

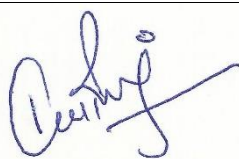


# Verification and certification report form for CDM programme of activities

(version 01.0)

Complete this form in accordance with the "Attachment. Instructions for filling out the verification and certification report form for CDM programme of activities" at the end of this form.

## VERIFICATION AND CERTIFICATION REPORT

<b>Title of the programme of activities (PoA)</b>	Côte d'Ivoire and Cameroon Efficient Cookstoves Program	
<b>UNFCCC reference number of the PoA</b>	8696	
<b>Version number(s) of the PoA-DD(s) applicable to this report</b>	1.10	
<b>Version number of the verification and certification report</b>	Version 01.1	
<b>Completion date of the verification and certification report</b>	16/11/2016	
<b>Monitoring period number</b>	First monitoring period	
<b>Duration of this monitoring period</b>	01/07/2013 – 02/03/2016 (including both days)	
<b>Number and version number of the monitoring report to which this report applies</b>	Number of monitoring report: 1 Version of monitoring report: 07	
<b>Coordinating/managing entity (CME)</b>	Envirofit International Ltd.	
<b>Host Party(ies)</b>	Host Party(ies) of the PoA	Is this a host Party to a CPA covered in this report?(yes/no)
	Cameroon	Yes
	Côte d'Ivoire	No
<b>Sectoral scope(s)</b>	3: Energy Demand	
<b>Selected methodology(ies)</b>	AMS-II.G. Version 4.0: Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass	
<b>Selected standardized baseline(s)</b>	Not applicable	
<b>Total estimated GHG emission reductions or net GHG removals for this monitoring period in the included CPA(s) covered in this report</b>	56,260 tCO <sub>2</sub> e	
<b>Total certified GHG emission reductions or net GHG removals for this monitoring period for the included CPA(s) covered in this report</b>	5,420 tCO <sub>2</sub> e	
<b>Name of DOE</b>	Earthood Services Private Limited	
<b>Name, position and signature of the approver of the verification and certification report</b>	 Kaviraj Singh Managing Director	

**SECTION A. Executive summary**

The registered Programme of Activity (PoA) involves distribution of improved cook stoves (ICS) in the regions of Cameroon and Côte d'Ivoire, replacing the traditional three-stone fired cook stove. The GHG emission reductions are achieved by enhancement of efficiency of the cooking process and reduction in wood fuel usage.

Envirofit International Ltd. is the CME of the PoA which focusses on the replacement of traditional low-efficiency cookstoves with the ICS. Along with being the CME, Envirofit International Ltd. is also the CPA implementer and technology supplier. The cook stoves disseminated through this programme replace the prevailing inefficient three-stone fire or equivalent and improve thermal energy transfer to pots, hence saving fuel and lowering greenhouse gas emissions.

If these cook stoves would not have been distributed, then the emissions from less-efficient cookstoves and hence high consumption of fuel wood would have continued leading to greater GHG emissions. Thus, implementation of PoA leads to reduced GHG emission which are measurable, verifiable and reportable.

**Scope of verification:**

The verification is an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the DOE. The verification includes the implementation and operation of the PoA as set out in the PoA-DD & CPA-DD viz., 8696-0003 in the monitoring period.

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period by the CMEs and is based on the following:

- (i) The approved methodology AMS II.G version 04 "Energy efficiency measures in thermal applications of non-renewable biomass", applied in the POA-DD & CPA-DDs
- (ii) The registered PoA-DD & CPA-DD and monitoring plan
- (iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (iv) The CDM Validation and Verification Standard (VVS)
- (v) The CDM Project Standard (PS) and Project Cycle Procedure (PCP)
- (vi) Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation were assessed in accordance with the rules defined by UNFCCC, as appropriate to the PoA. The verification is not meant to provide any consulting or recommendations to the CME/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

**Verification Process:**

The verification process is conducted as per internal CDM Quality Manual, which includes the following steps;

- a) Contract with CME and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
- b) Completeness check of Monitoring Report
- c) Publication of Monitoring Report at UNFCCC website
- d) Desk review (refer Section C.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit (including sampling approach (refer Section C.4 of this report) to be applied)
- e) On site audit (refer Section C.2 of this report) (physical implementation and interview with relevant stakeholders) by verification team consistent of Team Leader and all Technical Experts, as a minimum
- f) Follow up activities e.g., interviews (refer Section C.3 of this report)
- g) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section C.5 of this report)
- h) Independent technical review (refer Section D of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
- i) Reporting and closure of TR comments/findings (refer Section C.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section E and F of this report).

- j) Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance, as appropriate.

**Verification Conclusion:**

Based on the outcome of the verification process of the registered PoA “Côte d’Ivoire and Cameroon Efficient Cookstoves Program” and its one CPA (8696-0003) for the monitoring period 01/07/2013 – 02/03/2016 (including both dates) we confirm that the implementation of referenced registered PoA and CPA is in compliance with the applicable CDM rules and regulations as stated in the Monitoring Report (final) Version 07 dated 12/11/2016. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodologies AMS II.G Version 04, and the monitoring plan contained in the revised PoA-DD.

Earthood Services Private Limited is able to certify that the emission reductions from the registered CDM PoA UN#8696 “Côte d’Ivoire and Cameroon Efficient Cookstoves Program” in Cameroon during the period 01/07/2013 – 02/03/2016 (including both days) amount to 5,420 tCO<sub>2</sub>e. Therefore, this is being submitted for request for issuance, as per UNFCCC procedures.

**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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	IR	Deka	Nayan Jyoti	Central office	Y	Y	Y	Y
2.	Verifier & Methodological expert	IR	Gupta	Anshika	Central office	Y	N	N	Y
3.	Technical Expert	IR	Deka	Nayan Jyoti	Central office	Y	Y	Y	Y
4.	Local Expert	EI	Nchacob	Neville	Central office	Y	N	N	N

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Singh	Kaviraj	Central office
2.	Expert to TR	IR	Gautam	Ashok Kumar	Central office
3.	Approver	IR	Singh	Kaviraj	Central office

**SECTION C. Means of verification**
**C.1. Desk review**

The desk review involves;

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;

- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

The list of documents reviewed during the verification is provided under appendix 3 of this report.

## C.2. On-site inspection

Duration of on-site inspection: 01/08/2016 to 04/08/2016				
No.	Activity performed on-site	Site location	Date	Team member
5.	Opening Meeting: Introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit including venue for closing meeting and any concerns from CME.	Cameroon	01/08/2016	Nayan Jyoti Deka
6.	Implementation and operation of PoA (project boundary, technology, project equipment, monitoring and metering equipment) as per registered PDD/previous verification.	Cameroon	01/08/2016	Nayan Jyoti Deka
7.	Management and monitoring procedures followed at project site.	Cameroon	01/08/2016	Nayan Jyoti Deka
8.	Management and operational system: Documentation, allocation of responsibilities, qualification and training, data recording & archiving, internal audit and management review and emergency procedures.	Cameroon	01/08/2016	Nayan Jyoti Deka
9.	Physical inspection of the PoA: Site visit and interview of monitoring personnel.	Cameroon	01/08/2016	Nayan Jyoti Deka
10.	End of Day 1	Cameroon	01/08/2016	Nayan Jyoti Deka
11.	Site visit continued on 2 <sup>nd</sup> Day	Cameroon	02/08/2016	Nayan Jyoti Deka
12.	End of Day 2	Cameroon	02/08/2016	Nayan Jyoti Deka
13.	Site visit continued on 3 <sup>rd</sup> Day	Cameroon	03/08/2016	Nayan Jyoti Deka
14.	End of Day 3	Cameroon	03/08/2016	Nayan Jyoti Deka
15.	Verification checklist: compliance of monitoring procedures followed at project site with registered PoA DD and monitoring methodology.	Cameroon	04/08/2016	Nayan Jyoti Deka
16.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.	Cameroon	04/08/2016	Nayan Jyoti Deka
17.	Review of emission reduction (ER) calculations in accordance with applied methodology and relevant tools.	Cameroon	04/08/2016	Nayan Jyoti Deka
18.	Compilation of the audit findings.	Cameroon	04/08/2016	Nayan Jyoti Deka
19.	Closing Meeting: Submission of the audit findings to the client and agreement on the issues raised and agreement on timelines.	Cameroon	04/08/2016	Nayan Jyoti Deka

## C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Isabu	Elijah	Carbon Africa Ltd	01/08/2016 to 04/08/2016	Implementation of CPAs, monitoring activities, record keeping, Sampling approach, results and ER calculations	Nayan Jyoti Deka
2	Sondo	Venan	CEFEMAC	01/08/2016 to 04/08/2016	Sampling	Nayan Jyoti Deka
3	Tebo	Tebo.B.	CEFEMAC	01/08/2016 to 04/08/2016	Monitoring survey	Nayan Jyoti Deka
4	Njumbe	Mathias	CEFEMAC	01/08/2016 to 04/08/2016	Monitoring survey, Database record keeping procedure	Nayan Jyoti Deka
5	Mbom	Richard	CEFEMAC	01/08/2016 to 04/08/2016	WBT process & procedures	Nayan Jyoti Deka
6	Lohia	Rohit	Envirofit	06/08/2016	Sales database management, Sampling approach, WBT results, Monitoring, applied methodology and ER calculations,	Nayan Jyoti Deka
7	Foncha	Glory Ngum	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
8	Joelle	Mpei	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
9	Aoudou	Saadatou	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
10	Ali	Sani	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
11	Ameline	Ngamele	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
12	Odilia	Teke	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
13	Angelina	Mbaku	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
14	Glory	Koni	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
15	-	Doren	ICS user(MS#1)	01/08/2016 to	DOE Field Survey	Nayan Jyoti Deka

