




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

Title of the programme of activities (PoA)	African Improved Cooking Stoves Programme of Activities		
UNFCCC reference number of the PoA	5342		
Version number(s) of the PoA-DD(s) applicable to this report	4.3		
Version number of the verification and certification report	03		
Completion date of the verification and certification report	24/06/2016		
Monitoring period number	3 rd monitoring period (1 st Monitoring report)		
Duration of this monitoring period	25/10/2014 to 24/10/2015 (first and last days are included)		
Number and version number of the monitoring report to which this report applies	Monitoring report number for this monitoring period: 1 Version: 2.0, dated 06/06/2016		
Coordinating/managing entity (CME)	Envirofit International Ltd.		
Host Party(ies)	Host Party(ies) of the PoA		Is this a host Party to a CPA covered in this report?(yes/no)
	Ghana		Yes
	Nigeria		No
	Liberia		No
Sectoral scope(s)	3: Energy demand		
Selected methodology(ies)	AMS-II.G Version 03		
Selected standardized baseline(s)	--		
Total estimated GHG emission reductions or net GHG removals for this monitoring period in the included CPA(s) covered in this report	5342-0001: 15,477 tCO ₂ e 5342-0002: 47,008 tCO ₂ e 5342-0003: 47,008 tCO ₂ e Total : 109,493 tCO ₂ e		
Total certified GHG emission reductions or net GHG removals for this monitoring period for the included CPA(s) covered in this report	5342-0001: 15,477 tCO ₂ e 5342-0002: 0 tCO ₂ e 5342-0003: 11,809 tCO ₂ e Total : 27,286 tCO ₂ e		
Name of DOE	Carbon Check (India) Private Ltd.		
Name, position and signature of the approver of the verification and certification report	Amit Anand, CEO 		

SECTION A. Executive summary

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Introduction:

The Coordinating Managing Entity (CME), Envirofit International Ltd. has commissioned the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent verification of the CDM Programme of Activities "African Improved Cooking Stoves Programme of Activities" in Ghana, Nigeria and Liberia (hereafter referred to as "Programme of Activities" or "PoA") for the CPAs: 5342-0001, 5342-0002, and 5342-0003. The PoA helps in reducing the emission of greenhouse gases by distribution of the fuel-efficient cook stoves in individual households. The fuel-efficient cook stoves are replacing the traditional stoves that were being used in the baseline scenario.

During the current monitoring period although the three included CPAs (whose crediting period fall within this monitoring period) are being considered (5342-0001, 5342-0002 and 5342-0003) for verification, emission reductions are being claimed only for the first and third CPAs which are located in Ghana. CPA 5342-0002 has not been implemented yet, and hence no emission reductions for this CPA during the monitoring period are being claimed and neither will the ERs be claimed for the monitoring period in future. This was confirmed by reviewing the monitoring report /2/ and also during the on site visit interviews. The CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activities. The CPA implementer for the CPA 5342-0001 is "The Centre of Energy, Environment and Sustainable Energy" (CEESD) and the CPA 5342-0003 is implemented by the CME itself in partnership with the local entity CEESD.

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

Objective:

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

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

The objective of this verification was to verify and certify emission reductions reported for the "African Improved Cooking Stoves Programme of Activities" in the host countries Ghana, Nigeria and Liberia for the period 25/10/2014 to 24/10/2015.

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data, and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and

presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the registered programme of activities.

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

Scope:

The scope of the verification is:

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

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

The verification comprises a review of the monitoring report over the monitoring period from 25/10/2014 to 24/10/2015 and based on the registered/included CPA-DDs in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by the CME.

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

The verification team assigned by the DOE concludes that the PoA-DD (Version 4.3, dated 07/06/2014 /B04/, Component Project Activities 5342-0001 and 5342-0003 as described in the registered CPA-DDs (Version 3.2, dated 27/11/2012 and Version 2, dated 22/10/2013 respectively) /B04/ and monitoring report (Version 2.0, dated 06/06/2016) /2/, meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM Modalities & Procedures, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the VVS requirements version 09.0 /B01-1/.

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the registered/included CPA-DDs. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on site visit the verification team confirms that the PoA has resulted in the 27,286 tCO₂e emission reductions during the third (1st Monitoring report) monitoring period.

CCIPL as a DOE is able to issue a positive verification opinion expressed in the attached Certification statement.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader / Verifier / Technical Expert	IR	Agarwalla	Sanjay Kumar	CCIPL	X	X	X	X
2.	Local Expert	EI	Amoateng	Elvis Dupri	CCIPL		X	X	

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

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

SECTION C. Means of verification

C.1. Desk review

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The verification was performed primarily based on the review of the monitoring report /1/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

C.2. On-site inspection

Duration of on-site inspection: 23/05/2016 to 26/05/2016				
No.	Activity performed on-site	Site location	Date	Team member
1.	An assessment of the implementation and operation of the registered project activity as per the registered PoA-DD, registered/included CPA-DDs.	Ghana, visit to sample households	23/05/2016 to 26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	Ghana, visit to sample households	23/05/2016 to 26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
3.	Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the CPA-DDs	Ghana, visit to sample households	23/05/2016 to 26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
4.	A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources	CCESD office in Kumasi	26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the CPA-DD and the selected methodology and corresponding tool(s), where applicable	CCESD office in Kumasi	26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	CCESD office in Kumasi	26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
7.	An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters	CCESD office in Kumasi	26/05/2016	Sanjay Kumar Agarwalla Elvis Dupri Amoateng

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Ahiekpor	Julius	CEESD	23/05/2016 to 26/05/2016	Project implementation and operation, monitoring procedure, data and information flow, Roles and responsibility, Quality Assurance – Management and operating system, Sales/Distribution records, Survey records, Qualification and Training	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
2.	Kotei	Benard	CEESD	23/05/2016 to 26/05/2016	Sales/Distribution records, Survey records	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
3.	Amponsem	Bright	CEESD	23/05/2016 to 26/05/2016	Data and information flow, monitoring procedure, Sales/Distribution records, Survey records	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
4.	Amokonam	Joseph	CEESD	23/05/2016 to 26/05/2016	Data and information flow, monitoring procedure, Sales/Distribution records, Survey records	Sanjay Kumar Agarwalla Elvis Dupri Amoateng
5.	Lohia	Rohit	Envirofit	26/05/2016 to 16/06/2016 (via skype)	Project implementation and operation, monitoring procedure, data and information flow, Roles and responsibility, Quality Assurance – Management and operating system, Sales/Distribution records, Survey records, Qualification and Training, CER calculation and completeness of monitoring report, compliance of monitoring plan with monitoring methodology and registered CPA-DDs.	Sanjay Kumar Agarwalla

C.4. Sampling approach

The total population of the stoves under the two monitored CPAs (CPA-0001 and CPA-0003) together are 14,274.

