




**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)	Domestic Cooking Stoves substitution programme in Mozambique (9981)	
Version number(s) of the PoA-DD(s) to which this report applies	Version 09, 22/09/2020	
Version number of the verification and certification report	3.0	
Completion date of the verification and certification report	01/05/2021	
Monitoring period number and duration of this monitoring period	4th Monitoring Period 01/01/2018 to 31/12/2018	
Number and version number of the monitoring report to which this report applies	Batch 1 of 2 Version 06, Dated 12/04/2021	
Coordinating/managing entity (CME)	Fondazione AVSI	
Host Parties	Host Parties of the PoA	Is this a host Party to a CPA covered in this report?(yes/no)
	Mozambique	Yes
Applied methodologies and standardized baselines	AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass. Version 05.0	
Mandatory sectoral scopes	Sectoral Scope 03: Energy Demand	
Conditional sectoral scopes, if applicable	NA	
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	25,717 tCO ₂ e	
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report	42,170 tCO ₂ e	
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032	
Name, position and signature of the approver of the verification and certification report	Ms. Carla Debat Molleví <i>Applus+ Certification CDM Product Manager</i>	

	<p>Signature: </p>
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SECTION A. Executive summary

LGA Technological Center, S.A. accredited DOE E-0032 (hereinafter referred to as *Applus+ Certification* or just the *DOE*) has been contracted by PoA's CME *Fondazione AVSI* to undertake the independent verification of the registered CDM PoA titled "*Domestic Cooking Stoves substitution programme in Mozambique*" (PoA ID: 9981) covering CPA 002 titled "*Domestic cookstoves in Maputo (Mozambique), phase II*". The objectives of this verification are to verify and certify emission reductions reported for the specific Component Project Activity (CPA) for the monitoring period from 01/01/2018 to 31/12/2018 (first and last day included); and to verify that the data reported are complete and transparent.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The scope of the verification process is defined as a third-party independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Component Project Activity, limited to and against the criteria stated in Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 05.0)^{5/}, the latest version of the CDM Validation and Verification Standard for Programmes of Activities (VVS for PoAs version 02.0)^{1/}, the latest version of the CDM Project Standard for Programmes of Activities (PS for PoAs version 02.0)^{2/} and the latest version of the CDM Project Cycle Procedure for Programmes of Activities (PCP for PoAs version 02.0)^{3/}, as well as any other related methodological tools, guidelines and other regulatory documents adopted by the CMP or the Board.

The verification process takes as a basis the validated Programme Design Document (PoA-DD), version 09, dated 22/09/2020 and registered Component Project Activity Design Document (CPA-DD), version 09, dated 03/12/2020¹ (hereinafter referred to as PoA-DD^{11/} and CPA-DD^{12/}, corresponding Validation Reports^{13/} and CPA Monitoring Report^{15/} (hereinafter also referred to as the final MR).

The verification team has, based on the requirements set up in the CDM Validation and Verification Standard for Programmes of Activities (VVS for PoAs version 02.0)^{1/}, evaluated the provided information focusing on the identification of significant risks and reliability of project monitoring and generation of CERs.

The verification is not meant to provide any consulting towards the CME or authorized participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the programme design.

The objective of this small-scale CPA (SSC-CPA) No. 02: "*Domestic cookstoves in Maputo (Mozambique), phase II*" is to improve energy efficiency by substituting inefficient traditional cookstoves with more effective ones and at the same time improving the conditions of the local population living in the poor settlements of Malanga, Minkadjuine, Munhuana, Unidade 7, Chamanculo A, Chamanculo B, Chamanculo D, Aeroporto A, Aeroporto B, Mafalala and Urbanizaçao in the district of Nhlamankulu, in Maputo city, Mozambique, and reducing the greenhouse gas emissions. The verification team determines the conformity of the actual Component Project Activity and its operation with the CPA-DD^{12/} and MR^{15/}. Applus+ Certification has, by means of a desk review and an on-site visit, assessed that all physical features of the proposed CDM programme of activities proposed in the PoA-DD^{11/} are in place, and that the CME and authorized participants have operated the Component Project Activity as per the PoA-DD^{11/}, Generic CPA-DD^{11/} and Specific CPA-DD^{12/}. Thus the verification team has concluded that the Component Project Activity was implemented and operated as per the aforementioned references, and that all physical features of the project are in place. The verification team, based on the site visit and document review, is able to conclude that the project has been commissioned and implemented as per the above mentioned references. The start date of this monitoring period is 01/01/2018.

The monitoring report for this monitoring period is in compliance with the monitoring plan of the PoA-DD. The Component Project Activity was registered by applying the small scale methodology "AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 05.0)"^{5/} and the verification

¹ Initial version of the CPA-DD was v07 dated 24/09/2018. However, after receiving incompleteness for this Verification, the CME has gone through PRC process at PoA Level and CPA Level in order to address the given inconsistencies and the final version of the CPA-DD presented for this Verification is the v09 dated on 03/12/2020.

was carried out in accordance with the applied methodology. It was confirmed during the site visit that the Component Project Activity during the current verification is in accordance with the applicability criteria of the methodology. It is the responsibility of Applus+ Certification to express an independent GHG verification opinion on the GHG emission reductions and on the calculation of GHG emission reductions for the CPA for this monitoring period based on the reported emission reductions in the Monitoring Report^{15/}.

Applus+ Certification's verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech Accords, as well as those defined by the CDM Executive board. Applus+ Certification's approach was risk-based drawing on an understanding of the risks associated with reported GHG emissions data and the controls in place to mitigate these. The examination includes assessment of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for this monitoring period.

The verification team has planned and performed the work to obtain the information and explanations that are considered necessary to provide sufficient evidence for it to give reasonable assurance that the amount of calculated GHG emission reductions for this monitoring period were fairly stated.

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.	Lead Auditor Technical Expert (3.1)	OR	KUMAR	PANKAJ	Outsourced Entity (<i>True Quality Certifications Pvt. Ltd.</i>)	X	X	X	X
2.	Auditor (Verifier) Technical Expert in training (3.1)	OR	DAS	SUKANTA	Outsourced Entity (<i>True Quality Certifications Pvt. Ltd.</i>)	X	X	X	X
3.	Auditor in training (Verification) Technical Expert in training (3.1)	IR	CALLE	AGUSTÍN	Applus+ Certification	X	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 Technical Expert (3.1)	EI	CORTÉS	MIGUEL ÁNGEL	Applus+ Certification
2.	Report Approver	IR	DEBAT MOLLEVÍ	CARLA	Applus+ Certification

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.	<p>Errors in manual transfer of hard-copy records to ER spreadsheet for the monitoring parameters and sampling survey results.</p> <p>The errors may come from human error during the information transfer from the sources of the sampled data to the digital forms used for monitored parameters.</p>	<i>Medium</i>	<p>The following databases:</p> <ul style="list-style-type: none"> - 9981-0002_Stove Selling Database 2015-2017^{/16/}; and - 9981-0002_Usage Survey Database 2017^{/17/}. <p>...have been manually transferred from the hand-written surveillance records to the ER calculation spreadsheet.</p>	<p>The risk was mitigated by the training to the personnel involved in data capture, calculation and by following the monitoring responsibilities. The training records were reviewed which was also confirmed during on site visit interviews. Verification team, based on the above, confirms that the risk is appropriately mitigated.</p> <p>Since relevant monitoring parameters were monitored through an ex-post monitoring survey conducted by the CME, the DOE's Verification Team has physically checked:</p> <ul style="list-style-type: none"> - The 9981-0002_Stove Selling Database 2015-2017^{/16/}; - KPT reports dated 2018^{/18/}; - 9981- 0002_Usage Survey Database 2017^{/17/}; - User Agreements^{/19/}; <p>...of all the 22 household sampled users (using acceptance sampling approach), which are legally-binding and considered credible.</p> <p>The DOE's verification team has physically visited 22 ICS users.</p>
2.	<p>Information System:</p> <p>Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security.</p>	<i>Medium</i>	<p>The data is recorded in the spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database and Stove</p>	<p>The identified risk was mitigated by managing access to the records. 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</p>

			efficiency testing records.	is maintained by the CME.
3.	Accuracy of the measuring equipment.	Low	Check the calibration records for the measurement equipment used for efficiency test.	The risk due to accuracy of the measuring equipment was ensured by planning to check calibration certificates of the measuring equipment used for KPT.

C.2. Consideration of materiality in conducting the verification

The threshold of materiality was evaluated based on “Guideline: Application of materiality in verifications” Version 02.0^{8/} Paragraph 13 and CDM VVS for PoAs, version 02.0^{1/} Paragraph 307. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 5% of 42,170 tCO₂e which is equal to 2,108 tCO₂e.

In planning the verification, verification team took cognizance of “Guideline: Application of materiality in verifications” Version 02.0^{8/} Paragraph 11 and Paragraph 12. A materiality threshold of 2,108 tCO₂e is determined in line with CDM VVS for PoAs, version 02.0^{1/} Paragraph 308 (d).

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

- Monitoring system including the data input procedure (including relevant personnel and applicable template forms used);
- Copy of the agreement between households and CME/CPA Implementer(s) (origin of data);
- Stove unique ID system;
- ER sheets (application of data);
- Data flow;
- Data control procedures;
- Usage survey and KPT records.

In conducting the verification, DOE took cognizance of “Guideline: Application of materiality in verifications” Version 02.0^{8/} Paragraphs 13 to 17 and based its process on the input of data from different sources checked through sampling of records during on-site and off-site. Data flow was checked through comparison of data in hand written forms^{22/}, electronic database^{16/} and ER sheet^{20/}. The competence of the personnel involved in conducting the stove efficiency testing (KPT)^{18/}, recording of data and calculation of the emission reductions data, have been checked by the verification team by means of on-site visit 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 asking them about the process for data management during the on-site visit interviews. Further, data was crosschecked with the ER calculation spreadsheet^{20/} and the raw data collected.
- Mitigation due to error in information system: the 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 the raw data is collected by the field personnel and then transmitted and stored electronically at CME's office. The data quality control is maintained by the CME.
- Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing calibration certificates^{23/} of all the project equipment.

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

SECTION D. Means of verification

D.1. Desk/document review

The verification was performed primarily based on the review of the monitoring report 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, paying particular attention to the frequency of measurements, and the QA/QC procedures, and an evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of emission reduction.

Thereof, Applus+ Certification has performed a Document Review (Desk Review) taking in consideration:

- A review of presented data and information to verify its completeness.
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline and any other regulatory document, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.
- Cross-checks between the presented data and information provided in the PoA-DD, CPA-DD, CPA-MR, GHG data and emission reductions and information from other sources, including, but not limited to, the publicly available information in the UNFCCC.
- The sectoral and local expertise of the DOE at the time of reviewing the provided data and information.

The initial Monitoring Report^{15/} version 1.0, dated on 06/06/2019 submitted by the CME and additional background documents related to the emission reductions are reviewed as an initial step of the verification process. The subsequent step has involved the identification of corrective action requests and clarification requests (CARs and CLs) and Forward Actions Requests (FARs) which are presented in the Appendix 4 of this report.

As a result of these findings, the initial MR is revised to final MR version 06^{15/}, dated on 12/04/2021.