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				04/08/2016		
16	Limbi	Escell	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
17	Nyuymengka	Yvonne	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
18	Asobo	Begalema jannette	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
19	Nafisatou	Kongkeki	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
20	-	Akokoesau	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
21	Yula	Veyeh Bennet	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
22	Kernyuy	Veronica	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
23	Ndingwan	Patience	ICS user(MS#1)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka
24	Ndonwia	Hycenta	ICS user(MS#2)	01/08/2016 to 04/08/2016	DOE Field Survey	Nayan Jyoti Deka

### C.4. Sampling approach

#### CME's sampling approach:

A single sampling plan in accordance with AMS-II.G. version 4.0 was carried out for the specific case CPA covered in this monitoring period. The CME has applied Simple Random Sampling in the CPA for different monitoring parameters as per validated PoA DD and CPA DDs. 90/10 confidence precision was mainly applied by CME in the sampling, since 90/10 confidence applies for annual monitoring which is appropriate given the length of the monitoring period for the CPA, which is more than a year and thus CME has carried out annual monitoring by having two annual monitoring sessions. An annual monitoring criteria was followed and separate sampling and monitoring exercises were carried out for the first and second year of the monitoring period. The monitoring period covered the period between and including 03/03/2014 to 02/03/2016. During this period two monitoring sessions (MS#01 & MS#02) were carried out covering 03/03/2014 – 02/03/2015 (MS#1) and 03/03/2015 – 02/03/2016 (MS#2) in order to fulfil the annual monitoring requirement. The emission reductions were calculated and summed up to achieve the total emission reductions for the CPA under this monitoring period. Also, PP has followed age categorization in the sampling approach, so in MS#01 PP had 4 age categories but in MS#02 only 2 categories were chosen and carbon credits for remaining two categories are not being claimed that is why MS#01 and MS#02 have different stove population size.

The detailed sampling approach undertaken by CME is duly explained under Section G.3 of monitoring report.

#### DOE's sampling approach:

DOE has considered para 31 (a) & 31 (c) of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 5" for determining the sampling size to be visited by DOE.

As per para 31 of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 5," A DOE may select a different sample size than the one indicated in paragraph 28, either by choosing a different value for the consumer risk and producer risk (e.g. 20% for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply:

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- (a) *The estimated volume of annual emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 tCO<sub>2</sub>e; or*
- (b) *The security conditions in the project region prevents inspection of many samples (e.g. conflict zones); or*
- (c) *The project activity or the PoA is located in a least developed country or a host Party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified.*

In case of the current verification, the estimated annual emission reduction of the PoA being verified is less than 100,000 tCO<sub>2</sub> thus meeting the requirement of para 31(a). Secondly, the PoA is located in a host country i.e. Cameroon, where the number of CDM registered projects are less than 10, thus also meeting the requirement of para 31(c). The UNFCCC website has been checked to confirm the number of registered project which is found to be below 10 i.e. only 5 CDM projects are registered till date. Hence DOE has considered 8 samples from each monitoring session for the current verification.

The verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 05.0:

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that can be considered acceptable. This is referred to as the AQL (Acceptable Quality Level): 0.5% was considered in this verification.
- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that would be considered unacceptable. This is the UQL (Unacceptable Quality Level): 20% was considered in this verification.
- The producer risk of 10% and consumer risk of 20% was considered.

Considering the above input values, a sample size of 8 was required as per Table 1 in the referred Standard for each monitoring session. Accordingly, Acceptance number (c) thus determined for the sample size is 0. A sample size of 8 meets the criteria.

Accordingly, the verification team together has verified 9 samples for each monitoring session (i.e.9 for MS#01 & 9 for MS#02) for the CPA (taking one additional sample for each monitoring session in order to meet minimum requirement of 8 samples for each monitoring sessions) to verify the parameters  $B_{\text{residual}}$ , (Quantity of woody biomass that is still consumed by the customers using their baseline cook stoves),  $N_{\text{op\_stoves}}$  (Number of distributed cook stoves still operating) during site visit and observed that the sampling survey results of the CME for all the ICSs checked were consistent with DOE's field survey results. In all the verification team, visited 18 households for both the monitoring sessions combined.

For other parameter viz.  $\eta_{\text{new}}$  (Efficiency of the device being deployed as part of the project activity in year y), the verification team has checked from the document/evidence submitted by the CME.

### C.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
<b>General</b>			
Compliance of the monitoring report with the monitoring report form	CL#01		
Remaining forward action requests from validation and/or previous verification			
Specific-case CPA(s) considered for verification and covered in this report			
<b>Programme of activities</b>			
Compliance of the programme implementation with the registered PoA-DD			
Implementation and operation of the management system			
Post-registration changes			
<ul style="list-style-type: none"><li>• Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline</li></ul>			
<ul style="list-style-type: none"><li>• Corrections</li></ul>			

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<ul style="list-style-type: none"> <li>Inclusion of a monitoring plan in a registered PoA-DD (including its generic CPA-DD(s))</li> </ul>			
<ul style="list-style-type: none"> <li>Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline</li> </ul>			
<ul style="list-style-type: none"> <li>Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic CPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA</li> </ul>			
<ul style="list-style-type: none"> <li>Types of changes specific to afforestation and reforestation activities</li> </ul>			
<b>Component project activity(ies)</b>			
Compliance of the CPA implementation with the included CPA design document			
Post-registration changes			
<ul style="list-style-type: none"> <li>Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline</li> </ul>			
<ul style="list-style-type: none"> <li>Corrections</li> </ul>			
<ul style="list-style-type: none"> <li>Changes to the start date of the crediting period</li> </ul>			
<ul style="list-style-type: none"> <li>Inclusion of a monitoring plan to an included CPA-DD</li> </ul>			
<ul style="list-style-type: none"> <li>Permanent changes to the monitoring plan as described in the included CPA-DD, applied methodology, or applied standardized baseline</li> </ul>			
<ul style="list-style-type: none"> <li>Changes to the programme design of the included CPA-DD</li> </ul>			
<ul style="list-style-type: none"> <li>Types of changes specific to afforestation and reforestation component project activities</li> </ul>			
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline			
Compliance of monitoring activities with the registered monitoring plan		CAR#03	
<ul style="list-style-type: none"> <li>Data and parameters fixed ex ante or at renewal of crediting period</li> </ul>			
<ul style="list-style-type: none"> <li>Data and parameters monitored</li> </ul>			
<ul style="list-style-type: none"> <li>Implementation of sampling plan</li> </ul>			
Compliance with the calibration frequency requirements for measuring instruments		CAR#02	
Assessment of data and calculation of emission reductions or net removals			
<ul style="list-style-type: none"> <li>Calculation of baseline GHG emissions or baseline net GHG removals by sinks</li> </ul>			
<ul style="list-style-type: none"> <li>Calculation of project GHG emissions or actual net GHG removals by sinks</li> </ul>			
<ul style="list-style-type: none"> <li>Calculation of leakage GHG emissions</li> </ul>			
<ul style="list-style-type: none"> <li>Summary of calculation of GHG emission reductions or net GHG removals by sinks</li> </ul>			
<ul style="list-style-type: none"> <li>Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case CPA</li> </ul>			
<ul style="list-style-type: none"> <li>Remarks on difference from estimated value in registered PDD</li> </ul>			
Others (please specify)			
<b>Total</b>	1	2	



**SECTION D. Internal quality control**

A draft verification report prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm whether all the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion were reached in an objective manner that complies with the applicable CDM rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process additional findings may be identified or the closed out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized by the Managing Director on behalf of Earthood Services Private Limited.

**SECTION E. Verification opinion**

Earthood Services Private Limited (ESPL), contracted by Envirofit International Ltd. (the CME for the PoA), has performed the first independent verification of the emission reductions for the registered CDM PoA 8696 "Côte d'Ivoire and Cameroon Efficient Cookstoves Program" in Cameroon for the monitoring period 1/07/2013 – 2/03/2016 (both days included) as reported in the Monitoring Report (public) Version 04 dated 05/07/2016. The CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

This verification report is for the CPA (8696-0003), which was included at the UNFCCC webpage at the end of the current monitoring period.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by UNFCCC and complies with the instructions to follow as per para 406 and 407 of CDM VVS Version 9.

The verification activities were conducted in accordance with ESPL's CDM Quality Manual System as per the steps indicated under Section A of this report. The verification process has resulted in conclusion that the included CPA conforms to the registered PoA DD as well as comply with applicable CDM rules and regulations and in accordance with applied monitoring methodology, AMS II.G Version 04. There were no issues that were raised as FAR during validation, which required further attention from the verification team.

As a result, it is confirmed that the emission reductions from the CDM PoA 8696 "Côte d'Ivoire and Cameroon Efficient Cookstoves Program" are correctly reported in the Monitoring Report (final) Version 07 dated 12/11/2016 and corresponding ER sheet for the monitoring period 1/07/2013 – 2/03/2016 (including both days) amounting to 5,420 tCO<sub>2</sub>e. Therefore, this will be submitted as part of request for issuance as per CDM PCP Version 9.