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

1. Efficiency of the system being deployed as part of the project activity (η_{new})
2. Stove Operation Fraction (SOF)
3. The fraction of end users that are still using baseline (replaced) stoves (f_{old})
4. The amount of woody biomass consumption that is consumed through the continued use of old stoves (μ_{old})

Simple random sampling across the two CPAs included in the PoA was applied by CME for selection of the monitoring samples with 95/10 confidence/precision for all four parameters for annual monitoring which is deemed acceptable as per the registered PoA-DD /CPA-DDs. Please refer to the section I.4.3 of this report on detailed assessment on sampling plan opted by the CME.

DOE used sampling during verification for checking the CME's sample size. A sample size of 18 households was chosen (no non-responses). A sample size of 18 was required, based on an AQL of 1 % and UQL of 20 %, the producer and consumer risk used was 10 % each. Acceptance number (c) thus determined for the sample is 1. It was observed that all the stoves were in working condition and thus $c=0$, i.e. no discrepant records were observed with the published MR /1/ and ER sheet /3/. Thus PP's set of records has been accepted in line with § 28 of the sampling standard, version 05 /B07/.

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
General	--	--	--
Compliance of the monitoring report with the monitoring report form	--		--
Remaining forward action requests from validation and/or previous verification	--	--	
Specific-case CPA(s) considered for verification and covered in this report	-	--	--
Programme of activities			
Compliance of the programme implementation with the registered PoA-DD	-	--	--
Implementation and operation of the management system	01	--	--
Post-registration changes			
1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	--	--	--
2. Corrections	--	--	--
3. Inclusion of a monitoring plan in a registered PoA-DD (including its generic CPA-DD(s))	--	--	--
4. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline	--	--	--
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	--	--	--
6. Types of changes specific to afforestation and reforestation activities	--	--	--
Component project activity(ies)			
Compliance of the CPA implementation with the included CPA design document	01	--	--
Post-registration changes			
• Temporary deviations from registered monitoring	--	--	--

plan, applied methodology or applied standardized baseline			
• Corrections	--	--	--
• Changes to the start date of the crediting period	--	--	--
• Inclusion of a monitoring plan to an included CPA-DD	--	--	--
• Permanent changes to the monitoring plan as described in the included CPA-DD, applied methodology, or applied standardized baseline	--	--	--
• Changes to the programme design of the included CPA-DD	--	--	--
• Types of changes specific to afforestation and reforestation component project activities	--	--	--
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	--	--	--
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	--	--	--
• Data and parameters monitored	-	01	--
• Implementation of sampling plan	01	--	--
Compliance with the calibration frequency requirements for measuring instruments	01	--	--
Assessment of data and calculation of emission reductions or net removals		--	--
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	--	-	--
• Calculation of project GHG emissions or actual net GHG removals by sinks	--	--	--
• Calculation of leakage GHG emissions	--	--	--
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	--	--	--
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case CPA	01	--	--
• Remarks on difference from estimated value in registered PDD	--	--	--
Others (please specify)			
Total	05	01	-

SECTION D. Internal quality control

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

SECTION E. Verification opinion

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Carbon Check (India) Private Ltd. (CCIPL) has performed the third (1st Monitoring report) periodic verification of the registered CDM Programme of Activities "African Improved Cooking Stoves Programme of Activities" having UNFCCC reference number as 5342 for the three CPAs, 5342-0001, 5342-0002 and 5342-0003. The CPAs covered for this verification are the ones which have crediting period falling within this monitoring period. During the current monitoring period, although three included CPAs are being considered (5342-0001, 5342-0002 and 5342-0003), emission reductions are being claimed only for the first and third CPAs, which are located in Ghana. 5342-0002 has not been implemented and hence the CME is not claiming emission reductions for this CPA during the monitoring period and neither will the ERs for this CPA be claimed for the

monitoring period in future. This was confirmed by reviewing the monitoring report /2/ and also during the on site visit interviews.

The verification team assigned by the DOE concludes that the PoA-DD (Version 4.3, dated 07/06/2014), Component Project Activities 5342-0001 and 5342-0003 as described in the registered CPA-DDs (Version 3.2, dated 27/11/2012 and Version 2, dated 22/10/2013 respectively) /B04/ and monitoring report (Version 2.0, dated 06/06/2016) /2/, meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM Modalities & Procedures, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the VVS requirements version 09.0 /B01-1/.

Verification methodology and process

The Verification team confirms the contractual relationship signed on 16/03/2016 between the DOE, Carbon Check (India) Private Ltd. and the CME, Envirofit International Ltd. The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL procedures and requirements.

The verification has been performed as per the requirements described in the VVS version 09.0 and constitutes the review and completion of the following steps:

- Reviewing the registered PoA-DD (version 4.3, date 07/06/2014), the registered CPA-DDs for 5342-0001 and 5342-0002 (Version 3.2, dated 27/11/2012 and Version 2, dated 22/10/2013 respectively) /B04/ including the monitoring plan and the corresponding validation reports /B04/;
- Publication of the MR (version 1.0, 22/04/2016) /1/ on the UNFCCC website on 26/04/2016
- Desk review of the validation report, MR and other relevant documents including documents related to the projects activities in emission reductions
- Review of the applied monitoring methodology (AMS-II.G version 03) /B02/;
- Review of any CMP and EB decisions, clarifications and guidance /B05/;
- On-site assessment (23/05/2016 – 26/05/2016)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The component project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the registered/included CPA-DD/s. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on site visit the verification team confirms that the PoA has resulted in 27,286 tCO₂e emission reductions during the third (1st Monitoring report) monitoring period.

Verified emission reductions for the PoA: 27,286 tCO₂e.