The references of the reviewed documentation can be observed under the Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 24/07/2019 to 25/07/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	<p>The verification team conducted visits to the CPA implementation site to confirm the information and to resolve issues identified in the document review.</p> <p>An on-site assessment was conducted as a part of verification activity and has involved:</p> <ol style="list-style-type: none"> 1) An assessment of the implementation and operation of the CDM Programme of Activities based on registered Monitoring Plan and physical features as per the approved PoA-DD/CPA-DD. 2) A review of information flows for generating, aggregating and reporting of the monitoring parameters. 3) Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan, as well as to confirm the competency of the operating/monitoring personnel and any calibration agency involved. 4) A cross-check between information provided in the MR, the physical implementation of the CPA and data from other sources. 5) A check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the approved PoA-DD/CPA-DD, the applied methodology and any other regulatory document. 6) A review of calculations and assumptions made in determining the GHG data and ERs. 7) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters. 8) Assessment of the implementation status of the Programme of Activities as per the approved PoA-DD / CPA-DD. 9) Physical inspection to assess the implementation of the Monitoring Plan: Visit to households and Interview with ICS users and stakeholders; Verification of baseline; Operation and maintenance; Procedures; and Technical details. 	<p>CPA Implementation site (Maputo, Mozambique)</p> <p>See <i>Section D.3</i> for more specific settlements locations.</p>	<p>24/07/2019 to 25/07/2019</p>	<p>Mr. Pankaj Kumar Mr. Sukanta Das Mr. Agustín Calle</p>

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Langa	Celso	Fondazione AVSI	24/07/2019 to 25/07/2019	CPA background and implementation,	Full Team
2.	Guiso	Antonio	CarbonSink Group S.r.l.	24/07/2019 to 25/07/2019	ICS types and distribution, monitoring activities and record keeping	Full Team
3.	Sindique	Aldina	CarbonSink Group S.r.l.	24/07/2019 to 25/07/2019	Ex-post monitoring surveys (KPT and Usage Survey) Programme Design, Baseline fuel usage, sampling approach, results and ER calculations	Full Team
4.	Mauno	Ulla	CarbonSink Group S.r.l.	Full assessment process	Coordinator for communications, corrections in the MR / ER sheet and overall coordination for findings resolution during the assessment process	Full Team
5.	22 interviews to independent household representatives in the Districts: - Chamanculo B; - Chamanculo D; - Aeroporto B; - Urbanização. (See the list below)		Households	24/07/2019 to 25/07/2019	DOE site inspection and survey of ICS users (Usage Survey, Distribution system of ICS, Baseline fuel usage, Type of ICS used)	Full Team
6.	Lucia Zavala		Households	24/07/2019	Project implementation and operation, Sales / Distribution records	Full Team
7.	Naomi Tembe					
8.	Rita Francisco					
9.	Carlos Salmao					
10.	Julieta Simone					
11.	Roza					
12.	Alquedona Fernando					
13.	Alexandre Ngovane					
14.	Flora Siteo					
15.	Aliceda Gloria					
16.	Carlota Silvestre					
17.	Allima Mizine					
18.	Oracio Sebastiao					
19.	Celestina Vasco					
20.	Sandra Aurelio					
				25/07/2019		

21.	Crisalana Zanga				
22.	Felizarda Pedro				
23.	Margarita Dussantos				
24.	Rita Choochow				
25.	Eugenia Munando				
26.	Aurelia Alfredo Banze				
27.	Azeграда Nundlovo				

D.4. Sampling approach

The total number of stoves distributed at the end of the monitoring period in the CPA is 12,413 (for which usage rate was 89% for Vintage 1 and for Vintage 2 91% as per the Usage Survey Database^{17/}). The verification team used acceptance sampling approach for checking the operational status of the improved cook stoves. A sample size of 22 was required, based on an AQL of 0.5% and UQL of 15%, the producer risk used is 5% and consumer risk used was 15%.

As assessed in above sections, emission reductions from this CPA (9981-0002), are being claimed for this monitoring period and the total population of the stoves under this CPA are 12,413.

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

- Annual quantity of woody biomass used during the project activity in tonnes/device ($B_{y,new,KPT}$); and
- The number of project devices of type i in year y ($N_{y,i}$).

Simple random sampling was applied by the CME for selection of the monitoring samples with 95/10 confidence/precision (90/10 for KPT) for cross-CPA sampling for all the parameters which is deemed acceptable as per the registered PoA DD^{11/} / CPA DD^{12/}.

As per the Standard for "Sampling and surveys for CDM project activities and programmes of activities" version 08.0^{6/}, Paragraph 25, 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 the Standard for "Sampling and surveys for CDM project activities and programmes of activities" version 08.0^{6/}, Paragraph 26, the verification team has applied a sampling approach for on-site visits surveys as part of the verification process. Now as the CME has applied sampling approach, the verification team has chosen acceptance sampling in accordance with the Standard for "Sampling and surveys for CDM project activities and programmes of activities" version 08.0^{6/}, Paragraph 28.

DOE used sampling during verification for checking the operational status and to check if the KPT tests have been done in the households and it was confirmed that KPT tests were conducted during the sampling process.

Considering that Mozambique is a Least Developed Country², applying paragraph 39 (c) of the Standard for "Sampling and surveys for CDM project activities and programmes of activities" version 08.0^{6/}, a sample size of 22 households was chosen (with no discrepant records). A sample size of 22 was required, based on an AQL of 0.5 % and UQL of 15 %, producer risk 5 % and consumer risk 15 %. Acceptance number (c) thus determined for the sample is 1. DOE visited 22 samples. It was observed that out of the 22 samples, 21 stoves were found to be operational and 1 stove was non-operational, and this matched with the CME's records and hence no discrepant records were observed with the published MR^{15/} and ER sheet^{20/} and thus $c=1$. Thus, CME's set of records has been accepted in line with the Standard for "Sampling and surveys for CDM project activities and programmes of activities" version 08.0^{6/}, Paragraph 38. Verification team has cross verified these sampling documents during the on-site visit.

The sampling plan implemented by the CME is in accordance with the PoA-DD^{11/} / CPA-DD^{12/} as well as the CME has appropriately performed Simple Random Sampling procedure in line with the applied approved monitoring methodology^{5/}. As the registered PoA-DD^{11/} mentions the option for Simple Random Sampling procedure, it is acceptable to the verification team.

² Mozambique is considered as a Least Developed Country, and the same has been checked by the DOE in this [LINK](#).

The necessary confidence / precision of 95/10 and 90/10 for each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted^{17/}.

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	CL#5		
Remaining forward action requests from validation and/or previous verifications			
CPAs considered for verification and covered in this report			
Programme of activities			
Compliance of the programme implementation with the registered PoA-DD	CL#1		
Implementation and operation of the management system	CL#2	CAR#1	
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 ³			
• 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	CL#7		
Compliance of monitoring activities with the registered monitoring plan			
• Data and parameters fixed ex ante or at renewal of crediting period			
• Data and parameters monitored	CL#3	CAR#2	
• Implementation of sampling plan			

³ 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).

CDM-PoA-VCR-FORM

Compliance with the calibration frequency requirements for measuring instruments		CAR#4	
Assessment of data and calculation of emission reductions or net removals			
<ul style="list-style-type: none"> Calculation of baseline GHG emissions or baseline net GHG removals by sinks 	CL#3 CL#4 CL#6		
<ul style="list-style-type: none"> Calculation of project GHG emissions or actual net GHG removals by sinks 			
<ul style="list-style-type: none"> Calculation of leakage GHG emissions 			
<ul style="list-style-type: none"> Summary of calculation of GHG emission reductions or net GHG removals by sinks 	CL#3 CL#6	CAR#3	
<ul style="list-style-type: none"> Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA 			
<ul style="list-style-type: none"> Remarks on difference from estimated value in included CPA 			
Assessment of reported sustainable development co-benefits			
Global stakeholder consultation			
Others (please specify)			
Total	7	4	

SECTION E. Verification findings**E.1. General****E.1.1. Compliance of the monitoring report with the monitoring report form**

Means of verification	The verification team determined whether the monitoring report was completed using the valid version of the applicable monitoring report form. The verification team has checked whether all the sections of the monitoring report follows the guidelines provided in the template itself.
Findings	CL 5 was raised in this section and closed accordingly.
Conclusion	The verification team concludes that the monitoring report provides all the information in accordance with the valid version of the CDM-PoA-MR-FORM (version 03.0) ^{9/} and the instructions therein for filling it. The monitoring report has been prepared in line with VVS-PoA, version 02.0 ^{1/} .

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

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The verification team has reviewed the validation report and previous verification reports and observed that there was no FAR. The DOE has not raised a forward Action Request (FAR) during this verification process.

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)
Domestic cookstoves in Maputo (Mozambique), phase II - 9981-P1-0002-CP1)	Yes	12/07/2016	PoA-DD version 09, dated on 22/09/2020	Yes Request for issuance for previous monitoring period where CPA 2 is included was uploaded already (Issuance Request number: 9981-MP2-IRP2)
Improved Cookstoves in Pemba-(9981-P1-0003-CP1)	No	01/08/2016	PoA-DD version 09, dated on 22/09/2020	Yes Request for issuance for previous monitoring period where CPA 3 is included was uploaded already (Issuance Request number:9981-MP2-IRP2)

Domestic Cooking Stoves in Maputo (Mozambique) (9981-P1-0001-CP1)	No	17/10/2014	PoA-DD version 07, dated on 29/03/2019	No Request for issuance for previous monitoring period where CPA 1 is included was uploaded already but covering the period from 01/01/2015 to 11/07/2016 (Issuance Request number: 9981-MP3-MRP1)
"Fuel-efficient cooking in Maputo Province, Mozambique by the entity SK Trading International Co., Ltd. (SKTI) in the Republic of Korea (9981-P1-0004-CP1)	No	23/02/2021 <i>Provisional (awaiting guidance from the CMP at CMP 16)</i>	PoA-DD version 09, dated on 22/09/2020	No No request for issuance for this CPA is available at UNFCCC.