**SECTION F. Certification statement**

The verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 1/07/2013 – 2/03/2016 are fairly stated in the Monitoring Report (final) Version 07 dated 12/11/2016.

ESPL, based on outcome of verification activities, certify in writing that, during the monitoring period 01/07/2013 – 02/03/2016 (including both days), the registered CDM PoA "Côte d'Ivoire and Cameroon Efficient Cookstoves Program" and the included CDM CPA (8696-0003) in the registered CDM PoA achieved the verified amount of 5,420 tCO<sub>2</sub>e reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CPAs.

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The verified amount of emission reductions is stated below as per each CPAs and as per commitment period;

CPAs (included in this request)	Emission Reductions (Amount) in this monitoring period (in tCO <sub>2</sub> e)	
	Up to 31/12/2012 (1 <sup>st</sup> commitment period)	01/01/2013 onwards
8696-0003	0	5,420
Total	0	5,420

**SECTION G. Verification findings - General****G.1. Compliance of the monitoring report with the monitoring report form**

<b>Means of verification</b>	The verification team has compared the monitoring report with the applicable monitoring report form.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	Monitoring report is prepared using the correct template i.e. CDM-PoA-MR-FORM Version 01.0. The verification team confirms that the monitoring report has been appropriately prepared using the applicable monitoring report form, and that all sections are completed.

**G.2. Remaining forward action requests from validation and/or previous verification**

This is first verification of the project activity. There were no FARs during validation of PoA and inclusion of CPA as well which needs to be closed during this monitoring period.

**G.3. Specific-case CPA(s) considered for verification and covered in this report**

Reference number of the specific-case CPA included in the PoA as of the end of this monitoring period	Is the specific-case CPA considered for this verification? (yes/no)	Version number of the registered PoA-DD to which the specific-case CPA complies with	Confirmation that a request for issuance including the specific-case CPA has been published for the previous monitoring period (Y/N)
8696-0003	Yes	Version 1.10, dated 05/12/2012	Yes
8696-0002	No	Version 1.10, dated 05/12/2012	N/A
8696-0001	No	Version 1.10, dated 05/12/2012	N/A

**SECTION H. Verification findings – Programme of activities****H.1. Compliance of the programme implementation with the registered programme design document**

<b>Means of verification</b>	<p>The registered PoA involves the promotion, distribution and sale of improved cook stoves (ICS) in regions of Cameroon and Côte d'Ivoire. The overall responsibility of implementation and operation is with CME, which was also evident during the site visit. This was found to be consistent with PoA-DD/01/. This monitoring period includes the implementation and monitoring of one CPA (8696-0003) as part of registered PoA. There are total 3 CPAs (8696-0001 to 8696-0003) implemented at the end date of current monitoring period.</p> <p>The implementation of the CPA (included in this request), as referenced above, are within the geographical boundary of the PoA DD, which constitutes the physical boundary as well.</p> <p>The type of ICS distributed under the CPA is of type M5000 which was inline to the registered PoA-DD/01/ and CPA-DD/05/. The efficiency of the ICS is 29.7% with a</p>
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	<p>life span of 5 years.</p> <p>Technical specifications of the ICS was verified through the details provided by supplier /15/, and found to be consistent with information given in monitoring report.</p> <p>The verification team has confirmed that the number of ICS deployed under the current CPA is under the limit as set by the CME during the inclusion of each CPA and thus CPA remains under the threshold of 180 GWh thermal energy savings/year. The total number of ICS deployed are 3711 which is well within the maximum limit for the ICS distribution which is 15,776 as per the regd CPA DD.</p> <table border="1" data-bbox="451 488 1287 584"> <tr> <td>Quantity of ICS Sold / Disseminated during the current verification</td><td>3711</td></tr> <tr> <td>Maximum Estimated Qty ICSs in CPA</td><td>15,776</td></tr> </table> <p>The verification team is able to confirm that the quantity, specification and target group of the ICS is consistent with the PoA DD /01/ and respective CPA DD. Further, based on the review of ICS distribution database in ER sheet/6/, physical observations and interview conducted during the site visit, the verification team found that:</p> <ul style="list-style-type: none"> <li>• The CPA is implemented within the boundary of the PoA as described in the PoA-DD.</li> <li>• The CME is same as that mentioned in the PoA-DD</li> <li>• The implementation and operation of the project activity has been conducted in accordance with the description contained in the PoA-DD and included CPA-DD.</li> <li>• All physical features of the CPA proposed in the included CPA-DD are in place</li> <li>• The project participants/CPA implementer has operated the CPA as per the included CPA-DD.</li> </ul> <p>The verification team has visited the households during site visit. It was observed that each ICS was assigned a unique identification number, which takes care that no double counting happens. The unique identification number on each ICS, personal information of ICS owners and commissioning date of ICS was cross checked with the Sales database in ER sheet/6/. The operation of the ICS was confirmed through interviews of owners/representatives (of ICS) during the site visit.</p> <p>The emission reductions being claimed during this monitoring period are lesser than the estimated emission reductions in the included CPA-DD. The estimated CERs were 56,260 tCO<sub>2</sub>e whereas achieved ERs are 5,420 tCO<sub>2</sub>e.</p> <p>The verification team considers the project description of the project contained in the PoA-DD is complete and accurate. The PoA-DD complies with the relevant methodology, tools, forms and guidance at the time of PoA submission for registration. The monitoring report was compared and verified against the description provided in the PoA-DD and found to be correct.</p>	Quantity of ICS Sold / Disseminated during the current verification	3711	Maximum Estimated Qty ICSs in CPA	15,776
Quantity of ICS Sold / Disseminated during the current verification	3711				
Maximum Estimated Qty ICSs in CPA	15,776				
<b>Findings</b>	CL#01 was raised and closed. Please refer Appendix 4 for further details.				
<b>Conclusion</b>	<p>a) The verification team confirms that the physical features (technology/type of ICS) of the implementation were in accordance with the PoA DD.</p> <p>b) The actual operation is in line to respective CPA DD, which is further explained under Section I.1, J.1 and K.1 of this report.</p> <p>c) The number of installations in the CPA for the type of ICS were either equal to or within the maximum quantity estimated in the CPA-DD. The actual CERs for CPA were lower for comparable monitoring period. No information with regard to data and variables was identified that may surpass the estimated quantity of ERs in the CPA DD.</p>				

**H.2. Implementation and operation of the management system**

<b>Means of verification</b>	<p>Based on the interview of CME representatives and monitoring team during the site visit, it is confirmed that the CME has organized an appropriate management and operational system for monitoring and reporting.</p> <p>Envirofit International Ltd. is CME for the PoA and responsible for inclusion of CPAs in the PoA.</p> <p>CME records the unique identification number, location, and installation date of each ICS in each CPA, helps to identify, locate and verify any or all of the ICS installations in particular CPA.</p> <p>CME is responsible for QA/QC of the data, analysis and reporting into the monitoring report. For survey data, a third party monitoring team has been hired by the CME consisting of trained monitoring staff, who conducted the surveys and WBTs. The monitoring manager at the CME is responsible for QA/QC of the data, analysis and reporting into the monitoring report /18/.</p>
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The verification team assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system. The roles and responsibilities data collection transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in the MR /04/. The verification team confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.

**H.3. Post-registration changes****H.3.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline**

No deviations have been approved by the Board for this monitoring period or to be submitted with the request for issuance.

**H.3.2. Corrections**

Not applicable

**H.3.3. Inclusion of a monitoring plan in a registered PoA-DD (including its generic CPA-DD(s))**

Not applicable

**H.3.4. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline**

Not applicable

**H.3.5. Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic CPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA**

Not applicable

**H.3.6. Types of changes specific to afforestation and reforestation activities**

Not applicable

**SECTION I. Verification findings – Component project activity(ies)****I.1. Compliance of the CPA implementation with the included CPA design document**

<b>Means of verification</b>	CPA (8696-0003) described in this section targets the promotion, distribution and sale of ICS/Improved Cook Stoves of make M5000, only model of ICS implemented in this CPA till date. Envirofit International Ltd. is the CPA implementer for the implementation of CPA.	
	CPA Ref. #	8696-0003
	Inclusion date of CPA under current verification	03/03/2014
	Location	Cameroon
	Product Type	ICS
	ICS Model	M5000
	Quantity Sold / Disseminated	3711
	Maximum Estimated Qty ICSs in CPA	15,776
	ICS sales start date	05/12/2013
	Estimated CERs (comparable period)	56,260 tCO <sub>2</sub> e
	Actual CERs from the ICS Type	5,420 tCO <sub>2</sub> e
ICS were distributed in Cameroon, which is consistent with the description given in the included CPA-DD. By the end of current monitoring period a total of 3,711 cook stoves were disseminated under CPA ,which is within estimated quantity of 15,776 ICSs as per CPA DD. It has been checked by the verification team that the CPA is way below the threshold of 180 GWh/year (thermal).		
<b>Findings</b>	CAR#03 was raised and closed. Please refer Appendix 4 for further details.	
<b>Conclusion</b>	a) The verification team is of the opinion that physical features of the CPAs have been implemented in accordance with the CPA-DD. b) No specific monitoring equipment had to be installed according to the monitoring plan. c) It is also confirmed, through the physical site visit and review of the supporting documentation that physical features of the component CPAs have been implemented in accordance with the CPA-DD. d) The CPAs were also found to be completely operational in line with the CPA-DD. e) The information provided in the relevant sections of the monitoring report are appropriately describe the implementation and operational status of the PoA.	