The break-up of emission reduction up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO₂e)	0	27,286

Break up of emission reductions CPA wise:

5342-0001; 15,477 tCO₂e
 5342-0002: 0 tCO₂e
 5342-0003: 11,809 tCO₂e

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

SECTION F. Certification statement

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Carbon Check (India) Private Ltd., the DOE, has performed the verification of the registered Programme of Activities, UNFCCC Registration Number 5342, "African Improved Cooking Stoves Programme of Activities" for the three CPAs 5342-0001, 5342-0002, and 5342-0003. The component project activities are designed to generate emission reductions by distribution of the fuel-efficient cook stoves in individual households. The fuel-efficient cook stoves are replacing the traditional stoves that were being used in the baseline scenario.

The CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activities. It is DOE's responsibility to express an independent verification statement on the reported GHG emission reductions from the component project/s. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PoA-DD/CPA-DDs. The verification is carried out in-line with the VVS, version 09.0 requirements /B01-1/.

The verification was performed to identify the compliance of the component project activities with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information on-site that included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

The verification is based on:

- PoA-DD version 4.3 dated 07/06/2014;
- CPA-DD/s included in the registered PoA and its monitoring plan for the monitoring period 25/10/2014 to 24/10/2015.
- Approved monitoring methodology AMS-II.G "Energy efficiency measures in thermal applications of non-renewable biomass", version 03;
- Validation report /B04/ for the PoA and CPA/s;
- Monitoring report(s) version(s) 1.0, dated 22/04/2016; version 2.0, dated 06/06/2016;

This statement covers verification period from 25/10/2014 to 24/10/2015.

The DOE had raised 05 clarification and 01 corrective action requests, all of which have been resolved by the CME.

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

The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 27,286 tCO₂ equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records. The break-up of emission

reduction up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO ₂ e)	0	27,286

SECTION G. Verification findings - General

G.1. Compliance of the monitoring report with the monitoring report form

The MR form uses the latest applicable version of the Monitoring report form for CDM programme of activities (version 01.0).

Means of verification	DR
Findings	-
Conclusion	Verification Team confirms that the latest available version of monitoring report /2/ has been used by the CME and the MR /2/ is in compliance of the monitoring report with the relevant form and instructions therein. This confirms the compliance of § 381 and 382 of VVS version 09.0 /B01-1/.

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

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This is the 3rd (1st Monitoring report) periodic verification of the PoA. There are no forward action requests from validation or the 1st periodic verification of the PoA.

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)
5342-0001	Yes	4.3	Y
5342-0002	Yes	4.3	Y
5342-0003	Yes	4.3	Y
5342-0004	No	4.3	N
5342-0005	No	4.3	N
5342-0006	No	4.3	N

SECTION H. Verification findings – Programme of activities

H.1. Compliance of the programme implementation with the registered programme design document

Means of verification	DR, I
Findings	-
Conclusion	CC IPL by means of an on-site inspection and document review, assessed that all physical features (technology, project equipment, and monitoring and metering equipment) of the included CPAs in the registered PoA-DD / CPA-DDs are in place

	<p>and that the coordinating/managing entity has operated the PoA and the CPAs as per the registered PoA-DD and CPA-DDs.</p> <p>Verification team confirms that the programme has been implemented as per the registered PoA-DD. This confirms the compliance of § 383 and § 384 of VVS version 09.0 /B01-1/.</p>
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H.2. Implementation and operation of the management system

Means of verification	DR, I
Findings	<p>CL 01 was raised as in section B.1 of the MR, version 1.0, dated 22/04/2016, implementer for the CPA00003 was stated as CEESD whereas the CPA-DD states it to be Envirofit.</p> <p>Also CME was requested to clarify the statement “<i>Envirofit obtained the customer’s approval during distribution to exclusively assign carbon rights to the CME as per the disclaimer specified on all stove boxes/warranty cards</i>” with evidence.</p>
Conclusion	<p>The PoA management system including the record-keeping system has been explained in the registered PoA-DD /B04/. During the course of verification, the verification team, based on review of provided documents and OSV interview/observation, has assessed this management system. Verification team evaluated the management systems in place to implement the monitoring of the project activity. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system.</p> <p>As outlined in section B.1 of the MR, monitoring is done by the Distributing Organization (DO), CEESD who is the CPA implementing entity for CPA-0001 and implementing partner for CPA-0003. The monitoring data, is further periodically checked by the CME, to ensure there is no double counting.</p> <p>It was confirmed during the OSV and by checking the monitoring system that all the roles and responsibilities related to monitoring, are fulfilled by representatives of the CME.</p> <p>The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan /B04/.</p> <p>The details about monitoring system have been provided in Section B.1 of the monitoring report /2/. The data flow and management and reporting structure was also checked during the site visit.</p> <p>The verification team confirms that the monitoring management system of the CDM PoA is in place; with the responsibilities properly identified and in place. This confirms the compliance of § 83 (a), § 390 (b) (iv) and § 390 (e) of VVS version 09.0 /B01-1/.</p> <p>CL 01 was closed after the CME submitted revised MR stating Envirofit International as the implementer for CPA00003. Also it has been clarified that the carbon rights are transferred by the end users by CPA distribution records.</p>

H.3. Post-registration changes

H.3.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

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There are no temporary deviations from the registered monitoring plan or the monitoring methodology for the PoA.

H.3.2. Corrections

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There are no corrections in the PoA

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

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There is not any inclusion of a monitoring plan in the registered PoA-DD (including its generic CPA-DD(s)).

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

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There are no permanent changes to the monitoring plan as described in the registered PoA-DD or the applied methodology.

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

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There are not changes to the programme design of the registered PoA-DD that have been approved by the Board during this monitoring period or to be submitted with the request for issuance.

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

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Not applicable

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

Means of verification	DR, I
Findings	CL 02 was raised as on page 5 of the published MR, fuel for CPA0003 was stated as Woodfuel whereas in the CPA-DD it is stated as charcoal. Also the monitoring period stated in Table 1 is incorrect.
Conclusion	<p>CC IPL's verification team considers the CPAs description of the project contained in the registered CPA-DDs to be complete and accurate. The CPA-DDs complies with the relevant methodology, tools, forms and guidance at the time of CPA-DDs submission for registration/inclusion.</p> <p>The user details have been recorded in accordance with the CPA-DD, Type of appliance (ICS type) deployed, Serial number (Stove-ID) of system, Delivery date of appliance (to user), User details (Name, Address, etc.), Implementing Entity/ Contact Person, Type of stove predominantly used before acquiring of the ICS.</p> <p>In summary, the monitoring period is reasonable and the operation of the CPA is in accordance with the registered CPA-DDs. The verification team took cognizance of § 239 to § 242 of CDM Project Standard and § 373 b (i), § 383, § 384 and § 385 of VVS version 09 /B01-1/.</p> <p>Further details please refer to Annex 1 of this report.</p> <p>CL 02 was closed after CME submitted revised MR after correcting the fuel for CPA00002 and CPA00003 as woodfuel and charcoal respectively which is in accordance with the respective registered CPA-DDs. Also the monitoring period was corrected.</p>

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

There are no temporary deviations from the registered monitoring plan or the monitoring methodology for the CPA-DDs.