E.2. Programme of activities

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

Means of verification	The verification team determined the conformity of the actual component project activity and its operation with the registered programme design document. Applus+ Certification has, by means of a desk review and an on-site visit, assessed that all physical features of the component project activity in the registered PoA-DD ^{/11/} are in place, and that the Coordinating/Managing Entity has operated the CPA as per the registered PoA-DD ^{/11/} and CPA-DD ^{/12/} .
Findings	CL 1 and CL 3 were raised in this section and closed accordingly.
Conclusion	<p>The verification team by means of an on-site inspection and document review concludes that the component project activity was implemented and operated as per the registered PoA-DD^{/11/} and validated CPA-DD^{/12/} and that all physical features of the project are in place.</p> <p>A total of 12,413 "CH-2200" model charcoal cook stoves of Envirofit were distributed during June 2015 to July 2017 in this CPA 02; out of which only 11,123 cook stoves were operational (usage rate being 90%).</p> <p>During the monitoring period, no cook stoves were distributed. The cook stoves can be easily tracked using cook stove IDs punched on them. Thus the verification team states that the implementation of the CPA matches with that mentioned in the registered PoA-DD^{/11/} and CPA-DD^{/12/}.</p>

E.2.2. Implementation and operation of the management system

Means of verification	The verification team determined the roles and responsibilities, training arrangements and capacity development, procedure for technical review of inclusion of CPA's, data management responsibilities, detailed record-keeping system for the CPA under the PoA, and how the process performance documentation and relevant evidences are explained in the CPA-DD ^{/12/} .
Findings	CL 2 and CAR 1 were raised in this section and closed accordingly.
Conclusion	Verification team evaluated the management systems in place to implement the

	<p>monitoring of the project activity.</p> <p>This included the management structure, records and document control process, procedures for training, continuous improvement of the PoA management system, record keeping system, procedures for double counting.</p> <p>The PoA management system including the record-keeping system and the management structure has been explained in section C of the registered PoA-DD^{11/}. During the course of verification, verification team based on review of section B.1 of the monitoring report, supporting documents and interview/observation has assessed this management system.</p> <p>The verification team confirms that the monitoring management systems and processes of the CDM PoA are in place; with the responsibilities properly identified; recording processes in place; a procedure for review of inclusion of CPAs established; a procedure to avoid double counting; and measures for continuous improvements; as described in the PoA-DD^{11/}.</p>
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E.2.3. Post-registration changes

E.2.3.1. Corrections

The board has accepted the PRCs of the PoA on 15/07/2019⁴. For the originally validated PoA-DD version 5.0 the following PRCs of the type “*Corrections*” have been made:

- Inclusion of an already authorized participant for the PoA, modification of focal points, corresponding corrections in Appendix 1 for contact information update.
- Update of the template’s version and corresponding changes.
- Corrections of parameters’ data.
- Typo corrections, clarifications and specifications along the PoA-DD.

Verification team referred PoA-DD version 07 dated on 29/03/2019^{11/} and the corresponding Validation Report on PoA PRCs dated 12/04/2019^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-002.

E.2.3.2. Inclusion of a monitoring plan

>>

There is no such change.

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

>>

The board has accepted the PRCs of the PoA on 15/07/2019⁵. For the originally validated PoA-DD version 5.0 the following PRCs of the type “*Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory document*” have been made:

- Application of approaches to determine values of parameters in cases where the households are having two project stoves.

Verification team referred PoA-DD version 07 dated on 29/03/2019^{11/} and the corresponding Validation Report on PoA PRCs dated 12/04/2019^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-002.

⁴ <https://cdm.unfccc.int/PRCContainer/DB/prcp952420817/view>

⁵ <https://cdm.unfccc.int/PRCContainer/DB/prcp952420817/view>

The board has accepted the further PRCs of the PoA on 21/12/2020⁶. For the previously validated PoA version (version 07) the following permanent changes/clarifications to the registered monitoring plan have been made:

- The PoA-DD template version 08.1

The PoA-DD template has been updated for the latest version (Version 09.0).

- Fraction of non-renewable ($f_{NRB,y}$) determined based on the default country specific value endorsed by designated national authority and approved by the CDM Board.

Fraction of non-renewable ($f_{NRB,y}$) calculated using requirements in "TOOL30: Methodological tool: Calculation of the fraction of non-renewable biomass", version 02.0 and fixed ex-ante.

- Fraction of non-renewable ($f_{NRB,y}$) monitored annually.

Fraction of non-renewable ($f_{NRB,y}$) fixed ex-ante.

- Sampling methods of "Simple random sample on whole population" for determining $N_{y,i}$ and "Simple random sampling on vintage-wise populations" $B_{y,new,KPT}$ presented as only options of the sampling methods.

Added the following specifications:

"Sampling methods of "Simple random sample on whole population" and "Simple random sampling on vintage-wise populations" are foreseen to be used. Alternatively, also other sampling approaches in line with CDM guidelines may be used."

"In case the monitoring will cover stoves distributed in different years (i.e. different vintages), the target population is not considered homogeneous regarding the stove efficiency as the efficiency is assumed to drop over the years. Therefore, an approach of "Simple random sampling on vintage-wise populations" will be applied for estimating the stove efficiency. Similarly, "simple random sampling on vintage-wise populations" may be used also for estimating the proportion of the stoves operating."

- The equation to calculate the required sample size for annual determining of for example $B_{y,new,KPT}$ (or other mean value parameter monitored annually) was indicated erroneously

The equation for determining sample size for mean value parameters is corrected to be in line with the CDM guideline "Sampling and surveys for CDM project activities and programmes of activities".

- No specifications regarding the minimum sample size.

Added the following specification:

"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."

- "The sampling is foreseen to occur at the end of each monitoring period and all the measurements will be conducted at the latest 6 months after the end of the specific monitoring period. The maximum length of one monitoring period will be two years (duration, not calendar years). Therefore, the measurement will be conducted at the latest 24 + 6 months after the start of the specific monitoring period."

The schedule for implementing the sampling effort shall be done so that the gap between consecutive annual or biennial surveys (i.e. the gap between the start date of the survey and the start date of the consecutive survey) shall not be more than 12 months or 24 months, respectively.

⁶ <https://cdm.unfccc.int/PRCContainer/DB/prcp335421212/view>

- The below indicated versions of the following standard and guidelines of sampling and surveys are applied:
 - Standard for sampling and surveys for CDM project activities and programmes of activities (Version 08.0).
 - Guidelines for sampling and surveys for CDM project activities and programme of activities (Version 04.0).

Verification team referred PoA-DD version 09 dated on 22/09/2020 and the corresponding Validation Report on PoA PRCs dated 21/12/2020⁷ and found these changes approved by UNFCCC EB with ID PRC-9981-004.

E.2.3.4. Changes to the programme design

>>

The board has accepted the PRCs of the PoA on 15/07/2019⁸ (effective approval date). For the originally validated PoA-DD version 5.0 the following PRCs of the type “*Changes to the programme design*” have been made:

- Application of Paragraph 124 (m) from Project Standard for Programmes of Activities version 02.0 for the demonstration of additionality using the Methodological tool: Demonstration of additionality of microscale project activities” Tool 19 version 09.0 EB 101 Annex 15.

Verification team referred PoA-DD version 07 dated on 29/03/2019^{11/} and the corresponding Validation Report on PoA PRCs dated 12/04/2019^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-002.

E.2.3.5. Addition of CPA inclusion template

>>

The board has accepted the PRCs of the PoA for addition of a CPA Inclusion Template on 22/02/2021⁹.

A CPA Inclusion Template has been added to the PoA-DD.

Verification team referred PoA-DD version 09 dated on 22/09/2020^{11/} and the corresponding Validation Report on PoA PRCs dated 21/12/2020^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-004.

E.2.3.6. Change of coordination/managing entity

>>

There is no such change.

E.2.3.7. Changes specific to afforestation and reforestation activities

>>

There is no such change.

E.3. Component project activities

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

Means of verification	The verification team determined how the generic CPA is part of a PoA-DD and checked how each technology/measure, methodology and combination thereof, or that technologies/measures have been combined in one generic CPA-DD in accordance with the relevant requirements in the “CDM project standard for
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⁷ <https://cdm.unfccc.int/PRCContainer/DB/prcp832003205/view>

⁸ <https://cdm.unfccc.int/PRCContainer/DB/prcp952420817/view>

⁹ <https://cdm.unfccc.int/PRCContainer/DB/prcp832003205/view>

	programmes of activities, version 02.0 ^{10/} .
Findings	No findings were raised for this requirement.
Conclusion	The verification team concludes that the CPA description of the project contained in the registered CPA-DD to be complete and accurate. The CPA-DD complies with the relevant methodology, tools, forms and guidance at the time of CPA-DD submission for registration/inclusion. A total of 12,413 “CH-2200” model charcoal cook stoves of Envirofit were distributed during June 2015 to July 2017 in this CPA02; and usage rate being 89% for Vintage 1 and for Vintage 2 91%. During the monitoring period, no cookstoves were distributed. The cookstoves can be easily tracked using cook stove IDs punched on them. Thus the verification team states that the implementation of the project matches with that mentioned in the registered PoA-DD ^{11/} and CPA-DD ^{12/} .

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 is no temporary deviation for this monitoring period from the registered CPA-DD.

E.3.2.2. Corrections

>>

The board has accepted the PRCs of the CPA on 25/10/2018¹⁰. The Monitoring Report presents the information for these changes of the type “*Corrections*”.

Verification team referred CPA-DD version 07 dated on 24/09/2018^{12/} and the corresponding Validation Report on CPA PRCs dated 25/09/2018^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-001.

Further the board has accepted the PRCs of the CPA on 04/04/2021¹¹ of the type “*Corrections*”. The verification team checked the UNFCCC website and accepted the same as correct.

Verification team referred CPA-DD version 09 dated on 03/12/2020^{12/} and the corresponding Validation Report on CPA PRCs dated 30/01/2021^{14/} and found these changes approved by UNFCCC EB with ID PRC-9981-005.

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

>>

There is no such change.

E.3.2.4. Inclusion of a monitoring plan

>>

There is no such change.

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

>>

As per the MR, Post registration change is presented in PRC ref. PRC-9981-005, approved on 04/04/2021¹² of the type “*Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents*”. The verification team checked the UNFCCC website and accepted the same as correct.

¹⁰ <https://cdm.unfccc.int/PRCContainer/DB/prcp917990535/view>

¹¹ <https://cdm.unfccc.int/CPAPostRegChanges/DB/prcp517398470/view>

¹² <https://cdm.unfccc.int/CPAPostRegChanges/DB/prcp517398470/view>

Verification team referred CPA-DD version 09 dated on 03/12/2020^{/12/} and the corresponding Validation Report on CPA PRCs dated 30/01/2021^{/14/} and found these changes approved by UNFCCC EB with ID PRC-9981-005.

E.3.2.6. Changes to the project design

>>

As per the MR, Post registration correction is presented in PRC ref. PRC-9981-001 which approved on 15/07/2019. The verification team checked the UNFCCC website and accepted the same as correct.

The board has accepted the PRCs of the CPA on 25/10/2018¹³. The Monitoring Report presents the information for these changes of the type “*Changes to the project design*”.

Verification team referred CPA-DD version 07 dated on 24/09/2018^{/12/} and the corresponding Validation Report on CPA PRCs dated 25/09/2018^{/14/} and found these changes approved by UNFCCC EB with ID PRC-9981-001.

E.3.2.7. Changes specific to afforestation and reforestation activities

>>

Not applicable as the project does not involve afforestation and reforestation activity.

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

Means of verification	The verification team determined whether the registered monitoring plan is in accordance with the applied methodology ^{/5/} including applicable tools and any other related regulatory document.
Findings	CL 7 was raised in this section and closed accordingly.
Conclusion	The verification team is able to confirm that the monitoring plan contained in the registered CPA-DD is in accordance with the approved methodology applied i.e. AMS-II.G (version 05) ^{/5/} . The monitoring plan contained in the PoA-DD ^{/11/} /CPA-DD ^{/12/} is in accordance with the approved methodology applied by the component project activity and its applicable tools and any other related regulatory documents.

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	The verification team has determined whether all ex-ante parameters used for emission reduction calculation stated in the registered monitoring plan are used appropriately as per the registered CPA-DD.
Findings	No findings were raised for this requirement.
Conclusion	Verification team confirms that the data and parameters fixed ex-ante are in compliance with the registered CPA-DD ^{/12/} and monitoring plan. Please refer to the Appendix 5 in this report for further details.