**I.2. Post-registration changes****I.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

Not applicable

**I.2.2. Corrections**

Not applicable

**I.2.3. Changes to the start date of the crediting period**

Not applicable

**I.2.4. Inclusion of a monitoring plan to an included CPA-DD**

Not applicable

**I.2.5. Permanent changes to the monitoring plan as described in the included CPA-DD, applied methodology, or applied standardized baseline**

Not applicable

**I.2.6. Changes to the programme design of the included CPA-DD**

Not applicable

**I.2.7. Types of changes specific to afforestation and reforestation component project activities**

Not applicable

**I.3. Compliance of monitoring plan with the monitoring methodology including applicable tool and standardized baseline**

<b>Means of verification</b>	The monitoring plan as contained in respective CPA-DD was reviewed against the monitoring requirements of the applied methodology AMS-II.G version 04 /03/ as well as PoA-DD with reference to the technology involved. Based on this review it was found that the monitoring plan contained in the CPA-DD includes all the required parameters to be monitored in the context of the CPA design and description and allows proper determination of emission reductions in accordance with PoA-DD and applied methodology AMS-II.G version 04 /03/.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The monitoring plan is in accordance with the approved methodology, AMS-II.G version 04 /04/, that is included in each respective CPA-DDs.

**I.4. Compliance of monitoring activities with the registered monitoring plan****I.4.1. Data and parameters fixed ex ante or at renewal of crediting period**

**Estimate of average annual consumption of woody biomass per appliance in baseline,  $M_{\text{woody\_biomass,app}}$  , tonne/year**

<b>Means of verification</b>	The value considered for this monitoring period is 4.1427 tonne/year which was cross-checked with PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD. The values applied for ER calculations in the relevant CPAs are correct and justified.

**Maximum number of operating cook stoves in the SSC-CPA,  $N_y$  , Number**

<b>Means of verification</b>	The value considered for this monitoring period is 15,776 which was cross-checked with PoA-DD/01/ and CPA-DD/05/. It was found to be consistent.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD..

**Efficiency of the system being replaced,  $\eta_{\text{old}}$  , Fraction**

<b>Means of verification</b>	The value considered for this monitoring period is 0.1 which was cross-checked with applied methodology/03/, PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD. The values applied for ER calculations in the relevant CPAs are correct and justified.

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Fraction of woody biomass saved by the project activity in year,  $y$ , that can be established as non-renewable biomass,  $f_{NRB,y}$ , Fraction

<b>Means of verification</b>	The value considered for this monitoring period is 0.70 which was cross-checked with PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD. The values applied for ER calculations in the relevant CPAs are correct and justified.

Net calorific value of the non-renewable woody biomass that is substituted,  $NCV_{biomass}$ , TJ/tonne

<b>Means of verification</b>	The value considered for this monitoring period is 0.015 which was cross-checked with source of information (IPCC guidelines for National Greenhouse Gas Inventories/14/), PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD. The values applied for ER calculations in the relevant CPAs are correct and justified.

Emission factor for the substitution of non-renewable woody biomass by similar consumers,  $EF_{projected\ fossilfuel}$ , tCO<sub>2</sub>/TJ

<b>Means of verification</b>	The value considered for this monitoring period is 81.6 which was cross-checked with source of information (IPCC guidelines for National Greenhouse Gas Inventories/14/), PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DD. The values applied for ER calculations in the relevant CPAs are correct and justified.

Net gross adjustment factor to account for leakages,  $Leakage_{adj}$ , Fraction

<b>Means of verification</b>	The value considered for this monitoring period is 0.95 which was cross-checked with, applied methodology/03/, PoA-DD/01/ and CPA-DD/05/. It was found to be consistent. It was correctly used in ER sheet as well.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The values in the Monitoring Report /04/ and corresponding Emission Reduction Spreadsheet /06/ are consistent with the PoA-DD and CPA-DDs. The values applied for ER calculations in the relevant CPAs are correct and justified.

### 1.4.2. Data and parameters monitored

Number of distributed cook stoves still operating,  $N_{op\_stoves,y}$ , Number

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Measured Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring and reporting frequency are in line to registered CDM PoA DD/1/, CPA DD/5/ and applied methodology.
	Monitoring equipment	Survey questionnaires
	Calibration frequency /interval:	Not applicable
	How were the values in the	The values in the MR have been verified from the Monitoring Survey results/6/.

	monitoring report verified?	<table><tr><th>Monitoring period 1</th><th>Size of Population</th><th>Percentage of stoves still in operation</th><th>Number of stoves in operation</th></tr><tr><td>Monitoring session 1</td><td>3,711</td><td>87.76%</td><td>3,257</td></tr><tr><td>Monitoring session 2</td><td>3,658</td><td>79.52%</td><td>2,909</td></tr></table>				Monitoring period 1	Size of Population	Percentage of stoves still in operation	Number of stoves in operation	Monitoring session 1	3,711	87.76%	3,257	Monitoring session 2	3,658	79.52%	2,909
	Monitoring period 1	Size of Population	Percentage of stoves still in operation	Number of stoves in operation													
	Monitoring session 1	3,711	87.76%	3,257													
	Monitoring session 2	3,658	79.52%	2,909													
	If applicable, has the reported data been cross-checked with other available data?	<p>The survey results, assumptions and sales records were checked by the verification team and were found acceptable. The results are reproducible in the corresponding ER sheet/6/ of final Monitoring Report/4/.</p> <p>The verification team randomly selected 18 samples (9 samples for each monitoring period i.e. MS#1 &amp; MS#2) for DOE's field survey and via on-site interview found out that all the ICS which are picked up for sampling are installed at the household and are in working condition, which was consistent with the CME's sample survey result.</p>															
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	QA/QC procedures were found to be appropriate and reliable.																
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not applicable																
Findings	CAR#02 was raised and closed. Please refer Appendix 4 for further details.																
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.																

**Efficiency of the device being deployed as part of the project activity in year y,  $\eta_{new,y}$ , Fraction**

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Measured Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring and reporting frequency are in line to registered CDM PoA DD/1/, CPA DD/5/ and applied methodology.
	Monitoring equipment	The WBT tests/21/ were conducted by third party and undertaken following a simplified version of WBT protocol 4.2.3 /13/ by an experienced party. The PoA DD or CPA DDs do not prescribe any specific monitoring equipment but weighing scale and thermometer were required and



		<p>used to conduct WBT.</p> <p>The details of the equipment used by the third party are mentioned below -</p> <table border="1" data-bbox="742 324 1428 537"> <thead> <tr> <th>Equipment</th> </tr> </thead> <tbody> <tr> <td>Omegatte HH308 Mini Thermometer for measuring temperature of water during test</td> </tr> <tr> <td>Bracknell Scale Balance for measuring weight of fuel consumed during test (max 12 lb = 6kg, d= 0.0005 lb = 0.0002kg)</td> </tr> </tbody> </table>	Equipment	Omegatte HH308 Mini Thermometer for measuring temperature of water during test	Bracknell Scale Balance for measuring weight of fuel consumed during test (max 12 lb = 6kg, d= 0.0005 lb = 0.0002kg)																					
	Equipment																									
	Omegatte HH308 Mini Thermometer for measuring temperature of water during test																									
Bracknell Scale Balance for measuring weight of fuel consumed during test (max 12 lb = 6kg, d= 0.0005 lb = 0.0002kg)																										
Calibration frequency /interval:	Not applicable																									
How were the values in the monitoring report verified?	<p>The Water boiling test report/21/ provided by PP has been checked.</p> <p>The value of the parameter is mentioned below as per age class</p> <table border="1" data-bbox="742 833 1428 1115"> <thead> <tr> <th>Stove model</th> <th>Age Class</th> <th>Number of stoves in the vintage</th> <th>Monitored Efficiency (session#1)</th> <th>Monitored Efficiency (session #2)</th> </tr> </thead> <tbody> <tr> <td>M5000</td> <td>2012</td> <td>33</td> <td>20.10%</td> <td>-</td> </tr> <tr> <td>M5000</td> <td>2013</td> <td>2,408</td> <td>21.10%</td> <td>20.37%</td> </tr> <tr> <td>M5000</td> <td>2014</td> <td>1,250</td> <td>20.22%</td> <td>20.56%</td> </tr> <tr> <td>M5000</td> <td>2015</td> <td>20</td> <td>22.96%</td> <td>-</td> </tr> </tbody> </table> <p>It is noteworthy that for the first monitoring session, a sample of stoves from the four vintages (2012, 2013, 2014 and 2015) based on the years of distribution was taken and subjected to water boiling tests to determine the thermal efficiency of the stoves. The results from the stove tests were averaged and used as the efficiencies of the vintages.</p> <p>For the second monitoring session, two vintages (2013 and 2014 only) were taken into account after it was found that the number of stoves in other age class (i.e. 33 in 2012 and 20 in 2015) made less than 1% of the total stove population and was not economical to monitor and claim emission reductions for the stoves distributed in these age classes. For this reason the CME shall therefore not be claiming emissions from stoves distributed in 2012 and 2015 in monitoring session #2.</p>	Stove model	Age Class	Number of stoves in the vintage	Monitored Efficiency (session#1)	Monitored Efficiency (session #2)	M5000	2012	33	20.10%	-	M5000	2013	2,408	21.10%	20.37%	M5000	2014	1,250	20.22%	20.56%	M5000	2015	20	22.96%	-
Stove model	Age Class	Number of stoves in the vintage	Monitored Efficiency (session#1)	Monitored Efficiency (session #2)																						
M5000	2012	33	20.10%	-																						
M5000	2013	2,408	21.10%	20.37%																						
M5000	2014	1,250	20.22%	20.56%																						
M5000	2015	20	22.96%	-																						
If applicable, has the reported data been cross-checked with other available data?	<p>The test results, assumptions and sales records were checked by the verification team and were found acceptable. The results are reproducible in the corresponding ER sheet/6/ of final Monitoring Report/4/.</p> <p>The verification team has checked all the stove efficiency test (WBT) results and found out the efficiency of the ICS are consistent with the CME's and actual WBT results and sample survey result as reported in the final MR and corresponding ER spreadsheet.</p>																									