I.2.2. Corrections

There are no corrections for the CPA-DDs.

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

There are not any changes to the start dates of the crediting period for any of the CPA-DDs.

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

There is not any inclusion of a monitoring plan in the included CPA-DDs.

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

There are no permanent changes to the monitoring plan as described in the included CPA-DDs or the applied methodology

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

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

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

Means of verification	DR
Findings	-
Conclusion	<p>The verification team is able to confirm that the monitoring plan contained in the registered CPA-DDs is in accordance with the approved methodology applied by the project activity, i.e. AMS-II.G, version 03 /B02/.</p> <p>The monitoring plan is in accordance with the approved methodology, AMS-II.G version 03 /B02/, applied by the component project activity and as provided in the CPA-DDs /B04/.</p> <p>The verification took cognizance of § 386 to § 388 of VVS version 09 /B01-1/.</p>

I.4. Compliance of monitoring activities with the registered monitoring plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered CPA-DDs, This conclusion has been made based on assessment in sections I.4.1, I.4.2 and I.4.3 below:

I.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	DR
Findings	-
Conclusion	<p>Verification team confirms that the Data and parameters fixed ex ante are in compliance with the registered CPA-DDs and monitoring plan. Please refer to the Annex 2 for assessment of each parameter.</p> <p>The verification took cognizance of § 389 of VVS version 09 /B01-1/.</p>

I.4.2. Data and parameters monitored

Means of verification	DR, I
Findings	<p>CAR 01 was raised as the following inconsistencies were observed in between the monitoring survey sheets and the ER spread sheet:</p> <ul style="list-style-type: none"> i. The sample number 12 was not in use as per the survey sheets but it was stated to be in used in the ER spread sheet. ii. For sample number 69, the survey sheet states the stove usage per week whereas in the ER spread sheet per day has been stated. iii. For sample number 67, sale date is inconsistent in between the sales agreement and the ER spread sheet.
Conclusion	<p>Verification team confirms that the Data and parameters monitored are in compliance with the registered CPA-DDs and monitoring plan. Please refer to the Annex 3 for assessment of each parameter.</p> <p>The verification took cognizance of § 389 and § 401 of VVS version 09 /B01-1/.</p> <p>CAR 01 was closed out as below:</p> <ul style="list-style-type: none"> i. CME submitted revised ER spread sheet and MR with corrections in the sample numbers 12 in line with the survey forms. ii. For sample number 69, weekly usage of the traditional stove was stated in the revised ER spread sheet. iii. For sample number 67, sales date was corrected in the revised ER spread sheet.

I.4.3. Implementation of sampling plan

Means of verification	DR, I
Findings	<p>CL 03 was raised on page 7 of the published MR, the value for the “Expected results” for the parameter “$\eta_{\text{new}}(\text{CH5200})$”, is inconsistent with the ER spread sheet. CME is requested to provide the source along with evidence for all the values used for “Expected results” for the calculation of sample size for each of the monitoring parameters.</p> <p>The total population for “fold” and “μ_{old}” stated as 12,847 and 2,569 in the MR page 7 do not match the respective values in the ER spread sheet, “MP#3 Sample Size Calculation”.</p>
Conclusion	<p>The sampling was undertaken by the CME for the PoA across the two CPAs (5342-0001 and 5342-0003). The total population of the stoves under two CPAs together is 14,274.</p> <p>The four monitoring parameters to be monitored through the sampling plan are:</p> <ol style="list-style-type: none"> 1. Efficiency of the system being deployed as part of the project activity (η_{new}) 2. Stove Operation Fraction (SOF) 3. The fraction of end users that are still using baseline (replaced) stoves (f_{old}) 4. The amount of woody biomass consumption that is consumed through the continued use of old stoves (μ_{old}) <p>Cross-CPA simple random sampling was applied for the two CPAs by CME for selection of the monitoring samples with 95/10 confidence/precision for all the four parameters for annual monitoring which is deemed acceptable as per the registered PoA-DD /CPA-DDs.</p> <p>A single sampling frame was applied for determining the parameters “SOF”, “f_{old}” and “μ_{old}” as the stoves in both the CPAs were considered homogeneous as they were distributed in the same country (Ghana), same fuel was used (charcoal), end users were households only and the efficiency of the three stove models distributed under the two CPAs did not differ by more than +/-10%.</p> <p>For the thermal efficiency of the stoves (η_{new}) sampling frames were chosen for the</p>

respective three models of stoves (CH2200, CH2300 and CH5200) separately.

The number of samples for each of the parameters covered during the monitoring activity is as given below:

Parameter	Calculated Sample Size	Samples covered during monitoring
η_{new} (CH2200)	7	10
η_{new} (CH2300)	7	10
η_{new} (CH5200)	7	10
SOF	96	129
f_{old}	96	107
μ_{old}	18	21

As the actual sample size in all the cases was not less than either the calculated sample size or the minimum sample size as per the PoA-DD, the sample size covered by the CME was accepted.

For the monitoring parameters SOF, f_{old} , and μ_{old} , data were collected following a specially designed survey form. For thermal efficiency of the stoves WBTs (Water Boiling Tests) were conducted.

It was found that for all the parameters the confidence/precision of 95/10 was met. Section I.4.2 above may be referred for more details.

DOE used sampling during verification for checking the CME's sample size. A sample size of 18 households was chosen (no non-responses). A sample size of 18 was required, based on an AQL of 1 % and UQL of 20 %, the producer and consumer risk used was 10 % each. Acceptance number (c) thus determined for the sample is 1. It was observed that all the stoves were in working condition and thus $c=0$, i.e. no discrepant records were observed with the published MR /1/ and ER sheet /3/. Thus PP's set of records has been accepted in line with § 28 of the sampling standard, version 05.0 /B07/.

Verification team confirms that the sampling approach applied by the CME is in accordance with the registered PoA-DD and the CPA-DDs /B04/ including the Guidelines: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0 /B06/ and Standard: Standard for sampling and surveys for CDM project activities and Programme of Activities, version 05.0 /B07/.