E.3.4.2. Data and parameters monitored

Means of verification	The verification team has determined whether the registered monitoring plan has been properly implemented and followed by the CME and that the monitoring has been carried out in accordance with the registered monitoring plan.
Findings	CAR 2 and CL 3 were raised in this section and closed accordingly.
Conclusion	The verification team has assessed the data and parameters monitored during the monitoring period and it confirms that all the ex-ante and ex-post parameters are monitored in accordance with the approved monitoring plan and applied methodology. Please refer to the Appendix 5 in this report for further details. In the 9981-0002 Usage Survey Database 2017 ^{/17/} (conducted at least biennially

¹³ <https://cdm.unfccc.int/PRCContainer/DB/prcp917990535/view>

	<p>as stated in the Monitoring Plan), last one conducted on 2017, a sample size of 106 households for this monitoring period was set by CME as calculated in the separate Excel spreadsheet^{17/}, in line with the applied methodology, is at least 95/10 (a 95% confidence interval and a 10% margin of error). The required confidence/precision level was met and reached. Please refer to the Appendix 5 in this report for further details.</p> <p>For Kitchen Performance Test (KPT)^{18/}, (conducted annually or biennially as per the Monitoring Plan), conducted annually for this monitoring period, sample size of 48 households for KPT 2018^{18/} was set by CME as calculated in the separate Excel spreadsheet^{17/}, in line with the applied methodology. The required precision of at least 90/10 (a 90% confidence interval and a 10% margin of error) is applied in line with the applied methodology and the required confidence/precision level was met and reached. Please refer to the Appendix 5 in this report for further details.</p>
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E.3.4.3. Implementation of sampling plan

Means of verification	The verification assessed whether there has been compliance of the sampling efforts and surveys with the registered sampling plan in accordance with the UNFCCC CDM Guideline for "Sampling and surveys for CDM project activities and programmes of activities" version 04.0 ^{6/} and if CME has applied a sampling approach to determine data and parameters monitored.
Findings	No findings were raised for this requirement.
Conclusion	<p>The verification team was able to confirm that "Simple random sampling" approach was followed by CME as a sampling approach for monitoring. The monitoring plan contains a detailed description in accordance with the UNFCCC CDM Guideline for "Sampling and surveys for CDM project activities and programmes of activities" version 04.0^{6/}.</p> <p>For usage rate, a sample size of 106 households was set by CME in the 9981-0002 Usage Survey Database 2017^{17/} for this monitoring period as calculated in the referenced document.</p> <p>Spreadsheet, in line with the applied methodology, takes a precision level of at least 95/10 (a 95% confidence interval and a 10% margin of error). The required confidence/precision level was met. Please refer to the Appendix 5 in this report for further details.</p> <p>For Kitchen Performance Test (KPT)^{18/}, (conducted annually or biennially as per the Monitoring Plan), conducted annually for this monitoring period, sample size of 48 households for KPT 2018^{18/} was set by CME as calculated in the separate Excel spreadsheet, in line with the applied methodology. The required precision of at least 90/10 (a 90% confidence interval and a 10% margin of error) is applied in line with the applied methodology and the required confidence/precision level was met. Please refer to the Appendix 5 in this report for further details.</p>

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

Means of verification	The verification team determined whether the calibration of the measuring equipment that has an impact on the claimed emission reductions is conducted by the CME at a frequency specified in the registered monitoring plan.		
Findings	CAR 4 was raised in this section and closed accordingly.		
Conclusion	The key monitoring equipment used for conducting the stove efficiencies is weighing scale. The appropriate QA/QC procedures have been followed for the monitoring parameters. The verification team reviewed the calibration reports and observed the following: the scales used are calibrated before put into use. The validity is 06 months from the calibration date. Model and serial number of the scales and that mentioned in the calibration certificates match. Hence accepted.		
	KPT dates for CPA 2	Calibration date	Calibrating agency
	20/11/2018 to 30/11/2018	19/11/2018	Carbonsink

	<p>The measurement during the KPT was made by using two digital portable spring balances of model "KERN HDB 5K5N" with the accuracy of 0.05 kg. The resolution of this scale model is 3 digits.</p> <p>The serial nos. of the balances are:</p> <ol style="list-style-type: none"> 1) WD 180041585 2) WD 180041593 <p>The approach of making the calibration prior to field measurements is also in line with the requirements of the international standard ISO 9011 (par 7.6). The approach used for calibration is the use of masses previously certified. The DOE has checked the type and conditions of the Mass of type M1 GRAM with s/n #35260 used for calibration of the scales and found it satisfactory.</p>
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E.3.6. Assessment of data and calculation of emission reductions or net removals

E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of baseline emissions resulting from the registered CPA-DD are correct. The verification team has checked whether calculations of baseline GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.										
Findings	CL 3, CL 4 and CL 6 were raised in this section and closed accordingly.										
Conclusion	<p>The equations for baseline emissions, as provided in the Monitoring Report^{/15/} and confirmed with the registered CPA-DD and the methodology AMS-II.G, version 05 are:</p> $ER_y = By,savings * fNRB,y * y NCV biomass * EF_{projected_fossilfuel} * N_{y,i}$ <p>Where:</p> <p>ER_y = Emission reductions during the year y in tCO₂e. By,savings = Quantity of woody biomass that is saved in tonnes per device fNRB,y = Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass using survey methods or government data or default country specific fraction of non-renewable woody biomass (fNRB) values available on the CDM website NCVbiomass = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne, wet basis) EF_{projected_fossilfuel} = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO₂/TJ N_{y,i} = Number of project devices of type i operating in year y</p> <p>Determination of By,savings</p> <p>In order to determine ex post By,savings equation 2 of Option 1 described in paragraph 12 of AMS-II.G is chosen and therefore, the following equation is used:</p> $B_{y\ saving} = B_{old\ y} - B_{new\ KPT}$ <p>Where:</p> <p>By,savings = Quantity of woody biomass that is saved in tonnes per device Bold = Quantity of woody biomass used in the absence of the project activity in tonnes per device By,new,KPT = Annual quantity of woody biomass used in year y in tonnes per device, measured as per the Kitchen Performance Test (KPT) protocol</p> <p>The verification team confirms that equations for baseline emissions provided in the Monitoring Report^{/15/} and confirmed with the registered CPA-DD^{/12/} and the methodology AMS-II.G, version 05^{/5/}.</p> <table><tr><th>Parameter</th><th>Description</th><th>Unit</th><th>Value</th><th>Data source</th></tr><tr><td>Bold</td><td>Quantity of woody biomass</td><td>Tonnes of woody biomass/device/</td><td>6.601 for 2018</td><td>Calculated</td></tr></table>	Parameter	Description	Unit	Value	Data source	Bold	Quantity of woody biomass	Tonnes of woody biomass/device/	6.601 for 2018	Calculated
Parameter	Description	Unit	Value	Data source							
Bold	Quantity of woody biomass	Tonnes of woody biomass/device/	6.601 for 2018	Calculated							

		used in the absence of the project activity in tonnes per device	year		
Usage rate	Based on the survey of 2017 ^{17/} , 89% for Vintage 1 and for Vintage 2 91%, of the respondents confirmed that the majority were using the project stoves daily. This usage rate (90%) is applied for the ER calculations ensuring that only the operational devices (i.e. project stoves which are used daily) are included in the ER calculations.	Percentage	89% for Vintage 1 and for Vintage 2 91%	Survey	
LAF	Leakage adjustment factor to account for leakages (ex-ante fixed parameter)	-	0.95	Methodology AMS-II.G	
By,new,KPT	Annual quantity of woody biomass used in year y in tonnes per device, measured as per the Kitchen Performance Test (KPT) protocol	Tonnes of woody biomass/device/year	KPT Survey 2018: Vintage 1 : 2.773 Vintage 2: 2.884	Project KPT	
fNRB,y	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass	-	0.91	Calculated (ex-ante) using the TOOL30: Methodological tool: Calculation of the fraction of non-renewable biomass", version 02.0.	
NCVbiomass	Net calorific value of the nonrenewable woody biomass that is substituted	TJ/t	0.015	IPCC Default Value	
EFprojected_fossilfuel	Emission factor for the substitution of non-renewable woody biomass by similar consumers	tCO ₂ /TJ	81.6	AMS-II G Default Value	
ERy	Emission reductions during the year y in tCO ₂ e	tCO ₂ /device/year	Vintage 1: 3.90 Vintage 2: 3.77 for 2018 with leakage adjustments	Calculated	
Total baseline emissions calculated are 42,170 tCO ₂ e.					

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

Means of verification	There are no project emissions identified in the monitoring methodology.
Findings	No findings were raised for this requirement.
Conclusion	There are no project emissions identified in the monitoring methodology.

E.3.6.3. Calculation of leakage GHG emissions

Means of verification	The verification team assessed whether the data and calculations of leakage emissions resulting from the registered PDD are correct. The verification team has checked whether calculations of leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	No findings were raised for this requirement.
Conclusion	A default (0.95) Net to gross adjustment factor to account for leakages (B_{old}) has been considered by the CPA and thus it is in line with the requirement of monitoring methodology and the CPA-DD. Total leakages for the current monitoring period are 4,069 tCO ₂ e.

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

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved are in line with the resulting from the registered CDM PoA Component Project Activity. The verification team has checked whether calculations of GHG emission reductions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	CL 3, CL 6 and CAR 3 were raised in this section and closed accordingly.
Conclusion	Verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the predefined formulae from registered CPA-DD ^{12/} . The total number of ERs achieved during the monitoring period are 42,170 tCO ₂ e. In summary, verification team confirms that actual emission reductions are higher than the estimate of the currently approved CPA-DD ^{12/} for this monitoring period.

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
"Domestic Cookstoves in Maputo, Phase II" 9981-0002	81,781	35,310	4,089	0	42,170 ¹⁴	42,170 ⁸
Total	81,781	35,310	4,089	0	42,170 ⁸	42,170 ⁸

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

Means of verification	The verification team has compared the CERs achieved during this monitoring period with the estimated value and reason for increase if any.
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¹⁴ Note that after calculation of BE-PE-LE, the CME has applied a conservative factor of 0.5% over the resulting ERs (i.e. $(81,781 - 35,310 - 4,089) \times 0.995 = 42,170$ tCO₂e, to consider mobility within the CPA implementation areas and neighborhoods, as explained in MR.