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	QA/QC procedures were found to be appropriate and reliable.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not applicable
<b>Findings</b>	CAR#02 was raised and closed. Please refer Appendix 4 for further details.	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

**Quantity of woody biomass that is still consumed by the customers using their baseline cook stoves,  $B_{\text{residual}}$ , tonne**

Means of verification	Criteria/Requirements	Assessment/Observation						
	Measuring /Reading /Recording frequency	Annually						
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes						
	Monitoring equipment	Survey questionnaire						
	Calibration frequency /interval:	Not applicable						
	How were the values in the monitoring report verified?	<p>The values in the MR have been verified from the survey questionnaire/20/. The survey questionnaire are based on the interviews of selected sample households in which the ICS are implemented and functioning.</p> <table><tr><th>Monitoring session</th><th>Value</th></tr><tr><td>Monitoring session #1</td><td>1.96</td></tr><tr><td>Monitoring session #2</td><td>1.91</td></tr></table> <p>The parameter <math>B_{\text{residual},y}</math> was calculated by taking the ratio of meals cooked using the traditional stove after the receipt of the ICS against the meals cooked using the traditional stove before the receipt of the ICS, and then multiplied by <math>M_{\text{woody\_biomass,app}}</math> (kg/year) which was established ex-ante.</p>	Monitoring session	Value	Monitoring session #1	1.96	Monitoring session #2	1.91
	Monitoring session	Value						
Monitoring session #1	1.96							
Monitoring session #2	1.91							
If applicable, has the reported data been cross-checked with other available data?	<p>The survey results, assumptions and sales records were checked by the verification team and were found acceptable. The results are reproducible in the corresponding ER sheet/6/ of final Monitoring Report/4/.</p> <p>The verification team randomly selected 18 samples (9</p>							

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		samples for each monitoring session) for DOE's field survey and via on-site interview found out the Quantity of woody biomass that is still consumed by the customers using their baseline cook stoves, which was consistent with the CME's sample survey result.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	QA/QC procedures were found to be appropriate and reliable.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not applicable
<b>Findings</b>	CAR#02 was raised and closed. Please refer Appendix 4 for further details.	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

### I.4.3. Implementation of sampling plan

<b>Means of verification</b>	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the revised approved PoA DD /1/ and CPA DD /5/.</p> <p>The monitoring period covered the period between and including 03/03/2014 to 02/03/2016. During this period two monitoring sessions were carried out covering 03/03/2014 – 02/03/2015 and 03/03/2015 – 02/03/2016 in order to fulfil the annual monitoring requirement. The emission reductions were calculated and summed up to achieve the total emission reductions for the CPA under this monitoring period.</p> <p>A single sampling plan was carried out in the CPA covered in this monitoring period.</p> <p><b>a) Description of implemented sampling design;</b></p> <p>The sampling procedure and calculation of achieved emission reductions was carried out separately for each of the two monitoring sessions covered in this monitoring period.</p> <p><u>Data to be collected and sampling approach</u></p> <p>As per the monitoring plan, the concerned monitoring parameters were <math>N_{op\_stoves}</math>, <math>n_{new/age}</math> and <math>B_{residual}</math>.</p> <p>An annual monitoring criteria was followed and separate sampling and monitoring exercises were carried out for the first and second year of the monitoring period.</p> <p>For the parameter <math>n_{new/age}</math> the stoves samples were collected on the basis of four stove vintages based on the distribution year i.e. 2012, 2013, 2014 and 2015. The 2012 and 2015 vintages were not included in the monitoring during the second monitoring session after it was found that the number of stoves in these age class (i.e. 33 in 2012 and 20 in 2015) made less than 1% of the total stove population and was not economical to monitor and claim emission reductions for the stoves distributed in these age classes.</p> <p>The stoves samples thermal efficiency results were averaged per vintage and emission reductions calculated per vintage.</p> <p>For the first monitoring session the sample size was calculated based on the considerations mentioned in Table below.</p> <p><b>Table 1: Monitoring Session 1 sample size calculation parameters</b></p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Description</th><th>Method used to collect data</th><th>Precision target</th><th>Age-Class consideration</th></tr> </thead> </table>				Parameter	Description	Method used to collect data	Precision target	Age-Class consideration
Parameter	Description	Method used to collect data	Precision target	Age-Class consideration					

N <sub>op_stoves</sub>	Number of distributed cook stoves actually operating	Visual inspection	10%	Samples were drawn from the entire population regardless of the age-class
B <sub>residual</sub>	Quantity of woody biomass that is still consumed by the customers using their baseline cook stove	Users interview	10%	Samples were drawn in regardless of the age class
n <sub>new/age</sub>	Efficiency of stoves by age class / Specific fuel consumption or fuel consumption rate of the system deployed as a part of a specific age class	Water Boiling Test	10%	Stoves were grouped in terms of vintages and sampling done

For the second monitoring session the sample size was calculated based on the considerations in Table below.

**Table 2: Monitoring Session 2 sample size calculation parameters**

Parameter	Description	Method used to collect data	Precision target	Age-Class consideration
N <sub>op_stoves</sub>	Number of distributed cook stoves actually operating	Visual inspection	10%	Samples were drawn from the entire population regardless of the age-class
B <sub>residual</sub>	Quantity of woody biomass that is still consumed by the customers using their baseline cook stove	Users interview	10%	Samples were drawn in regardless of the age class
n <sub>new/age</sub>	Efficiency of stoves by age class / Specific fuel consumption or fuel consumption rate of the system deployed as a part of a specific age class	Water Boiling Test	10%	Stoves were grouped in terms of vintages and sampling done

The population was considered homogenous for N<sub>op\_stoves</sub>, and B<sub>residual</sub> and random sampling was applied based on the following:

- The end-users of the CPA were all households;
- The stoves distributed use the same technology;
- The geographical coverage of the stoves was within the same country;
- The stove model distributed was the same

For n<sub>new/age</sub> the population included only one stove model in the CPA and was deemed homogenous in terms of:

- Power output;
- Certified thermal efficiency; and
- Fuel used

However as per the CPA-DD the population was deemed heterogeneous based on age class. Thus, the M5000 stove population was categorized into various age class (based on year of sale) and random sampling was applied in each age class.

Target population and Sample frames

The target population for this CPA were end-users who had received the stoves and who

could be identified through the following:

- Project stove's serial number;
- Customer's name; and
- Contact details / User's address

A total stove population of 3,711 stoves distributed between 2012 and 2015 were considered in the first monitoring session. For the second monitoring session, stoves considered were only those distributed in the years 2013 and 2014 i.e. only total of 3658 stoves were considered for this second monitoring session. This was due to the fact that the stoves distributed in 2012 and 2015 made less than 1% of the total stove population and was not economical to monitor and claim emission reductions for the stoves distributed in 2012 and 2015. For this reason, the CME shall therefore not be claiming emissions from stoves distributed in the year 2012 and the year 2015 in the second monitoring session. The sample frame for various parameters is as shown in Table A and B below.

**Table 3A: Sampling frame for monitoring session 1 and monitoring session 2 for  $N_{op\_stoves}$ , and  $B_{residual}$**

Sample frame	Target population	
	Monitoring session 1	Monitoring session 2
$N_{op\_stoves}$	3711	3658
$B_{residual}$	3711	3658

**Table 3B: Sampling frame for monitoring session 1 and monitoring session 2 for  $n_{new/age}$**

Sample frame (Vintage)	Target population	
	Monitoring session 1	Monitoring session 2
2012	33	-
2013	2,408	2,408
2014	1,250	1,250
2015	20	-
<b>TOTAL</b>	<b>3,711</b>	<b>3,658</b>

Sample sizes calculated for the different parameters in the two monitoring sessions are as shown in the table below. Refer ER calculator for more details on calculation of sample size for each parameter. The expected parameter values (mean, standard deviation and proportion) were determined based on project developer's knowledge and experience as per para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities, Version 05.0 available at:

In case the sample size calculations returned a value of less than 30 for a mean value parameter, based on the Standard: *Sampling and surveys for CDM project activities and programme of activities version 05.0 paragraph 13* which states that '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.' Therefore, student t-distribution was applied to determine the final sample size for the two monitoring sessions.

**Table 4: Sample sizes calculated for monitoring session 1 and monitoring session 2**

Parameter	Sample size	
	Monitoring session 1	Monitoring session 2
$N_{op\_stoves}$	81 (oversampled by 20% to cover for non-respondents) number of samples actually monitored = 98	58 (oversampled by 20% and an additional buffer to cover for non-respondents and to meet the required precision) number of samples actually monitored = 61

B <sub>residual</sub>	13 number of samples actually monitored = 76			13 number of samples actually monitored = 42		
n <sub>new/age</sub>	Vintage	Calculated Sample size	Samples monitored	Vintage	Calculated Sample size	Samples monitored
	2012	5	5	2013	9	9
	2013	5	5	2014	9	9
	2014	5	5			
	2015	5	5			

Based on the project's developer past experience in monitoring of similar projects, additional samples were covered during surveys (more than the calculated sample size). This was supposed to cover the reliability of 90/10 as required for annual monitoring.