CL 03 was closed as the values of the "Expected results" for " η_{new} (CH5200)" has been made consistent with the revised ER spread sheet in the revised MR submitted by the CME. CME clarified that the values for "Expected results" for the calculation of sample size of the monitoring parameters, have been assumed based on the project participant's knowledge and experience and this is deemed acceptable in accordance with the "Sampling and surveys for CDM project activities and programmes of activities", version 05.0. Further the sample sizes for all the monitoring parameters have been revised in the MR in line with the revised ER spread sheet.

I.5. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	DR, I
Findings	CL 04 was raised requesting the CME to provide the evidence of the calibration equipments used for the WBTs as stated on page 17 of the published MR.
Conclusion	Sales database has been used to record the stoves details by the CME through a survey of the installed stoves based on sampling basis. The stove efficiency testing has been done by WBTs conducted in line with the guidance provided by the CME in the CPA-DDs /B04/ /15/. The key monitoring equipments used for conducting the stove efficiencies by WBTs are thermocouple and weighing scale. The appropriate QA/QC procedures have been followed for the monitoring parameters.

	<p>The verification took cognizance of § 389 and § 394 of VVS version 09 /B01-1/.</p> <p>CL 04 was closed after the CME submitted the calibration details of the monitoring equipments.</p>
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I.6. Assessment of data and calculation of emission reductions or net removals

In line with the requirement of § 401 of VVS, version 09.0 verification team has reviewed the Monitoring report and ER spread sheet to check the arithmetic calculation of the emission reductions. The equation used for the calculation is in line with those provided in the registered CPA-DDs /B04/ and the methodology AMS-II.G, version 03 /B02/ and hence deemed acceptable. Verification team further noted that for all the monitoring parameters, the desired precision of 10% was met and hence no corrections have been applied for these parameters as per the registered PoA-DD /B04/. The verification team took cognizance of § 389 and § 401 of VVS, version 09 /B01-1/.

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

Means of verification	DR, I
Findings	-
Conclusion	<p>The equation for emission reduction calculation as provided in the monitoring report /2/ and confirmed with the registered PoA-DD / CPA-DDs /B04/ and the methodology AMS-II.G, version 03 /B02/ is:</p> $ER_y = B_{y,savings} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossilfuel}$ <p>Where:</p> <p>ER_y = Emission reductions during the year y in tCO₂e</p> <p>$B_{y,savings}$ = Quantity of biomass that is saved in tonnes</p> <p>$f_{NRB,y}$ = Fraction of biomass saved by the project activity in year y that can be established as non-renewable biomass using survey results, national or local statistics or other sources of information (fixed ex ante as 99%)</p> <p>$NCV_{biomass}$ = Net calorific value of the non-renewable biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne)</p> <p>$EF_{projected_fossilfuel}$ = Emission factor for the substitution of non-renewable biomass by similar consumer (Default value of 81.6 tCO₂/TJ).</p> $B_{y,savings} = B_{old} \cdot \left(1 - \frac{\eta_{old}}{\eta_{new}}\right)$ <p>B_{old} = Quantity of biomass used in the absence of the project activity in tonnes/year</p> <p>η_{old} = Efficiency of the system being replaced (fixed 10.1% ex ante)</p> <p>η_{new} = Efficiency of the system being deployed as part of the project activity (monitored ex post during the monitoring period)</p> $B_{old} = LAF \cdot N_{all} \cdot SOF \cdot \left(Q_{biomass} - \left(\frac{\mu_{old}}{1000} \cdot f_{old}\right)\right) \cdot Stove_{year}$ <p>LAF = Net to gross Adjustment factor (0.95) applied in accordance with paragraph 13 and 23 of AMS-II.G v. 03</p> <p>N_{all} = Total number of stoves installed (monitored ex post during the monitoring period)</p> <p>SOF = Stove Operation Fraction - % of stoves operating or replaced by</p>

	<p>equivalent in-service appliance (monitored ex post during the monitoring period)</p> <p>Q_{biomass} = Average annual biomass consumption per appliance (4.36 tonnes / year fixed ex -ante).</p> <p>μ_{old} = Average amount of woody biomass consumption that is consumed through the continued use of old stoves (monitored ex post)</p> <p>f_{old} = Fraction of end users that are still using their replaced stoves during the monitoring period (monitored ex post during the monitoring period)</p> <p>$\text{Stove}_{\text{year}}$ = Calculated average stove operation years in the monitoring period (monitored ex post for the monitoring period)</p> <p>Using the above equations and the respective monitored and ex ante values, emission reduction values are as below:</p> <p>$ER_y (5342-0001) = 15,477 \text{ tCO}_2\text{e}$ $ER_y (5342-0003) = 11,809 \text{ tCO}_2\text{e}$</p> <p>Total emission reductions for the monitoring period for the PoA</p> <p>$ER_y = 27,286 \text{ tCO}_2\text{e}$</p>
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I.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

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

I.6.3. Calculation of leakage GHG emissions

Means of verification	DR, I
Findings	-
Conclusion	<p>A default (0.95) Net to gross adjustment factor to account for leakages (L_y) has been considered by the project and thus it is in line with the requirement of monitoring methodology /B02/ and the CPA-DD /B04/.</p> <p>The verification took cognizance of § 389 of VVS, version 09 /B01-1/.</p>

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

Means of verification	DR
Findings	-
Conclusion	<p>Verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered CPA-DDs. The total number of CERs achieved during the monitoring period is 27,286 tCO₂e.</p> <p>In summary, verification team confirms that actual emission reduction is lower than the estimate of the registered / included CPA-DDs for the current monitoring period.</p> <p>The verification took cognizance of § 401 of VVS, version 09 /B01-1/.</p>

Specific-case CPA reference number	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e)		
				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
5342-0001	15,477	-	-	0	15,477	15,477
5342-0002	0	-	-	0	0	0
5342-0003	11,809	-	-	0	11,809	11,809
Total	27,286	-	-	0	27,286	27,286

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

Means of verification	DR
Findings	CL 05 was raised to clarify the consideration of estimated ERs as 0 for the monitoring period for CPA00002 as stated in section H.5 of the published MR.
Conclusion	<p>Comparison of the actual GHG emission reductions with the estimates in the included specific CPAs is given in the below table. Verification team confirms that actual emission reduction is lower than the estimate of the registered / included CPA-DDs for the current monitoring period. The verification team took cognizance of § 401 of VVS, version 09 /B01-1/.</p> <p>CL 05 was closed after the CME submitted revised MR stating the estimated emission reductions for CPA00002 for the monitoring period.</p>