Findings	No findings were raised for this requirement.
Conclusion	<p>The total number of ERs achieved during the monitoring period is 42,170 tCO₂e.</p> <p>In summary, verification team confirms that actual emission reductions are higher than the estimated ones of the currently approved CPA-DD^{/12/} for this monitoring period.</p>

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period	Value estimated in ex ante calculation in the included CPA-DD(s)
"Domestic Cookstoves in Maputo, Phase II" 9981-0002	42,170	25,717
Total	42,170	25,717

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

Means of verification	The verification team compared the actual values achieved by the CPA during this monitoring period with the values estimated in ex-ante calculations in the included CPA-DD.
Findings	CAR 03 was raised in this section and closed accordingly.
Conclusion	<p>The CERs achieved in this monitoring period are 42,170 tCO₂e as compared to ex-ante estimation of 25,717 tCO₂e indicated in the registered CPA-DD^{/12/}.</p> <p>In line with included CPA-DD^{/12/}, the ERs ex-ante estimation of emission reductions^{/21/} is made using a different calculation method than applied later for the ex-post ER calculations.</p> <p>The ex-post calculations^{/20/} are based instead on a more precise calculation method applying the monitored values of average daily charcoal consumption in the project scenario.</p> <p>Verification team checked included CPA-DD^{/12/} and the Ex ante ER calculations^{/21/} and found that for this verification different approach was used for calculation of biomass saved using KPT.</p> <p>Verification team also confirmed that very conservative usage rate (60%) considered ex ante in approved CPA-DD, Ver. 07. Ex ante usage rate (60%) is much lower than ex post cumulative usage rate of 90% for this monitoring period which has resulted into an increase in actual claimed ERs for this monitoring period. Explanation provided by CME for difference in ex ante and ex post ERs are in line with applied methodology and found to be appropriate.</p> <p>Verification team conclude that this approach of ex-post estimation of biomass saved is in line with methodology and accepted.</p>

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

Means of verification	NA
Findings	NA
Conclusion	NA

E.3.8. Global stakeholder consultation

Means of verification	The project MR ^{/15/} was webhosted on UNFCCC website
Findings	No findings were raised for this requirement.
Conclusion	The project MR ^{/15/} was webhosted on UNFCCC website. No comments were received during the public availability period.

SECTION F. Internal quality control

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As a final step for Verification, the final documentation, including the verification report, has to undergo an internal quality control by independent and qualified Technical Reviewer(s) to be approved.

Details of the Technical Reviewer(s) are provided within the verification report in Section B.2 and Appendix 2 for further references of knowledge and capability to conduct the quality checking.

After the Technical Review process, and once the Technical Review comments (if any) are incorporated to the Final Verification Report and this is approved by the Technical Review Team, the final documentation has to undergo a final quality checking process called Administrative Review, done by the Applus+ Certification's Project Activity Manager and/or Technical Support.

For final approval, the final set of documents are prepared by the DOE's Technical Manager or its deputy and signed by the authorized signatory of the DOE.

In case any of the persons performing this final internal quality control approval process has acted as a part of the Assessment Team or Technical Review team, the approval can only be given by DOE's personnel who have not been part of those teams.

If the final set of documents has been satisfactorily approved, the Request for Issuance is submitted to the UNFCCC CDM EB along with the relevant documents.

SECTION G. Verification opinion

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LGAI Technological Center, S.A. (Applus+ Certification) DOE E-0032 has been contracted by PoA's CME *Fondazione AVSI* to undertake the independent verification of the registered CDM PoA titled "*Domestic Cooking Stoves substitution programme in Mozambique*" (PoA ID: 9981) covering CPA 002 titled "*Domestic cookstoves in Maputo (Mozambique), phase II*". The objectives of this verification are to verify and certify emission reductions reported for the specific Component Project Activity (CPA) for the monitoring period from 01/01/2018 to 31/12/2018 (first and last day included); and to verify that the data reported are complete and transparent.

The Verification Team has, by means of a desk review, on-site inspection and physical/online interviews, that all physical features of the proposed PoA and CPA in the approved versions of the PoA-DD^{11/}, version 09 dated on 22/09/2020 and the CPA-DD^{12/}, version 09, dated on 03/12/2020, respectively, are in place and that the Coordinating/Managing Entity (CME) and CPA Implementer(s) have operated the Component Project Activity as per the aforementioned references.

The review of the revised Monitoring Report^{15/}, version 06 dated on 12/04/2021, the necessary supporting documentation, the publicly available information including the approved versions of the PoA-DD^{11/}, version 09 dated on 22/09/2020 and the CPA-DD^{12/}, version 09, dated on 03/12/2020, as well as any other external source used for cross-checking requirements and subsequent follow-up actions (including physical onsite inspections, Skype calls and interviews), have provided Applus+ Certification with sufficient evidences to determine the compliance with the applicable requirements and regulatory documents for the monitoring period starting on 01/01/2018 to 31/12/2018.

The final Monitoring Report^{15/}, version 06 dated on 12/04/2021 complies with all the applicable requirements set out in VVS for PoA version 02.0, PS for PoA version 02.0 and PCP for PoA version 02.0 and correctly applies the selected baseline and monitoring methodology set out in the methodology AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 05.0), as well as all the applicable requirements set out in any other applicable regulatory document.

The management of the Coordinating/Managing Entity (CME) and CPA Implementer(s) is responsible for the preparation and reporting of GHG Emission Reductions data, and the reported GHG Emission Reductions on the basis set out within the PoA and CPA monitoring plan. The development and maintenance of records and data transferring/reporting procedures in accordance with the monitoring plan, including the calculation and determination of GHG Emission Reductions claimed by the CPA is a responsibility of the management of the Coordinating/Managing Entity (CME) and CPA Implementer(s).

It is the responsibility of Applus+ Certification to express an independent GHG Verification opinion on the GHG Emissions Reductions and on the calculation of GHG Emission Reductions claimed by the PoA CPA for this monitoring period based on the reported information in the Monitoring Report^{15/}, version 06 dated on 12/04/2021.

Applus+ Certification's Verification process is defined as a third-party independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Component Project Activity, limited to and against the criteria stated in Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 05.0)^{5/}, the latest version of the CDM Validation and Verification Standard for Programmes of Activities (VVS for PoAs version 02.0)^{1/}, the latest version of the CDM Project Standard for Programmes of Activities (PS for PoAs version 02.0)^{2/} and the latest version of the CDM Project Cycle Procedure for Programmes of Activities (PCP for PoAs version 02.0)^{3/}, as well as any other related methodological tools, guidelines and other regulatory documents adopted by the CMP or the Board.

Applus+ Certification approach was risk-based, drawing on an understanding of the risks associated with reported data and information and the controls in place to mitigate such risks. The examination includes assessment of evidences relevant to the amounts and disclosures in relation to the claimed GHG Emission Reductions for this monitoring period. The verification team has planned and performed the work to obtain the information and explanations that are considered necessary to provide sufficient evidence for the DOE to give reasonable assurance that the amount of claimed GHG Emission Reductions for this monitoring period were fairly stated.

In DOE's opinion, the Monitoring Report for the CPA meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria.

SECTION H. Certification statement

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LGAI Technological Center, S.A. (Applus+ Certification) DOE E-0032 has carried out the independent verification of the registered CDM PoA titled “*Domestic Cooking Stoves substitution programme in Mozambique*” (PoA ID: 9981) covering CPA 002 titled “*Domestic cookstoves in Maputo (Mozambique), phase II*” for the monitoring period from 01/01/2018 to 31/12/2018 (first and last day included).

As per the given above DOE’s opinion, the Monitoring Report for the CPA meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria, thereof confirms the following:

PoA title:	Domestic Cooking Stoves substitution programme in Mozambique
CDM PoA ID:	9981
CPA Title:	9981-P1-0002-CP1 titled “ <i>Domestic cookstoves in Maputo (Mozambique), phase II</i> ”
Crediting period of the verified CPA:	12/07/2016 to 11/07/2023
Approved PoA-DD:	Version 09, dated 22/09/2020
Final Version of the Monitoring Report:	Version 06 dated on 12/04/2021
Applied Methodology:	AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass” (Version 05.0)
Applicable monitoring period:	01/01/2018 to 31/12/2018 (first and last day included), 4th Monitoring Period
Claimed and certified Emission Reductions:	42,170 tCO ₂ e

The Monitoring Report for the CPA, hence, is recommended by Applus+ Certification for issuance of the claimed and certified Emission Reductions for the given monitoring period within the UNFCCC CDM.

Appendix 1. Abbreviations

Abbreviations	Full texts
Applus+ Certification	LGAI Technological Center, S.A. (Applus+ Certification) DOE E-0032
AS	Accreditation Standard
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification request
CME	Coordinating/Managing Entity
CMP	The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO2	Carbon Dioxide
CO2e	Carbon Dioxide equivalent
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EI	External Individual
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
HQ	Headquarters (Applus+ Certification)
IPCC	Intergovernmental Panel on Climate Change
IR	Internal Resource
KPT	Kitchen Performance Test
MoC	Modalities of communication
MP	Monitoring Plan
MR	Monitoring Report
OE	Outsourced Entity
PCP for PoA	Project Cycle Procedure for Programmes of Activities
PoA-DD	Programme of Activities Design Document
PRC	Post Registration Changes
PS for PoA	Project Standard for Programmes of Activities
UNFCCC	United Nations Framework Convention on Climate Change
VVS for PoA	Validation and Verification Standard for Programmes of Activities

Appendix 2. Competence of team members and technical reviewers

According to the applicable sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed an assessment team in compliance with the Contract Review and Assessment Team appointment rules in the internal Quality Management System of Applus+ Certification as well as in compliance with the applicable requirements in the Accreditation Standard.

The composition of the Assessment Team has been approved by Applus+ Certification during the Contract Review process ensuring that the required skills and capabilities are covered.

The qualification levels for Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Technical Reviewer (TR).
- Any of the above mentioned roles in training (iT, e.g. AiT for auditor in training).

The Sectoral Scope / Technical Area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team as shown below:

Name	Role	SS/TA Knowledge	Financial Expertise	Attendance to on-site visit
Mr. Pankaj Kumar	LA / TE	YES (3.1)	n/a	YES
Mr. Sukanta Das	A / TEiT	NO	n/a	YES
Mr. Agustín Calle	AiT / TEiT	NO	n/a	YES
Mr. Miguel A. Cortés	TR / TE	YES (3.1)	n/a	n/a

A brief Curriculum Vitae (CV) of the Assessment Team members is provided below:

Mr. Pankaj Kumar Mr. Pankaj Kumar worked as team leader – Bihar for South Asia Climate Proofing and Growth Development(CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-national level in India, Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO(Bihar Urban Infrastructure Development Corporation), Govt. of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE), Johannesburg, RSA as Team Leader for validation, verification. He has extensive experience in the Renewable, Waste Management and Energy Demand Scopes of UNFCCC CDM and has done more than 100 Validations and Verifications of PAs and PoAs as Team Leader, Technical Expert and Technical Reviewer, mainly in Africa (including PoAs in Mozambique) and Asia regions. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. He is also member of task force on climate change & human health, Health Department, GoB.

He is an experienced, qualified and result oriented Environment Professional having more than 14 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil, Waste

management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing.

Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India).