**b) Collected data**

The data collected during the two monitoring exercises were N<sub>op\_stoves</sub>, n<sub>new/age</sub> and B<sub>residual</sub>. For B<sub>residual</sub> and N<sub>op\_stoves</sub> the data was collected through interviews and physical inspection of the stoves. Additional survey samples were covered as mentioned above to meet the desired precision / confidence levels. Testing for n<sub>new/age</sub> was done in a laboratory by carrying out water boiling tests on the stoves that were part of the selected samples in the respective monitoring sessions.

**c) Analysis of the collected data;**

Following the survey and water boiling tests carried out on the sampled stoves in the two monitoring sessions, the results are discussed below:

**Table 5: Summary of Results for monitoring session 1**

Parameter		Valid responses	Survey/Test results	Precision attained	Final results	Comments
B <sub>residual</sub>		76	1.96 tonnes	5.14%	1.96	Precision attained so value taken as it is
N <sub>op_stoves</sub>		98	87.76%	6.12%	87.76%	Precision attained so value taken as it is
n <sub>new/age</sub>						
Stove Vintage	2012	5	20.10%	4.49%	20.10%	Precision attained so value taken as it is
	2013	5	21.10%	7.76%	21.10%	Precision attained so value taken as it is
	2014	5	20.22%	9.80%	20.22%	Precision attained so value taken as it is
	2015	5	22.96%	8.61%	22.96%	Precision attained so value taken as it is

**Table 6: Summary of results from monitoring session 2**

Parameter	Valid responses	Survey/Test results	Precision attained	Final results	Comments
B <sub>residual</sub>	42	1.91 tonnes	5.39%	1.91	Precision attained so value taken as it is
N <sub>op_stoves</sub>	61	80.33%	10.34%	79.52%	Precision not attained so emission reductions have been discounted by three times the missed precision points which is based on

the the guidelines on Sampling and surveys for CDM project activities and programmes of activities  
Version 03.0  
Appendix 2.  
Paragraph 32 and 38.

**n<sub>new/age</sub>**

Stove Vintage	2013	9	20.37%	4.04%	20.37%	Precision attained so value taken as it is
	2014	9	20.56%	6.70%	20.56%	Precision attained so value taken as it is

**d) Demonstration of whether the required confidence/precision level has been met;**

For the different parameters, the precision achieved varied. The tables below show the precision achieved by the various parameters in the monitoring sessions. In the event that the precision target was not met, based on the Standard: *Sampling and surveys for CDM project activities and programme of activities version 05.0 paragraph 17 (b) (i) b.*, the parameter values were discounted three times the missed precision points. The calculation of the precision is also checked in the emission reduction calculation spreadsheet.

**Table 7: Precision attained for the different parameters in monitoring session 1**

Parameter	Precision attained	Precision achieved	Result	Is the discounting of parameter value / lower bound applied?
N <sub>op_stoves</sub>	6.12%	Yes	87.76%	No
B <sub>residual</sub>	5.14%	Yes	1.96 tonnes	No
<b>n<sub>new/age</sub></b>				
2012	4.49%	Yes	20.10%	No
2013	7.76%	Yes	21.10%	No
2014	9.80%	Yes	20.22%	No
2015	8.61%	Yes	22.96%	No

**Table 8: Precision attained for the different parameters in monitoring session 2**

Parameter	Precision attained	Precision achieved	Result	Is the discounting of parameter value / lower bound applied?
N <sub>op_stoves</sub>	10.34%	No	80.33%	Yes. Discounted value 79.52%
B <sub>residual</sub>	5.39%	Yes	1.91 tonnes	No
<b>n<sub>new/age</sub></b>				
2013	4.04%	Yes	20.37%	No
2014	6.70%	Yes	20.56%	No

The samples were randomly selected using Simple Random Sampling. The samples selected for **B<sub>residual</sub>**, **N<sub>op\_stoves</sub>** and **n<sub>new/age</sub>** for WBT (to calculate efficiency) were randomly drawn. Under Simple Random Sampling, the entire target population has an equal chance of being selected, thus the samples selected were deemed to be representative of population.



	In the same manner, all parameters of interest are included in the ER spread sheet. These were checked for the input values as well as formula applied and were found consistent. The reliability (demonstration of precision achieved after the survey results) is depicted in the ER sheet /6/ corresponding to final Monitoring Report /04/, which were also found correct. Based on the verified results the verification team found that the required precision is met in all the cases and therefore the survey results /24, 25, 26/ were directly used in the calculation of ERs.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The verification team confirmed that the sampling plan and the parameter values are in accordance with the monitoring plan provided in PoA DD /01/.

### 1.5. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	<p>It is noteworthy that No monitoring equipment are required to monitor the parameters, as verified through the registered monitoring plan as outline in the CPA-DD and registered PoA-DD. The monitored data was collected and surveyed done by a third party "CEFEMAC (Centre for Environmental Management and Change)". CEFEMAC is having a good experience in monitoring cookstove projects in Cameroon &amp; other African countries. Since the data was provided by a third party and PP was not involved in survey test for WBT &amp; cookstove usages, thus no monitoring equipment was used by the PP and thus no need of calibration.</p> <p>However, DOE has checked the calibration certificates/16/ of the third party CEFEMAC and found that equipment used during the survey are duly calibrated.</p> <p>Prior to carrying out the WBT the equipment were calibrated by the third party as provided in detail below Details of the calibration of the equipment are as provided below for the two monitoring sessions -</p> <p><u>Monitoring session 1</u> Equipment: Brecknell counting scale Model: B140 Serial no: 0514000008 Capacity: 6kg*0.0002kg/12lb*0.0005 lb Accuracy: +/- 0.0002 kg / +/- 0.0005 lb Calibration date: 13th May 2015, valid till – 12<sup>th</sup> May 2016 Calibration carried out by The University of Bamenda</p> <p>Equipment: Mini thermometer Model: Omegatte HH308 Serial no. 140400157 Capacity range :200°C ~ 1370°C / 328°F~249°F Accuracy: +/- 0.3% reading +1°C / +/- 0.3% reading +2°F Calibration date: 13th May 2015, valid till – 12<sup>th</sup> May 2016 Calibration carried out by The University of Bamenda</p> <p><u>Monitoring session 2</u> Equipment: Brecknell counting scale Model: B140 Serial no: 0514000008 Capacity: 6kg*0.0002kg / 12lb*0.0005 lb Accuracy: +/- 0.0002 kg / +/- 0.0005 lb Calibration date: 2th May 2016, valid till – 1<sup>st</sup> May 2017 Calibration carried out by The University of Bamenda</p> <p>Equipment: Mini thermometer Model: Omegatte HH308 Serial no. 140400157 Capacity range :200°C ~ 1370°C / 328°F~249°F Accuracy: +/- 0.3% reading +1°C / +/- 0.3% reading +2°F Calibration date: 2th May 2016, valid till – 1<sup>st</sup> May 2017</p>
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	Calibration carried out by The University of Bamenda
<b>Findings</b>	CAR#02 was raised and closed. Please refer Appendix 4 for further details.
<b>Conclusion</b>	The verification team confirm that CME applied good practice by contracting a reputed third party for data collection & sampling survey and the equipment's used by the third party for sample surveyed are duly calibrated.

## I.6. Assessment of data and calculation of emission reductions or net removals

### I.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

<b>Means of verification</b>	<p>The verification team verified that</p> <ol style="list-style-type: none"> <li>A complete set of data for the monitoring period was available for the monitoring period and the verification of each monitoring parameter is elaborated under Section I.4.2 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /06/ of final Monitoring Report /04/.</li> <li>The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section I.4.2 of this report. .</li> <li>The calculations of baseline emissions as presented in the corresponding ER calculations sheet /06/ of final Monitoring Report /04/ were checked and found to be consistent with the formulae and methods described in the registered monitoring plan of each relevant CPA-DD, PoA-DD and the applied methodology.</li> <li>All assumptions used in the emission calculations were found appropriate and therefore justified</li> <li>Appropriate emission factors, IPCC default factors and other reference values have been correctly applied. This has also been elaborated under Section I.4.1 of this report.</li> <li>No standardized baseline was prescribed in the PoA DD and therefore it has not been applied.</li> <li>There is no pro-rate approach (para 402(g) of CDM VVS Version 09) was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.</li> </ol> <p>The following equations were used to determine the baseline emissions as provided in the monitoring report /04/ and applied in the corresponding ER calculations sheets /06/. The expressions used were found consistent with the revised PoA-DD, CPA-DDs and the applied methodology AMS-II.G, version 04:</p> <p>Total ER reductions achieved for any CPA is calculated using the following expressions:</p> $ER_y = B_{y,savings} * f_{NRB,y} * NCV_{biomass} * EF_{projected\_fossilfuel}$ <p>It has been verified that the corresponding ER calculations sheet /06/ to the final Monitoring Report /04/ has considered the number of stoves as per the vintage and accordingly the efficiency of such stoves in the ER calculation for relevant CPA.</p>
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	<p>The verification team confirms that</p> <ol style="list-style-type: none"> <li>The complete data was available and is duly reported;</li> <li>As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section I.4.2 of this report);</li> <li>Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed;</li> <li>Appropriate emission factors, IPCC default factors and other reference values were correctly applied.</li> <li>There is no pro-rate approach (para 403(e) of CDM VVS Version 09) was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.</li> </ol>

### I.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

<b>Means of verification</b>	The PoA DD, CPA DD and applied monitoring methodology does not prescribe any
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	project emissions to be considered. The onsite visit and project design also did not reveal any potential source to be considered in this regard.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	No project emissions were required to be calculated.