Specific-case CPA reference number	Value estimated in ex ante calculation in the included specific-case CPA-DD(s)	Actual values achieved by the specific-case CPA(s) during this monitoring period
5342-0001	15,477	15,477
5342-0002	47,088	0
5342-0003	47,088	11,809
Total	109,493	27,286

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

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

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Limit
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CEEDS	Centre of Energy, Environment and Sustainable Development
CL	Clarification Request
CME	Coordinating and Managing entity
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
DR	Document Review
DOE	Designated Operational Entities
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on ClimateChange
IR	Internal resource
MWh	Mega Watt Hour
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
OSV	On Site Visit
QC/QA	Quality control/ Quality assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
WBT	Water boiling test

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Ltd.

Sanjay Agarwalla

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

For following functions:

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

In the following Technical Areas:

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

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO



Date of Approval
24/12/2015

Valid Till
23/12/2016

Revision History of the Document

26/12/2014
20/01/2016

Initial Adoption
Revision to reflect updated office address

¹ India

CARBON CHECK (INDIA) PRIVATE LIMITED

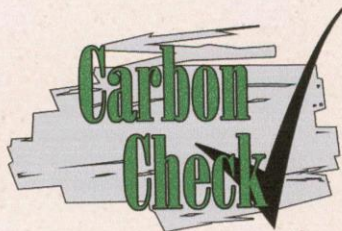
Registered in India: U74930DL2012PTC232495

Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005

Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301

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e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Vikash Kumar Singh

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

For following functions:

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

In the following Technical Areas:

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

Mr. Amit Anand
CEO



Date of Approval
24/12/2015

Valid Till
23/12/2016

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26/12/2014
20/01/2016

Initial Adoption
Revision to reflect updated office address

¹ India, South Africa

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Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Envirofit	1. Monitoring report 2.	Version 1.0, dated 22/04/2016	CME
2	Envirofit	Final Monitoring report	Version 2.0, dated 06/06/2016	CME
3	Envirofit	Emission reduction calculation spread sheet corresponding to /1/	Version 1.0, dated 21/04/2016	CME
4	Envirofit	Emission reduction calculation spread sheet corresponding to /2/	Version 2.0, dated 06/06/2016	CME
5	Envirofit	Sample Monitoring survey records	-	CME
6	Envirofit	CPA distribution records including the dates of distribution	-	CME
7	Envirofit	Evidence for the stove specifications distributed under the two CPAs including their efficiency (CH2200, CH2300 and CH5200)	-	CME
8	Envirofit	Proof of Carbon Credits waiver by End user	-	CME
9	Envirofit	Sample copies sales receipt / user agreement	-	CME
10	Envirofit	Training records	-	CME
11	UNFCCC	Letter from UNFCCC dated 29/04/2014, reference number 343_INQ-01496_Carbon Check_Response-Allowing Carbon Check to perform verification of the PoA and CPA 5342-0001, 5342-0002 and 5342-0003.		
12	Envirofit	Water boiling test records	-	CME
13	Equipment supplier	Technical details including the calibration records of the monitoring equipments used for thermal efficiency measurement	-	CME
14	Envirofit	Sampling plan along with sample number generator evidence	-	CME
15	Colorado State University	Copy of the protocol for conducting WBT for the cook stoves	-	CME
16	Envirofit	Monitoring survey questionnaire template	-	CME
17	Envirofit	CDM monitoring manual including monitoring team details	-	CME

CDM-PoA-VCR-FORM

/B01/	UNFCCC	1. Validation and Verification Standard version 09.0 2. Project Standard version 09.0 3. Project Cycle Procedure version 09.0	http://cdm.unfccc.int/	Others
/B02/	UNFCCC	Applied baseline and monitoring methodology, AMS-II.G, version 03	http://cdm.unfccc.int/	Others
/B03/	UNFCCC	Instructions for filling out the monitoring report form for CDM programme of activities version 01.0	http://cdm.unfccc.int/	Others
/B04/	UNFCCC	Registered PoA-DD (version 4.3 dated 07/06/2014); CPA-DD for 5342-0001: (Version 3.2, dated 27/11/2012); CPA-DD for 5342-0003: (Version 2, dated 22/10/2013); and corresponding validation reports.	http://cdm.unfccc.int/	Others
/B05/	Web sites	Websites: http://cdm.unfccc.int/	--	Others
/B06/	UNFCCC	Guidelines: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0	http://cdm.unfccc.int/	Others
/B07/	UNFCCC	Standard: Standard for sampling and surveys for CDM project activities and Programme of Activities, version 05.0	http://cdm.unfccc.int/	Others

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

Table 1. Remaining FAR from validation

FAR ID	-	Section no.	-	Date: DD/MM/YYYY
Description of FAR				
There is no FAR raised during validation				
CME response				Date: DD/MM/YYYY
-				
Documentation provided by the CME				
-				
DOE assessment				Date: DD/MM/YYYY
-				

Table 2. CL from this verification

CL ID	CL 01	Section no.	H.2	Date: 02/06/2016
Description of CL				
In section B.1 of the MR, version 1.0, dated 22/04/2016, implementer for the CPA00003 has been stated as CEESD whereas the CPA-DD states it to be Envirofit. CME needs to clarify. Also CME is requested to clarify the statement “ <i>Envirofit obtained the customer’s approval during distribution to exclusively assign carbon rights to the CME as per the disclaimer specified on all <u>stove boxes/warranty cards</u></i> ” with evidence.				
Project participant response				Date: 06/06/2016
The errors in section B.1 of the MR were on account of typo-graphical errors. Section B.1 of the MR has been revised to mention Envirofit International as the Implementation partner for CPA00003. The customer’s approval on transfer of carbon rights to Envirofit was taken via CPA distribution records. The same has been correctly specified in section B.1 of the revised monitoring report.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 15/06/2016
CME has submitted revised MR stating Envirofit International as the implementer for CPA00003. Also it has been clarified that the carbon rights are transferred by the end users by CPA distribution records. The CL is closed.				