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|----------------------|---|
| Mr. Sukanta Das | <p>Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from InternationalSC App for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than (11) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.</p> |
| Mr. Agustín Calle | <p>Mr. Agustín Calle has a Bachelor's Degree on Environmental Sciences and Master's Degree on Environmental Control and Management in Companies.</p> <p>He has more than 9 years of experience on CDM, sustainability, implementation, outsourcing and audit of Management Systems, waste handling and renewable energies consultancy services, as well as an active participation in Spanish Normalisation Committees for sustainability standards, among other activities.</p> <p>In Applus+ Certification since 2017, being in the position of Technical Manager and Quality Manager of the DOE/VVB for CDM/VCS/GS4GG Activities to ensure quality on performances, coordinate global team worldwide, business development and maintenance of the Accreditations, as well as to manage the final process of approval and submission for all the projects for quality assurance purposes.</p> |
| Mr. Miguel A. Cortés | <p>Mr. Miguel A. Cortés holds a Bachelor's Science Degree on Civil and Environmental Engineering, being specialized on Hydric Resources.</p> <p>He has worked as CDM/VCS/GS and environmental consultant for different industries of multidisciplinary sectors world widely.</p> <p>Mr. Miguel Cortés counts with several years of GHG assessment experience, working and being qualified as Lead Auditor and Technical Reviewer for different DOEs world widely, as well as has been part of Gold Standard expert's committees.</p> <p>Furthermore, he has performed his professional GHG assessment portfolio career worldwide and focusing in Latin America, developing assessments for projects in Argentina, Mexico, Panama, Colombia and Chile, among others</p> |

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	CDM Validation and Verification Standard for Programmes of Activities version 02.0	29/11/2018	Other
2	UNFCCC	CDM Project Standard for Programmes of Activities version 02.0	29/11/2018	Other
3	UNFCCC	CDM Project Cycle Procedure for Programmes of Activities version 02.0)	29/11/2018	Other
4	UNFCCC	CDM Accreditation Standard version 07.0	01/03/2018	Other
5	UNFCCC	AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 05.0)	23/11/2012	Other
6	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities (version 08.0)	28/11/2019	Other
7	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programme of activities (version 04.0)	16/10/2015	Other
8	UNFCCC	Guideline on the application of materiality in verifications (version 02.0)	20/02/2015	Other
9	UNFCCC	CDM-PoA-MR-FORM Monitoring report form for CDM programme of activities (version 03.0)	31/05/2019	Other
10	UNFCCC	UNFCCC's list of LDCs	https://unfccc.int/topics/resilience/workstreams/national-adaptation-programmes-of-action/ldc-country-information	Other
11	CME	Registered PoA-DD version 09 (along with previous versions that undergone PRC during the process of this Verification)	22/09/2020	Other
12	CME	Registered CPA-DD version 09 (along with previous versions that undergone PRC during the process of this Verification)	03/12/2020	Other
13	Validating DOEs	Validation Reports of PoA-DD and CPA-DD	https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/6E3TWBSAG8I VRFDZNJK12L4X0CY HOM/view	Other
14	Validating DOEs	Validation Reports for PRCs in PoA and CPA	https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/6E3TWBSAG8I VRFDZNJK12L4X0CY HOM/view	Other
15	CME	Monitoring Report version 01	06/06/2019	CME

		Monitoring Report version 02 Monitoring Report version 03 Monitoring Report version 04 Monitoring Report version 05 Monitoring Report version 06	04/09/2019 02/10/2019 03/10/2019 05/03/2021 12/04/2021	
16	CME	9981-0002_Stove Selling Database 2015-2017	-	CME
17	CME	9981-0002_Usage Survey Database 2017	-	CME
18	CME	KPT reports dated 2018	-	CME
19	CME	User Agreements	-	CME
20	CME	9981-0002_ER Calculations 2018_ver04	12/04/2021	CME
21	CME	9981-0002_Ex ante ER calculations	-	CME
22	CME	Survey forms filled	-	CME
23	CME	Calibration Certificates	-	CME
24	Brouwer, R. and Falcão, M. P)	Brouwer and Falcão, 2004 (Brouwer, R. and Falcão, M. P., 2004)	-	Other

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

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

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

Table 2. CLs from this verification

CL ID	01	Section no.	E.2.1.	Date:12/08/2019
Description of CL				
<ol style="list-style-type: none"> 1) On front page of MR, it is stated that this is 4th monitoring period but during site visit, it was observed that, this is 3rd MP. CME shall clarify on correct monitoring period and make necessary amendment. 2) Batch 1 of 2 is mentioned for monitoring report no. for this monitoring period which is not clear 3) Total no. of actual CERs mentioned on front page of MR for this monitoring period is not consistent with ER sheet. 				
CME response				Date:04/09/2019
<ol style="list-style-type: none"> 1) The PoA 9981 has currently three CPAs. For all of these CPAs the same monitoring periods are applied. The already verified and issued previous monitoring periods of the PoA are as follows: <ul style="list-style-type: none"> - 1st MP 01/01/2015-11/07/2016 - 2nd MP 12/07/2016-30/11/2016 - 3rd MP 01/12/2016-31/12/2017 The current monitoring period (01/01/2018-31/12/2018) is thereafter the 4th MP and thus PD do not consider relevant to make any modifications on MR regarding the issue. PD wants also to clarify that during the 1st MP of the PoA (i.e. 01/01/2015-11/07/2016) only the CPA 9981-0001 was on-going and generating CERs. 2) During the monitoring period "01/01/2018-31/12/2018" the verification and the later request for the issuance of CERs is made for two CPAs (for CPA 9981-0002 and CPA 9981-0003). For both of these CPAs separate MRs have been prepared and thus totally two MRs (i.e. "two batches") are prepared for this MP. In the other words, the MP "01/01/2018-31/12/2018" of the PoA is described in 2 separate MRs (i.e. "2 batches"), one covering the CPA 9981-0002 and one covering CPA 9981-0003. Therefore, and in line with the previous verified MRs, it is indicated that the current MR of CPA 9981-0002 is "Batch 1 of 2". 3) The total no. of actual CERs in the front page of the MR has been corrected to be consistent with the ER spreadsheet. 				
Documentation provided by the CME				
9981-0002 MR 2018_ver02				
DOE assessment				Date:09/09/2019
<ol style="list-style-type: none"> 1) CME confirmed that current monitoring period is 4th which was cross checked with UNFCCC web site also and found to be correct. Hence, comment closed. 2) Rationale for nomenclature of MR provided by CME is acceptable and it was found that similar nomenclature adopted in previous verifications also. Justification provided is accepted and comment closed. 3) OK, Comment closed. 				

CL ID	02	Section no.	E.2.2.	Date:12/08/2019
Description of CL				
1) In sec. B.1, under para “ measures for continuous improvements of the PoA Management System, CME shall describe monthly double check process of the stove selling database by carbonsink				
CME response				Date:04/09/2019
1) The relevant paragraph in sec B.1. has been updated to be as follows: “In case of CPA 9981-0002 this has included, during the period when the cookstove selling has been on-going, monthly double checks of the stove selling database by Carbonsink (i.e. Carbonsink has reviewed the made data entries to ensure that all the necessary data, like contact details and stoves IDs, are filled in the database in correct way). During the current monitoring period no new cookstoves have been sold and thus no further checks on the selling database have been made during this monitoring period.”				
Documentation provided by the CME				
9981-0002 MR 2018_ver02				
DOE assessment				Date:09/09/2019
1) For this monitoring period, no new cookstoves sold and CME confirmed that data recorded at the time of selling of stoves again cross checked and reviewed and all key information re checked once stove selling is complete. CME has made necessary amendments in revised MR, Ver 02 dated 04/09/2019. Comment closed				

CL ID	03	Section no.	E.3.4.2 / E.3.6.1. / E.3.6.4.	Date:12/08/2019
Description of CL				
1) During site visit, verification team interviewed 22 households, out of which 3 HH's had LPG stove, 1 HH's had electric stove, 1 Household had 3-stone wood stove and household had Mbaula stove. CME shall clarify how this diversity of fuel used is managed in the calculation of emission reductions as these nos. are significant considering sample size selected.				
CME response				Date:04/09/2019
1) Based on the Usage Survey made in line with the monitoring plan of the CPA (during September – November 2017) totally 95 % of the sampled hhs were using the project stoves daily . Moreover, within these hhs around 40% stated to use contemporary additional secondary stoves (more specifically 42% within the vintage 1 hhs and 38% within the vintage 2 hhs). The stove models used as secondary stoves were found to be: charcoal stoves, gas stoves, electric stoves and wood stoves.				
<p>PP considers that the findings made during the site visit are in line with the above described results of the Usage Survey. In fact, within the sample of 22 families 5 families were found to use a secondary stove corresponding to 23% of the sample. PP wants moreover to clarify - as resulting also from the Usage Survey – that the principal cooking fuel used in the project area is charcoal and that the contemporary use of additional stoves is found to be secondary and occasional. For example, in many cases the hhs have acquired the gas or electric stove for a question of a status but in a reality, they might be lacking resources to buy gas or electricity. Moreover, the traditional way of cooking is favoring portable cookstoves rather than fixed stove models like, for example, gas or electric stoves. In consequence, PP considers that the quantity of the cooking fuels like gas, electricity and wood is irrelevant and moreover, and that there is no either any indications deriving from the made monitoring activities or otherwise reasons to assume the share of these fuels would have increased in consequence of the project activities.</p> <p>Therefore, PP considers that the made KPT (accounting the whole charcoal consumption within hhs without making a difference if the consume is made using the project stove or other charcoal stove) and Usage Surveys (used for determining the usage rate) are accounting in satisfactory level the diversity of the cookstoves and that no further additional considerations are needed to be made in this case in the ER calculations.</p>				
Documentation provided by the CME				
Not applicable				

DOE assessment			Date: 09/09/2019
<p>1) CME confirmed that observation by DOE during site visit is in line with the usage survey conducted by CME which also confirmed that 95% of the sampled households were using the project stoves daily and 40% of households had additional secondary stoves (LPG, Electric, Charcoal, 3 stone and others). Justification provided by PP that households have LPG, electric stoves but they use these stoves occasionally and primarily they use improved cook stoves only because fuel is readily available and comparatively cheaper than LPG. Verification team also interviewed households and their version corroborates explanation provided by CME. Hence, DOE conclude that, additional stoves do not have any bearing on ER calculation and secondary fuel used is negligible.</p> <p>However, in ER spread sheet, tab "ERs per device" the Cell C78 considers 48 devices operating in Vintage 1 and the Cell D78 considers 47 devices operating for Vintage 2, while the Cell E78 considers in the formula a total of 48+49 devices operating. The cells C78 and D78 are consistent with Operating Devices in Excel sheet 9981_0002_Usage Survey Database 2017 Label Data Analysis, sum of Cells E 121 to E 124 for Vintage 1 and Cells F 121 to F 124 for Vintage 2, i.e. 48 + 47. So there is an inconsistency in the calculations.</p> <p>CME shall clarify the discrepancy in usage rate value for this monitoring period, hence the Comment remains open.</p>			
CME response			Date: 02/10/2019
<p>The typo error in the formula in the cell E78 of the ER spread sheet, tab "ERs per device" has been corrected as follows: "(48+47)/106" and is now consistent with the other cells of the ER spread sheet as well as with the Excel sheet "9981_0002_Usage Survey Database 2017". CME wants to clarify that the value of the cell E78 is not used directly in the calculation formulas used for ER calculations and, therefore, the correction did not cause any changes in the calculated total ERs.</p> <p>To summarize, the correct usage rates are 91% for vintage 1 and 89% for vintage 2 as presented in the cells K121 and L121 of the spread sheet "9981_0002_Usage Survey Database 2017", tab "Data Analysis" and as described in the MR page 20.</p>			
Documentation provided by the CME			
9981-0002_ER Calculations 2018_ver02			
DOE assessment			DOE assessment
<p>CME rectified the typo error in revised ER sheet, Ver. 02 and corrected the overall usage rate of 90% for entire monitoring period. However, the value of 90% usage rate in cell E 78 of tab "ERs per device" from revised ER sheet not taken directly in the calculation formulas for calculation of emission reduction, hence verification team confirms that no change in total ER value. Amendments made in revised ER sheet are also in accordance with revised MR, Ver. 03 dated 02/10/2019. Comment closed</p>			
CL ID	04	Section no.	E.3.6.1
Date: 12/08/2019			
Description of CL			
<p>1) During site visit it was observed that one cook stove was broken and majority of the household's had traditional stoves also. CME shall clarify repercussions on ER calculation due to these issues.</p>			
CME response			Date: 04/09/2019
<p>1) Both the eventual continued use of baseline stoves as well as the "not-use" of the project stoves in the project scenario has been accounted in the ER calculations in line with the indications of the applied methodology. In fact, the project charcoal consumption used in ER calculations is based on the results of the annual KPT which measures the total fuel consumption of the households without making difference if the consumption is made using the project stove or with a baseline stove. Thus, the project charcoal consumption used in the ER calculations is, in fact, including also the eventual contemporary use of traditional baseline stoves in project scenario. Moreover, ER calculations are using, in line with the applied methodology, a usage rate deriving from biennial Usage Survey which is accounting as operational only the projects stoves used as principal daily cooking device.</p>			
Documentation provided by the CME			
NA			
DOE assessment			Date: 09/09/2019
<p>1) Explanation provided by CME is found to be appropriate as project charcoal consumption used in ER calculation derived from annual KPT which measures the total fuel consumption of the households including baseline stoves as well as project stoves. Comment closed</p>			