**I.6.3. Calculation of leakage GHG emissions**

<b>Means of verification</b>	The PoA DD, CPA DD and applied monitoring methodology does not prescribe any leakage emissions to be considered. The onsite visit and project design also did not reveal any potential source to be considered in this regard. However, the leakage adjustment factor that is required to adjust the baseline emissions has been duly accounted in baseline calculations.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	No additional leakage emissions (other than what is already considered in baseline calculations) were required in accordance with the methodology AMS-II.G, version 04 /03/.

**I.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks**

<b>Means of verification</b>	As discussed in the above sections, the entire emission reductions from the PoA were based on baseline emissions. The calculations presented in this regard in the final monitoring report /04/ and corresponding ER calculations sheet /06/ were found appropriate and complying with the provisions prescribed in the registered monitoring plan of respective CPA-DD, PoA-DD and applied methodology. The verification team confirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found acceptable.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section I.4.2 of this report); c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed; d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied. e) There is no pro-rata approach (para 403(e) of CDM VVS Version 09) was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol. The total number of ERs achieved during the current monitoring period (for ICS only) is 5,420 tCO <sub>2</sub> e.

Specific-case CPA reference number	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e)		
				Results achieved in the period up to 31 December 2012	Results achieved in the period from 1 January 2013 onwards	Results achieved in the entire monitoring period
8696-0003	5,420	0	0	0	5,420	5,420
<b>Total</b>	5,420	0	0	0	5,420	5,420

**I.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case CPA**

<b>Means of verification</b>	As verified from the final Monitoring Report /04/ and corresponding ER calculations sheet /06/, the actual emission reductions achieved by each CPA that is included in the current monitoring period were found less than the estimated quantity in the CPA-DD for the comparable period.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The actual emission reductions achieved in specific CPA are not higher than the estimated quantity of ERs in the respective CPA-DD. It was accepted by the verification team.

<b>Specific-case CPA reference number</b>	<b>Value estimated in ex ante calculation in the included specific-case CPA-DD(s)</b>	<b>Actual values achieved by the specific-case CPA(s) during this monitoring period</b>
8696-0003	56,260	5,420
<b>Total</b>	56,260	5,420

**I.6.6. Remarks on difference from estimated value in registered PDD**

<b>Means of verification</b>	The achieved emission reduction are way less than the estimated ones. Thus no further explanation was sought by assessment team and thereby accepted.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The achieved ERs are less than the estimated amount.

## Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Level
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating or Managing Entity
CPA	Component Project Activity
CP	Crediting period
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	Executive Board
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
ICS	Improved Cook Stove
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
RMP	Registered monitoring plan
TA	Technical Area (with in Sectoral Scope)
TR	Technical Reviewer
VVS	Validation and Verification Standard
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Level
WBT	Water Boiling Test

## Appendix 2. Competence of team members and technical reviewers

Competence Statement			
<b>Name</b>	Nayan Jyoti Deka		
<b>Country</b>	India		
<b>Education</b>	M.Tech. (Energy Technology), Tezpur University		
<b>Experience</b>	8 Years +		
<b>Field</b>	Climate Change & Energy Management		
Approved Roles			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-III.H., AMS-I.C., ACM0006, ACM0002		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	YES		
<b>TA Expert (1.1, 1.2, 3.1, 13.1)</b>	YES		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	08/09/2016
<b>Approved by</b>	Ashok Kumar Gautam	<b>Date</b>	08/09/2016

Competence Statement			
<b>Name</b>	Neville Tabi Nchacob		
<b>Country</b>	Cameroon		
<b>Education</b>	M.Sc. (Environmental & Resource Management)		
<b>Experience</b>	3 years		
<b>Field</b>	Environment & waste management		
Approved Roles			
<b>Team Leader</b>	NO		
<b>Validator</b>	NO		
<b>Verifier</b>	NO		
<b>Methodology Expert</b>	NO		
<b>Local expert</b>	YES (Cameroon)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert</b>	NO		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	08/09/2016
<b>Approved by</b>	Ashok Kumar Gautam	<b>Date</b>	08/09/2016

<b>Name</b>	Anshika Gupta		
<b>Country</b>	India		
<b>Education</b>	M.Sc. (Climate Science & Policy), TERI University		
<b>Experience</b>	2 Year +		

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<b>Field</b>	Climate Change		
<b>Approved Roles</b>			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.A., AMS-II.G., ACM0002, AMS-III.A.V.		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert (1.2, 3.1)</b>	NO		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	08/09/2016
<b>Approved by</b>	Ashok Kumar Gautam	<b>Date</b>	08/09/2016

<b>Competence Statement</b>			
<b>Name</b>	Kaviraj Singh		
<b>Country</b>	India		
<b>Education</b>	Ph.D. (Environmental Engineering), IIT Delhi M.Phil. (Energy & Environmental), DAVV Indore		
<b>Experience</b>	9 Years +		
<b>Field</b>	Climate Change & Environment		
<b>Approved Roles</b>			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	YES		
<b>TA Expert (1.1)</b>	YES		
<b>TA Expert (1.2)</b>	YES		
<b>TA Expert (13.1)</b>	YES		
<b>TA Expert (13.2)</b>	YES		
<b>TA Expert (15.2)</b>	YES		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	08/09/2016
<b>Approved by</b>	Ashok Gautam	<b>Date</b>	08/09/2016

<b>Competence Statement</b>			
<b>Name</b>	Ashok Gautam		
<b>Country</b>	India		
<b>Education</b>	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)		
<b>Experience</b>	14 Years +		
<b>Field</b>	Energy, Climate Change & Environment		
<b>Approved Roles</b>			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		

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<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-I.A., AMS-I.C. AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0006		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	YES		
<b>TA Expert (1.1)</b>	YES		
<b>TA Expert (1.2)</b>	YES		
<b>TA Expert (3.1)</b>	YES		
<b>TA Expert (13.1)</b>	YES		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	08/09/2016
<b>Approved by</b>	Kaviraj Singh	<b>Date</b>	08/09/2016

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	CME	Registered PoA-DD	Version 1.10, dated 05/12/2012	Others
2.	TUV Rheinland	Validation Report for Registered PoA-DD	Version 1.3, dated 10/12/2012	Others
3.	UNFCCC	AMS-II.G "Energy efficiency measures in thermal applications of non-renewable biomass"	Version 04	Others
4.	CME	Monitoring Report (publication) Monitoring Report (final)	Version 04, dated 05/07/2016 Version 07, dated 12/11/2016	CME
5.	CME	Registered CPA DD (8696-0003)	Version 04, dated 26/02/2014	Others
6.	CME	Emission reduction, cookstove sales database and sample size calculation sheets		CME
7.	UNFCCC	CDM VVS	Version 9	Others
8.	UNFCCC	CDM PS	Version 9	Others
9.	UNFCCC	CDM PCP	Version 9	Others
10.	UNFCCC	Glossary of CDM terms	Version 08.0	Others
11.	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	Version 5	Others
12.	UNFCCC	Guideline: Sampling and surveys for CDM project activities and programme of activities	Version 3.0	Others
13.	PCIA	The Water Boiling Test Protocol	Version 4.3.2, Partnership for Clean Indoor Air (PCIA)	Others
14.	IPCC	IPCC Defaults	2006	Others
15.	CME	Technical specifications of ICS	-	CME
16.	CME	Calibration certificates of monitoring equipment's used in	-	CME

		WBT		
17.	CME	Carbon Waiver_Sales forms	-	CME
18.	CME	Evidence of QA_QC and Training	-	CME
19.	CME	Evidence of First Sale	-	CME
20.	CME	Survey forms	-	CME
21.	CME	WBT 2015 & WBT 2016	-	CME

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

**Table 1. Remaining FAR from validation and/or previous verification**

There is no finding from validation report of the project/ 01.3/.