CL ID	CL 02	Section no.	I.1	Date: 02/06/2016
Description of CL				
On page 5 of the published MR, fuel for CPA00003 has been stated as Woodfuel whereas in the CPA-DD it is stated as charcoal. Also the monitoring period stated in Table 1 is incorrect.				
Project participant response				Date: 06/06/2016
The errors identified above were on account of typographical errors. The information on page 5 and page 9 have been corrected as follows: 1. Fuel for CPA00002 and CPA00003 has now been specified correctly in line with the CPA-DDs. 2. Table 1 has been revised to mention the correct date of monitoring period.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 16/06/2016

In the revised MR submitted by the CME, fuel for CPA00002 and CPA00003 have been corrected as woodfuel and charcoal respectively which is in accordance with the respective registered CPA-DDs. Also monitoring period dates have been corrected in the revised MR. Hence the CL is closed.

CL ID	CL 03	Section no.	I.4.2	Date: 02/06/2016
Description of CL				
<p>On page 7 of the published MR, the value for the “Expected results” for the parameter “$\eta_{\text{new}}(\text{CH5200})$”, is inconsistent with the ER spread sheet. CME is requested to provide the source along with evidence for all the values used for “Expected results” for the calculation of sample size for each of the monitoring parameters.</p> <p>The total population for “fold” and “μ_{old}” stated as 12,847 and 2,569 in the MR page 7 do not match the respective values in the ER spread sheet, “MP#3 Sample Size Calculation”.</p>				
Project participant response				Date: 06/06/2016
<p>The errors identified above are typographical errors. The expected results for parameter $\eta_{\text{new}}(\text{CH5200})$ has been revised in MR to be consistent with ER spread sheet. The expected parameter values have been determined in accordance with para 12(b) and 12(c) of the standard for sampling and surveys for project activities and programmes of activities, Version 05.0 based on PP’s experience and knowledge.</p> <p>The total population for “fold” and “μ_{old}” have been revised to match the respective values in the ER spread sheet, “MP#3 Sample Size Calculation”. Also, the sample size for each parameter has been corrected to be in line with the ER spreadsheet.</p>				
Documentation provided by project participant				
Revised MR and ER spread sheet				
DOE assessment				Date: 15/06/2016
<p>The values of the “Expected results” for “$\eta_{\text{new}}(\text{CH5200})$” has been made consistent with the revised ER spread sheet in the revised MR submitted by the CME.</p> <p>As clarified by the CME, the values for “Expected results” for the calculation of sample size of the monitoring parameters, have been assumed based on the project participant’s knowledge and experience and this is deemed acceptable in accordance with the “Sampling and surveys for CDM project activities and programmes of activities” , version 05.0.</p> <p>Further the sample sizes and population sizes for all the monitoring parameters have been revised in the MR in line with the revised ER spread sheet.</p> <p>The CL is closed.</p>				

CL ID	CL 04	Section no.	I.5	Date: 02/06/2016
Description of CL				
CME is requested to provide the evidence of the calibration equipments used for the WBTs as stated on page 17 of the published MR.				
Project participant response				Date: 06/06/2016
The evidence of calibration of the monitoring equipment is being submitted.				
Documentation provided by project participant				
Calibration records				
DOE assessment				Date: 15/06/2016
CME has submitted evidence for the calibration of the monitoring equipment used for the WBTs. CL is closed.				

CL ID	CL 05	Section no.	I.6.5	Date: 02/06/2016
Description of CL				
CME is requested to clarify the consideration of estimated ERs as 0 for the monitoring period for CPA00002 as stated in section H.5 of the published MR.				
Project participant response				Date: 06/06/2016

The monitoring report has been revised to mention the ex-ante estimated ERs as per CPA-DD for CPA00002 for the concerned monitoring period.	
Documentation provided by project participant	
Revised MR	
DOE assessment	Date: 15/06/2016
Revised MR has been submitted stating the estimated ERs for CPA00002. The CL is closed.	

Table 3. CAR from this verification

CAR ID	CAR 01	Section no.	I.4.1	Date: 02/06/2016
Description of CAR				
The following inconsistencies were observed in between the monitoring survey sheets and the ER spread sheet:				
iv. The sample number 12 was not in use as per the survey sheets but it was stated to be in used in the ER spread sheet.				
v. For sample number 69, the survey sheet states the stove usage per week whereas in the ER spread sheet per day has been stated.				
vi. For sample number 67, sale date is inconsistent in between the sales agreement and the ER spread sheet.				
Project participant response				Date: 06/06/2016
The following corrections have been made in the ER spread sheet and monitoring report:				
i. Sample number 12 has been mentioned as not using EF stoves in the revised ER sheet.				
ii. For sample number 69, the frequency of usage has been rectified.				
iii. For sample number 67, the sale date has been corrected in the ER sheet.				
Documentation provided by project participant				
Revised MR and ER spread sheet				
DOE assessment				Date: 15/06/2016
iv. CME has submitted revised ER spread sheet and MR with correction in the sample numbers 12 in line with the survey forms.				
v. For sample number 69, ER spread sheet has been revised stating the weekly usage of the traditional.				
vi. Sale date for sample number 67 has been corrected.				
The CAR is closed.				

Table 4. FAR from this verification

FAR ID	-	Section No.		Date: DD/MM/YYYY
Description of FAR				
There is no FAR raised during this verification.				
CME response				Date: DD/MM/YYYY
-				
Documentation provided by the CME				
-				
DOE assessment				Date: DD/MM/YYYY
-				

Annex 1:The implementation status of the component project activities

Coordinating and Managing entity/Project Participants:	Envirofit International Ltd.
Title of the PoA:	African Improved Cooking Stoves Programme of Activities
UNFCCC registration No:	5342
Applied Baseline and monitoring methodology:	AMS-II.G, Version 03

Title of the CPA:	African Improved Cooking Stoves Programme of Activities – CPA No. 00001 (Ghana)
CPA reference number:	5342-0001
Date of inclusion:	06/12/2012
CPA implementer	Centre of Energy, Environment and Sustainable Energy (CEESD)
Project Scale:	Small scale
Location of the CPA:	Ghana
CPA crediting period:	15/12/2012 to 14/12/2022
Reported monitoring Period verified in this verification:	25/10/2014 to 24/10/2015