CL ID	05	Section no.	E.1.1.	Date:12/08/2019
Description of CL				
1) In sec.C.1, model no. stove is not consistent with model no. observed in households during site visit. 2) CME shall include description of post registration changes in Sec. C.3 of the MR				
CME response				Date:04/09/2019
1) The typo error in the name of the stove model is corrected. The correct stove model is Envirofit CH-2200. 2) The paragraphs C.3.2 and C.3.6 have been updated with the following clarification: "Post registration correction of CPA 9981-0002 are presented in PRC ref. PRC-9981-001 with effective approval date on 25 th of October 2018."				
Documentation provided by the CME				
9981-0002 MR 2018_ver02				
DOE assessment				Date:09/09/2019
1) Typo error regarding stove model no. corrected in revised MR, ver. 02 dated 04/09/2019. Comment closed. 2) Necessary changes made in sec. C.3.2 & C.3.6 of revised MR, ver. 02. Comment closed				

CL ID	06	Section no.	E.3.6.1. / E.3.6.4.	Date:12/08/2019
Description of CL				
1) During site visit it was observed by verification team that cook stoves were broken in some households, CME shall explain substitution or replacement mechanism of old/ broken stoves and its impact on CER calculation				
CME response				Date:04/09/2019
1) During this monitoring period no substitution or replacement of old/broken stoves have been made. In line with the applied methodology, in the ER calculations the "usage rate" parameter (deriving from the field monitoring) is used to discount the share of project stoves which are currently not used (for example because being broken). In fact, the ERs are accounted only for the operational project stoves i.e. for the share of project stoves which are used as principal daily cooking device based on the monitoring.				
Documentation provided by the CME				
Not applicable				
DOE assessment				Date:09/09/2019
1) Ok, justification provided found to be appropriate and can be accepted. Comment closed.				

CL ID	07	Section no.	E.3.3	Date:12/08/2019
Description of CL				
1) PP has adopted biennial monitoring of parameter and used KPT to estimate annual quantity of woody biomass used during the project activity per device which is allowed as per applied methodology of the CME able to demonstrate that the efficiency of the cook stoves does not drop significantly as compared to the initial efficiency of the new device, over a period of 2 years of typical usage. CME shall demonstrate and provide supporting evidence to demonstrate that efficiency of stove does not drop significantly.				
CME response				Date:04/09/2019
1) In line with the registered Monitoring Plan included in the CPA-DD 9981-0002 version 07 the quantity of woody biomass consumed in project scenario (i.e. parameter $B_{y,new,KPT}$) is to be monitored annually or biennially through the Kitchen Performance Test. Moreover, according the applied methodology (Footnote 12) the biennial monitoring (i.e. monitoring once every two years) may be chosen if the project proponents are able to demonstrate that the efficiency of the cookstove does not drop significantly as compared to the initial efficiency of the new device, over a time period of two years of typical usage. As the PP is has selected to make the KPT surveys annually there is no need to demonstrating that the efficiency of the cookstoves doesn't drop significantly over a time period of two years of typical use. Similarly, in line with the registered Monitoring Plan included in the CPA-DD 9981-0002 version 07 and the applied methodology (AMS-II.G, paragraph 22) the number of project devices of type i operating in year y (i.e. parameter $N_{y,i}$) has been monitored at least once every two years (biennial). Regarding this parameter the applied methodology does not indicate any further requirements for additional demonstrations.				

Documentation provided by the CME	
<i>Not applicable</i>	
DOE assessment	Date: 09/09/2019
1) CME confirmed that for this monitoring, they adopted annual monitoring survey for KPT, not biennially. Foot note 12 of applied methodology applicable only if CME adopt biennial survey. CME has made necessary correction in revised MR, Ver. 02 also. Comment closed.	

Table 3. CARs from this verification

CAR ID	01	Section no.	E.2.2	Date: 12/08/2019
Description of CAR				
1) In Sec. B.1, date of KPT training is not correct. CME is also requested to provide training records for training conducted before usage survey and KPT				
2) In sec. B.2, CME shall mention PRC approval date.				
CME response				Date: 04/09/2019
1) The date of the KPT training has been corrected in Sec. B.1. The correct training date is 19/11/2018. As a supporting document the training record is shared with the DOE.				
2) The PRC approval date has been updated in the Sec. B.2. The correct approval date is 15/07/2019.				
Documentation provided by the CME				
9981-0002 Training Record 2018				
DOE assessment				Date: 09/09/2019
1) In sec. B.1 of revised MR, ver. 02, date of training on KPT corrected. CME has provided training records and attendance sheet of the training. Comment closed				

CAR ID	02	Section no.	E.3.4.2	Date: 12/08/2019
Description of CAR				
1) In sec. E.2, value of $B_{y,new,KPT}$ for vintage 2 is not consistent with excel spread sheet				
2) For parameter, $N_{y,l}$, values mentioned for vintage 1 and 2 are 1.3412 and 2.711 respectively which is not correct				
CME response				Date: 04/09/2019
1) The value of $B_{y,new,KPT}$ for vintage 2 has been corrected in Sec. E.2. The correct value is 2.884.				
2) The use of “,” instead of “.” has been corrected within the values of parameter $N_{y,l}$ within the Sec. E.2. The correct values are 3,412 for vintage 1 and 7.711 for vintage 2.				
Documentation provided by the CME				
9981-0002 MR 2018_ver02				
DOE assessment				Date: 09/09/2019
1) The value of $B_{y,new,KPT}$ for vintage 2 has been corrected in Sec. E.2. of revised MR, Ver. 02 dated 04/09/2019. Comment closed				
2) Necessary corrections made in sec. E.2 of revised MR, ver. 02. Comment closed.				

CAR ID	03	Section no.	E.3.6.4	Date: 12/08/2019
Description of CAR				
1) In sec. F.4 and F.5, CERs achieved during this MP is not consistent with ER sheet.				
CME response				Date: 04/09/2019
1) Values indicated in Sec F.4 and F.5 have been corrected to be consistent with ER spreadsheet.				
Documentation provided by the CME				
9981-0002 MR 2018_ver02				
DOE assessment				Date: 09/09/2019

- 1) Corrections made in sec. F. 4 & F.5 of revised MR, ver. 02 and now in consistent with ER sheet.

However, in sec. F.4, total baseline emissions (50,307) is inclusive of leakage, hence after deducting leakage from total baseline emissions is not equal to the claimed ERs (42,170). Corrective action required.

CME shall also provide calculation of amount of estimated CERs (ex-ante) for this monitoring period in the CPA-DD in sec. F.5.

Hence the **Comment remains open**.

CME response	Date: 02/10/2019
<p><i>The value of Baseline Emissions in the cell B28 and the value of the Project Emissions in the cell C28 of ER spread sheet, tab "Total CERs", have been corrected. Moreover, ER spread sheet has been updated for clarity to include separate calculations for Baseline and Project emissions (please refer the rows 17 and 18 in the tab "ERs per device" and the columns L, M, Z and AA in the tab "Total CERs").</i></p> <p><i>To summarize, the determination of ER using the generic equation "ERs = Baseline emissions - Project emissions – leakage" can be written as follows: $ERs = 81,372 \text{ tCO}_2e - 35,133 \text{ tCO}_2e - 4,069 \text{ tCO}_2e = 42,170 \text{ tCO}_2e$.</i></p> <p><i>The section F.4 of the MR has been updated consequently.</i></p> <p><i>The section F.5 has been updated regarding the ex-ante estimated CERs. CME provides as a supporting document the relevant approved ex-ante ER spread sheet "9981-0002_ Ex-ante ER calculations" where it can be seen (please refer the cell K42 in the tab "Total CERs") that the ex-ante estimated ERs for the year 2018 were 25,717tCO₂e. Moreover, the usage rate which was estimated ex-ante is shown in the cell B55 of the tab "Total CERs" and the percentage of households foreseen ex-ante to buy two project stoves in the cell C41 of the tab "ERs per device".</i></p>	
Documentation provided by the CME	
9981-0002_ER Calculations 2018_ver02 9981-0002 MR 2018_ver03 9981-0002_ Ex ante ER calculations	
DOE assessment	Date: 03/10/2019
<p>CME has made necessary amendments in ER sheet and now value of baseline emissions, project emission and leakage explained explicitly in ER sheet and section F.4 of revised MR, Ver. 03 but why correction factor applied on project emission and leakage emissions also. DoE is of the opinion that it is not conservative. Please clarify.</p> <p>Calculation of ER should be simple, BE-PE-LE = net ER in but in cell F28, calculated differently.</p> <p>In sec. F.5 of revised MR, Ver.03, the value of estimated ex ante ERs mentioned as 25,717 which is not consistent with the value of 39,942 mentioned on front page of MR. CME shall provide calculation of estimation of 39,942 and if 25,717 is correct value as mentioned in sec. F.5 of MR, Ver. 03, please provide detailed explanation for difference between ex ante and actual ER value as difference is around 61%.</p>	
Comment open	
CME response	Date: 03/10/2019

- 1) *To be conservative and to account the eventual mobility of the families outside the project boundary, the CEM has applied a correction factor in the emission reduction calculations in the same way as during the previous monitoring periods. The correction factor has been set based on the study made in the project area regarding the mobility of the households as explained in the footnote 33 of the MR. Within the ER spreadsheet the correction factor is presented in the cells B22 and P22 of the tab "Total CERs".*

CME has now updated in the tab "Total CERs" the values of Baseline Emissions (in cell C28), Project Emissions (in cell C28) and Leakage (in cell D28). Now these values do not include the above described correction factor. The correction factor is now only applied to the final ERs in the cell F28. The relevant parts of the MR have been updated accordingly. Moreover, a new footnote in page 25 of the MR report has been added for clarity.