**Table 2. CL from this verification**

CL ID	01	Section no.	I.1	Date : 22/07/2016
<b>Description of CL</b>				
a) MR under section B.2. mentioned that "Sampling plan has been carried out per CPA and has been described in section (D.3 of part II) below", but the Section D.3. of part II could not be located in the MR. Please clarify.				
b) <i>In the MR</i> , under page 7 it is mentioned that "The monitoring period covered the period between and including 3rd Mar 2014 to 2nd Mar 2016. During this period two monitoring activities were carried out covering 3 Mar 2014 – 2 Mar 2015 and 3 Mar 2015 – 2 Mar 2016." PP is requested to kindly clarify how this is correlated to the monitoring period as mentioned in the first page of MR.				
c) PP should also add a description of the each variable mentioned under equation 1 under section H.1. of MR.				
<b>Project participant response</b>				<b>Date : 17/08/2016</b>
a) The error in monitoring report is on account of typographical mistake. The reference to section D.3 for description of sampling plan has been rectified to section G.3 in the revised monitoring report.				
b) The monitoring period dates specified in the first page of the monitoring report refers to the PoA monitoring period (01 July 2013 – 02 March 2016). The status of the CPAs included in the PoA and covered in the aforesaid monitoring period is as follows:				
<b>CPA Number</b>	<b>Inclusion date</b>	<b>Crediting period start date</b>	<b>Monitoring period applicable</b>	<b>Covered under Monitoring report (Yes/No)</b>
8696-001	19 Dec 2012	01 July 2013	01 Jul 2013 - 02 Mar 2016	No
8696-002	16 Jan 2014	01 Feb 2014	01 Feb 2014 - 02 Mar 2016	No
8696-003	03 Mar 2014	03 Mar 2014	03 Mar 2014 - 02 Mar 2016	Yes
The first monitoring period of the PoA can start from the start date of earliest CPA crediting period. Hence the PoA monitoring period has been specified as 01 Jul 2013 – 02 Mar 2016. However, during this monitoring period, only CPA0003 has been monitored under single sampling plan at the CPA level. Thus, the effective monitoring period (i.e. the monitoring period of CPA 0003) covers a two years period from 3rd March 2014 to 2nd Mar 2016 (for CPA003) as specified in table above.				
c) A description of every variable in equation 1 section H.1 of the MR has been included in the revised monitoring report.				
<b>Documentation provided by project participant</b>				
Revised MR v5.0				
<b>DOE assessment</b>				<b>Date: 12/09/2016</b>



The assessment team has checked the revised MR and found that PP has addresses all the raised issues satisfactorily.

- MR section B.2 has been corrected to include the correct reference of the section regarding the sampling.
- The justification provided by the PP regarding the monitoring session & monitoring period is found to be reasonable and correct.
- MR section H.1 has been revised and PP has included the required details as per the findings.

Thus, CL#01 was closed.

**Table 3. CAR from this verification**

CAR ID	02	Section no.	I.4.2.	Date : 22/07/2016
<b>Description of CAR</b>				
a) For the parameter " $N_{op\_stoves,y}$ " the percent and numbers does not matches ER sheet viz. sheet name: "MS#1 stove operation" and "MS#2 stove operation".				
b) For the parameter " $\eta_{new,y}$ ", PP should also include the calibration details viz. last calibration date, current calibration date and validity etc.				
c) In case of parameter " $B_{residual}$ ", in the ex ante calculation in the CPA DD the value was 0.8285 whereas in the current monitoring same is 1.96 & 1.91 which is greater then ex ante value. Please clarify the reason. Also, how the value is calculation as per the calculation method in the CPA DD is not clear.				
<b>Project participant response</b>				<b>Date : 17/08/2016</b>
a) <i>The error in monitoring report is on account of typographical mistake. The correct value of <math>N_{op\_stoves,y}</math> in MS#1 is 87.76% ('CPA ER Calculations' cell AK 40) and 3,257 ('CPA ER Calculations' cell AK 89) and 2902 (worksheet 'CPA ER Calculations' cell AL 89) for MS#1 and MS#2 respectively. The same has been rectified in the revised monitoring report.</i>				
b) <i>The calibration details of the equipment used in determining stove efficiency (<math>\eta_{new,y}</math>) that is Omegatte HH308 Mini Thermometer) and the weighing scale (Bracknell Scale Balance) has been included in the revised monitoring report. Prior to undertaking the efficiency tests in the two monitoring session the equipment was certified by a national institution Bamenda University of Science and Technology that they were in proper calibration and that they did not require extra calibration. Certification letters attesting to this have been provided by the University.</i>				
c) <i>The value of <math>B_{residual}</math> (0.8285 tonnes / annum) was determined ex-ante as 20% of the average consumption of woody biomass per appliance (4.1427 tonnes / annum) solely for the purpose of calculating ex-ante emission reduction estimates. This is however a monitoring parameter and ex-post emission reductions are to be calculated based on ex-post monitored values. As per page 31 of CPA 003 CPA-DD, "This parameter will be calculated by taking the ratio of meals cooked using the baseline (replaced) stove after the receipt of the ICS v.s. before the receipt of the ICS, multiplied by <math>M_{woody\_biomass,app}</math> (kg/year). Thus, the number of meals cooked using the traditional stoves before acquiring the project stove against the number of meals cooked using the traditional stoves after acquiring the project stove were monitored using survey questionnaire. The ratio obtained was multiplied by the average wood consumption per appliance to determine <math>B_{residual}</math></i>				
<b>Documentation provided by project participant</b>				
Revised monitoring report v 05 Revised ER calculator version 2.0				
<b>DOE assessment</b>				<b>Date: 12/09/2016</b>

The revised MR & ER sheet has been assessed and the assessment team confirms that –	
<ul style="list-style-type: none"> <li>a) The typographical error with regard to Nop_stove under MS#01 stove operational and MS#02 stove operation in the revised MR are corrected and made consistent vis a vis wit the ER sheet. Issue closed.</li> <li>b) PP need to provide the complete details of the calibration of the equipment's ( date of last calibration, current calibration date &amp; validity) as well as the equipment details viz serial number, make etc. This is the requirement as per the MR completion guidance as provided in the MR template under page 14 under section G.2. Issue Open.</li> <li>c) PP has explained the reason for increase in the value of <math>B_{residual}</math> which has been found to be convincing and reasonable. Issue closed.</li> </ul>	
Thus CAR#02 is still open.	
<b>Project participant response</b>	<b>Date : 12/09/2016</b>
<p>b) Prior to carrying out the WBT the equipment were calibrated as provided in detail below  Details of the calibration of the equipment are as provided below for the two monitoring sessions</p> <p><i>Monitoring session 1</i>  <b>Calibration date:</b> 13<sup>th</sup> May 2015  <b>Equipment:</b> Brecknell counting scale  <b>Model:</b> B140  <b>Serial no:</b> 0514000008  <b>Capacity:</b> 6kg*0.0002kg/12lb*0.0005 lb  <b>Accuracy:</b> +/- 0.0002 kg / +/- 0.0005 lb</p> <p><b>Equipment:</b> Mini thermometer  <b>Model:</b> Omegatte HH308  <b>Serial no.</b> 140400157  <b>Capacity range :</b> 200°C ~ 1370°C / 328°F~249°F  <b>Accuracy:</b> +/- 0.3% reading +1°C / +/- 0.3% reading +2°F  Calibration carried out by The University of Bamenda</p> <p><i>Monitoring session 2</i>  <b>Calibration date:</b> 2<sup>th</sup> May 2016  <b>Equipment:</b> Brecknell counting scale  <b>Model:</b> B140  <b>Serial no:</b> 0514000008  <b>Capacity:</b> 6kg*0.0002kg / 12lb*0.0005 lb  <b>Accuracy:</b> +/- 0.0002 kg / +/- 0.0005 lb</p> <p><b>Equipment:</b> Mini thermometer  <b>Model:</b> Omegatte HH308  <b>Serial no.</b> 140400157  <b>Capacity range :</b> 200°C ~ 1370°C / 328°F~249°F  <b>Accuracy:</b> +/- 0.3% reading +1°C / +/- 0.3% reading +2°F  Calibration carried out by The University of Bamenda</p>	
<b>Documentation provided by project participant</b>	
Calibration Certificate from The University of Bamenda	
<b>DOE assessment</b>	<b>Date: 12/09/2016</b>
PP has included the monitoring equipment details used in the WBT along with the calibration details in the revised MR which has been checked and found to be satisfactory. Thus CAR#02 was closed.	

CAR ID	03	Section no.	H.1.	Date : 22/07/2016
Description of CAR				

## CDM-PoA-VCR-FORM

Project participant is making sure that no double counting is occurring in the PoA. However, it is not clear how is PP checking for double counting with other carbon market mechanisms like VCS or GS.	
<b>Project participant response</b>	<b>Date : 17/08/2016</b>
<p>A review of PoA/project registries at CDM, VCS and GS, searching for registered PoA/projects in Cameroon revealed the following improved cook stove PoA/Project in Cameroon:</p> <ol style="list-style-type: none"> <li>1. CDM project search (<a href="https://cdm.unfccc.int/Projects/projsearch.html">https://cdm.unfccc.int/Projects/projsearch.html</a>) - None</li> <li>2. CDM PoA search (<a href="https://cdm.unfccc.int/ProgrammeOfActivities/registered.html">https://cdm.unfccc.int/ProgrammeOfActivities/registered.html</a>)- PoA 6207</li> <li>3. VCS Project Database (<a href="http://www.vcsprojectdatabase.org/#/home">http://www.vcsprojectdatabase.org/#/home</a>) - None</li> <li>4. Gold Standard Registry – (<a href="http://reg/public/index.jsp?entity=project&amp;sort=project_name&amp;dir=ASC&amp;start=0&amp;entity_domain=Markit,GoldStandard">reg/public/index.jsp?entity=project&amp;sort=project_name&amp;dir=ASC&amp;start=0&amp;entity_domain=Markit,GoldStandard</a>) – GS 1064</li> </ol> <p>None of the PoA/ projects include Envirofit M5000 stoves included in the subject PoA. Besides, PP has added as description that the stoves covered under CPA 0003 have not claimed any emission reductions from any other carbon standard individually or by being included in another PoA / project activity at the time of carrying out this verification.</p>	
<b>Documentation provided by project participant</b>	
Revised monitoring report v 05	
<b>DOE assessment</b>	<b>Date: 12/09/2016</b>
PP has provided a detailed explanation on avoiding the double counting for the project which is found to be satisfactory. Thus CAR#03 was closed.	

**Table 4. FAR from this verification**

There is no FAR from this verification.

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## Document information

Version	Date	Description
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		