that the quality control and assurance strategy is adequate.
16.	Are the proposed skill sets, qualifications and experience of the personnel/institutions engaged to conduct the standardized tests/data collection exercise adequate?	<p>For thermal efficiency of the stoves WBT were conducted. As the monitoring parameter under consideration is determined by standardized test procedures, the QA/QC and calibrations are at the test conduction by the measuring team.</p> <p>Accordingly, the verification team has focused on abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the WBT.</p> <p>Through the interview of personnel responsible for carrying out WBT and witnessing the WBT test through remote interviews (through video call) it was ascertained that the personnel are competent to carry out the standardized tests and follow the instructions and requirements of WBT protocol /10-1/ for carrying out such tests. Furthermore, the Verification Team also reviewed the training certificates of the personnel and ascertained that they are trained before undertaking the WBT to refresh their skills. The same is found acceptable by Verification Team.</p> <p>The monitoring equipment used for conducting the stove efficiency tests are weighing scale, digital thermometer and moisture meter. Calibration certificates of all these equipment /10-5,6/ were checked by the verification team.</p>
17.	<p>Does the PP have a process in place to ensure data quality is maintained to a high standard? This should include:</p> <ol style="list-style-type: none"> Are the personnel trained and experienced? What is the level of supervision and guidance provided to staff? Is there a standardized system for data entry and analysis to produce final result? Is there a system or process in place to minimize the introduction of errors? Is there a system in place to ensure all collected data is processed; Are quality checks performed on data 	<p>Verification team based on document review /10/ and interview of personnel responsible for carrying out WBT and witnessing the WBT test through remote interviews (through video call) confirms the following:</p> <ul style="list-style-type: none"> ✓ the personnel involved in the WBT/surveys are trained and experienced. ✓ there exists a standardized system for data entry and analysis to produce final result. ✓ there exist a system or process in place to minimize the introduction of errors. ✓ there a system in place to ensure all collected data is processed. ✓ there exists a quality checks of data entered.

	<p>entered, for example range checks,</p> <p>g) inconsistency checks, checking of subsamples of data by supervisors;</p> <p>h) is there a system to check for errors, record and report errors reported and document the remedial action taken;</p> <p>i) What is the level of security and type of backup processes to guarantee data integrity, for example methods to prevent fraud and accidental deletion?</p>	
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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
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		