- 2) *CME has updated the calculation formula of the cell F28 as suggested by the DOE. CME wants to highlight that this modification does not affect in any way to the value of the cell F28 as earlier CME had just used another procedure to calculate exactly same issue. In fact, the applied AMS-II.G methodology guides to calculate ERs directly through the savings of woody biomass ($B_{y,savings}$) as shown in the ER calculation equation in the page 24 of the MR.*
- 3) *The correct value of ex-ante estimated ERs is 25,717 tCO₂e. The front page of the MR has been now corrected consequently. The confusion regarding the quantity of the ex-ante ERs within the MR was caused because there has been made a PRC for the CPA and erroneously the MR was originally referring to the first registered CPA-DD version (Version 02.1) and not the latest approved CPA-DD (Version 07).*

CME has updated the Section F.6 of the MR explain more in detailed way the difference between ex ante and actual ER value. To summarize, the difference between the ex ante and ex post ERs is caused by three reasons:

- *The calculation method used for ex ante and ex post ERs (please refer the section B.4.1 of the CPA-DD version 07 for more details).*
- *The share of households who bought two project stoves (10%) was lower than estimated ex ante (77%).*
- *The ex ante estimated usage rate (60%) was more conservative than the real monitored usage rate (91% for vintage 1 and 89% for vintage 2).*

The main reason for difference between the ERs estimated ex ante and ex post is the conservative estimation regarding the usage rate selected to be used in ex ante calculations. This statement can be easily double checked by DOE by replacing the usage rate values in the cells B21 and P21 in tab "Total CERs" of ER spread sheet with the ex ante estimated usage rate (i.e. 60%).

Documentation provided by the CME

9981-0002_ER Calculations 2018_ver03

9981-0002 MR 2018_ver04

DOE assessment	Date: 04/10/2019
<p>1) CME has clarified that due to eventual mobility of the families outside the project boundary, conservatively a correction factor has been applied in emission reduction calculations which is consistent with previous monitoring periods as well but in response to DOE's comment, CME has removed correction factor from project emission and leakage emission and now factor applied on total emission value only which is conservative and can be accepted. Necessary amendments made by CME cross checked with revised ER sheet, ver. 03 and MR, Ver. 04 and found in line. Comment closed.</p> <p>2) CME has also simplified formula for calculation of net emission reductions in revised ER sheet and DOE confirmed that approach for calculation of baseline emission, project emission and leakage are in accordance with applied methodology. Comment closed.</p> <p>3) CME confirmed that ex ante ERs (25,717) mentioned in sec. F.5 are correct and typo error on front page of MR corrected to make it consistent with sec. F.5 of revised MR, Ver. 04. CME clarified that ex ante ERs are based on latest approved CPA-DD, Ver. 07. DOE cross checked the latest updated CPA-DD, Ver. 07 as PRC was requested for the CPA and CPA approved by UNFCCC and found the value in line.</p> <p>CME has also revised explanation in sec. F.6 of revised MR, Ver. 04 to justify difference between the ex ante and ex post ER value. DOE conclude that the main reasons for increase in ex post ERs are different calculation method of ER in approved CPA-DD, Ver. 07 and very conservative usage rate (60%) considered ex ante in approved CPA-DD, Ver. 07, ex ante usage rate (60%) is much lower than ex post cumulative usage rate of 90% for this monitoring period. Explanation provided by CME for difference in ex ante and ex post ERs are in line with applied methodology and found to be appropriate. Comment closed.</p>	

CAR ID	04	Section no.	E.3.5.	Date:	12/08/2019
Description of CAR					
CME shall provide records of calibration for the instruments (Weighing scale) used in the KPT, Training records for the project monitoring staff and agreements made with GIZ					
CME response					Date: 04/09/2019
The training records and the calibration report of 2018 are shared with the DOE. As described in the MR during this monitoring no services of GIZ have been used for KPT (or for other activities) and thus there are no agreements made with GIZ.					
Documentation provided by the CME					
9981-0002 Training Record 2018 9981-0002 Calibration Report 2018					
DOE assessment					Date: 09/09/2019
CME has provided training records along with attendance sheet of training conducted for KPT and usage survey. Comment closed					

Table 4. FARs from this verification

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

Appendix 5. Data and parameters fixed ex-ante and monitored

Net calorific value of the non-renewable woody biomass that is substituted($NCV_{biomass}$, TJ/t)	CME has selected IPCC default value i.e., 0.015 TJ/t. It is used for calculation of project emissions or actual net GHG removals by sinks, fixed at PoA level and for entire crediting period of the CPA. The verification team confirms that IPCC default value for wood fuel is 0.015 TJ/tonne can be used for net calorific value of the non-renewable woody biomass that is substituted($NCV_{biomass}$) which is in line with the applied methodology(AMS-II.G, paragraph 11)
Emission factor for the substitution of non renewable woody biomass by similar consumers ($EF_{projected_fossilfuel}$ tCO ₂ /TJ)	CME has selected AMS-II.G default value i.e., 81.6 tCO ₂ /TJ. It is used for calculation of project emissions or actual net GHG removals by sinks, fixed at PoA level and for entire crediting period of the CPA. The verification team confirms that the value of 81.6 tCO ₂ /TJ is to be used as emission factor for the substitution of nonrenewable woody biomass by similar consumers($EF_{projected_fossilfuel}$) is in line with the applied methodology (AMSII.G, paragraph 11)
Quantity of woody biomass used in the absence of the project activity in tonnes per device (B_{old} , t/device/year)	CME has applied value 6.601 for 2018 based on local survey. It is used for calculation of project emissions or actual net GHG removals by sinks, fixed at PoA level and for entire crediting period of the CPA. B_{old} will be multiplied by a net to gross adjustment factor (LAF) to account for leakages. Based on the Baseline KPT the average baseline charcoal consumption per device is to be 973.2 kg of charcoal/device/year. The verification team confirms that the value applied is in accordance to paragraph 14 of the methodology, the quantity of woody biomass (B_{old}) is determined by using a credible local conversion factor determined from literature. Here the conversion factor of 7.14 is chosen based on the study of Brouwer and Falcão, 2004 (Brouwer, R. and Falcão, M. P., 2004 ^{24/} . Wood fuel consumption in Maputo, Mozambique. Biomass and Bioenergy. Volume 27, Issue 3, September 2004, Pages 233–245. Available at www.sciencedirect.com)
Leakage adjustment factor to account for leakages (LAF, Fraction)	CME has applied AMS-II.G default value i.e., 0.95. It is used for calculation of leakage, fixed at PoA level and for entire crediting period of the CPA. The verification team confirms that the value applied is in accordance to paragraph AMS-II.G (option c of the paragraph 29). B_{old} will be multiplied by a net to gross adjustment factor to account for leakages. In this case surveys are not required.
Correction factor =0.995	The verification team accepted that the impact of the possible transfer of the households (and the consequent mobility of the project stoves) outside the project boundary. Hence accepted the correction factor of 0.995 as it leads to conservative ERs.
Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass($f_{NRB,y}$, Fraction)	CME has applied the calculations for the ex-ante country specific fraction of non-renewable woody biomass (f_{NRB}) value using requirements in "TOOL30: Methodological tool: Calculation of the fraction of non-renewable biomass", version 02.0, resulting in a value of 0.91. It is used for calculation of project emissions or actual net GHG removals by sinks and the same is found acceptable by the DOE.
Annual quantity of woody biomass used during the project activity in tonnes per device, determined	CME has applied a measured value based on Kitchen Performance Test Report of 2017 & 2018. It is used for calculation of project emissions or actual net GHG removals by sinks.

<p>through a survey $(B_{y,new,KPT}, t/\text{device/year}) = 2.773 \text{ tonnes}$ of charcoal per device per year for vintage 1 and 2.884 tonnes of charcoal per device per year for vintage 2. (Source: KPT 2018) Note: Initial annual KPT was conducted in 17th October 2016. As per the CPA-DD, the next KPT happened in 17th October 2017. But to some practical reasons, it was found started only on 20/11/2017 (more than one year). CME considered KPT 2018 (KPT 2018 is more conservative than KPT 2017) for the whole monitoring period.</p>	<p>The verification team confirms that the value</p> <ul style="list-style-type: none"> • In the usage survey (conducted biennially) a sample size of 106 families for this monitoring period was set by PP as calculated in the separate Excel spreadsheet, in line with the applied methodology, is at least 95/10 (a 95% confidence interval and a 10% margin of error). The required confidence/precision level was met and reached • In KPT, (conducted annually) a sample size of 48 families for this monitoring period was set by CME as calculated in the separate Excel spreadsheet, in line with the applied methodology. <p>The CME has done a vintage-wise sampling calculation, determining a sample size of 13.27 for vintage 1 and 17.83 for vintage 2 using the standard formulae. However, as the sample size calculation returns a value of less than 30 samples for each vintage, in line with the Standard for Sampling and Surveys version 08.0 Para 13, the CME has applied Student's t distribution, being the parameter of interest $B_{y,new,KPT}$, achieving a final result of 21 samples for the vintage 1 and 27 for the vintage 2.</p> <p>Note that in KPT the statistical analysis found 2 outliers which were excluded from the further analysis (<i>i.e.</i> the initial sample was 48 but only 46 were included in the determination of the mean fuel consume).</p> <p>The required precision of least 90/10 (a 90% confidence interval and a 10% margin of error) is applied in line with the applied methodology and the required confidence/precision level was met.</p> <ul style="list-style-type: none"> • The KPT is conducted by trained monitoring personal 																																							
<p>Number of project devices of type i operating in year y ($N_{y,i}$, Number)</p>	<p>CME has applied a measured value</p> <table border="1" data-bbox="635 1234 1439 1711"> <thead> <tr> <th>Month, Year</th><th>Vintage 1: No. of operational devices</th><th>Vintage 2: No. of operational devices</th></tr> </thead> <tbody> <tr><td>Jan, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Feb, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>March, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>April, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>May, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>June, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>July, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Aug, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Sept, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Oct, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Nov, 2018</td><td>3412</td><td>7711</td></tr> <tr><td>Dec, 2018</td><td>3412</td><td>7711</td></tr> </tbody> </table> <p>The verification team reviewed the Project database records (Stove Selling Database 2015-2016 & 2017 and Usage Survey Database 2017) and confirms that, 91% in Vintage-1 and 89% in Vintage-2 are considered operational. It is used for calculation of project emissions or actual net GHG removals by sinks and shall remain within the limit of 180 GWh_{th} for type II CDM project activities.</p>	Month, Year	Vintage 1: No. of operational devices	Vintage 2: No. of operational devices	Jan, 2018	3412	7711	Feb, 2018	3412	7711	March, 2018	3412	7711	April, 2018	3412	7711	May, 2018	3412	7711	June, 2018	3412	7711	July, 2018	3412	7711	Aug, 2018	3412	7711	Sept, 2018	3412	7711	Oct, 2018	3412	7711	Nov, 2018	3412	7711	Dec, 2018	3412	7711
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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		