Title of the CPA:	African Improved Cooking Stoves Programme of Activities – CPA No. 00002 (Ghana)
CPA reference number:	5342-0002
Date of inclusion:	21/10/2013
CPA implementer	Centre of Energy, Environment and Sustainable Energy (CEESD)
Project Scale:	Small scale
Location of the CPA:	Ghana
CPA crediting period:	01/11/2013 to 31/10/2023
Reported monitoring Period verified in this verification:	25/10/2014 to 24/10/2015

Title of the CPA:	African Improved Cooking Stoves Programme of Activities – CPA No. 00003 (Ghana)
CPA reference number:	5342-0003
Date of inclusion:	08/11/2013
CPA implementer	Envirofit International Ltd.
Project Scale:	Small scale
Location of the CPA:	Ghana
CPA crediting period:	01/12/2013 to 30/11/2023
Reported monitoring Period verified in this verification:	25/10/2014 to 24/10/2015

The implemented CPAs involve distribution and sales of fuel-efficient charcoal stoves by CEESD in individual households of Ghana. It was confirmed through the monitoring database /6/ that the CPAs involve distribution and installation of 9,375 and 4,899 stoves for 5342-0001 and 5342-0003 respectively till the end of the monitoring period.

The annual energy savings for the CPA 5342-0001 was found to be 84.21 GWh_{th} which is more than 60 GWh_{th} (micro scale limit of the CPA). The eligibility criterion 11 in the CPA-DD states, “*The maximum number of ICS will be determined in each CPA-DD depending on the technology used (excel sheet will be provided to show calculated energy savings). If a CPA exceeds the applicable*

limit in any year, the claimable emission reduction shall be capped based on the estimated GHG reductions in the CPA-DD¹ /B04/. Accordingly, the CME has rightly capped the emission reductions for the CPA 5342-0001 to the estimated value in the CPA-DD for the monitoring period as 15,477 tCO₂e and this is deemed acceptable. For the CPA 5342-0003, annual energy savings was found to be 44.32 GWh_{th} which is less than 180 GWh_{th} (small scale limit) and thus the CPA remains under the small scale limit.

The stoves in the CPAs have been distributed across different locations in Ghana. As confirmed through the monitoring database provided /6/, first stove for the CPA 5342-0001 was distributed on 23/02/2012 and last stove on 04/11/2013; for the CPA 5342-0003 the first stove was distributed on 20/06/2012 and the last stove on 26/08/2015. All the stoves that were checked during verification survey were found to be working and with the serial number marked on the stoves.

The component project activities were implemented and equipment installed as described in the registered/included CPA DD.

It was confirmed during OSV that Envirofit International Ltd. is the Co-ordinating/Managing Entity for the PoA. The actual project activity is in line with the registered/included CPA-DDs.

The information (including data and variables) provided in the MR /2/ is in line with the details provided in the included/registered CPA-DDs /B04/.

In accordance with paragraph 385 c) of VVS, Version 09 /B01.1/, information (data and variables) provided in the monitoring report that are different from that stated in the registered CPA-DDs /B04/, have been assessed. The assessment is summarized below:

CPA 5342-0001:

Parameter	Ex-ante value in the CPA-DD	Actual operation for the reported monitoring period	Assessment by the verification team
Number of cook-stoves	4,500	9,375 (N _{all} = 9157 as per monitoring results)	<p>Verification team noted that the actual number of cook-stoves distributed under the CPA is higher than the number indicated in the registered CPA DD /B04/. This difference is acceptable based on the following:</p> <ul style="list-style-type: none"> ➔ CPA-DD does not restricts the number of cook stoves to 4,500 which is just an indicative value (as explained below) ➔ The emission reductions from the project during the reported monitoring period are capped to the limit for micro scale limit of annual energy savings of 60 GWh¹. <p>Verification team further noted that the cook-stove numbers as indicated in the registered CPA DD is not a fixed number (thus this cannot be categorized under a design change) and this assessment has been</p>

¹ The eligibility criterion 11 in the CPA-DD states, "The maximum number of ICS will be determined in each CPA-DD depending on the technology used (excel sheet will be provided to show calculated energy savings). If a CPA exceeds the applicable limit in any year, the claimable emission reduction shall be capped based on the estimated GHG reductions in the CPA-DD" /B04/.

			<p>based on review of following paragraphs of CPA DD:</p> <p><i>"The CPA will have a maximum energy saving of less than or equal to 60 GWh_{th}/year, thus staying within the micro-scale threshold. Based on the estimated energy savings, it is envisaged that around 4,500 stoves will be distributed under the CPA."</i> (Refer Section A.2, of the registered CPA-DD, version 3.2 dated 27/11/2012).</p> <p>Moreover, verification team noted that the increase in number of stoves was also validated during the previous verification.</p>
Efficiency of the ICS(η_{new})	36.3%	33.29%	<p>The weighted average efficiency of the cook-stoves (η_{new}) monitored ex-post for the current monitoring period is less than the estimated ex-ante value in the CPA-DD. Verification team based on its sectoral expertise confirms that decrease in efficiency in actual project condition is a realistic condition and thus this issue does not require further assessment, as it does not lead to increase in emission reductions.</p> <p>This is also deemed acceptable to the verification team as the actual monitored efficiency is lower than the value indicated in the registered CPA DD and it does not lead to increase in emission reductions.</p>
Stove Operation Fraction (SOF)	0.95	0.829	<p>Since, the monitored ex-post value of SOF for the current monitoring period is less than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team, as it does not lead to increase of emission reductions.</p> <p>This is deemed acceptable.</p>
The amount of woody biomass consumption that is consumed through the continued use of old stoves (μ_{old})	217.8 kg	1,726 kg	<p>Since, the amount of woody biomass consumption that is consumed through the continued use of old stoves monitored ex-post for the current monitoring period is higher than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team as it does not lead to increase of emission reductions.</p> <p>This is deemed acceptable.</p>
The fraction of end users that are still using baseline (replaced) stoves (f_{old})	0.1	0.196	<p>Since, the fraction of end users that are still using baseline (replaced) stoves monitored ex-post for the current monitoring period is higher than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team as it does not lead to increase of emission reductions.</p>

			This is deemed acceptable.
Calculated average stove operation years in the monitoring period ($\text{Stove}_{\text{year}}$)	1	1	$\text{Stove}_{\text{year}}$ monitored ex-post for the current monitoring period is same as the estimated ex-ante value in the CPA-DD.

CPA 5342-0003:

Parameter	Ex-ante value in the CPA-DD	Actual operation for the reported monitoring period	Assessment by the verification team
Number of cook-stoves	14,607	4,899 ($N_{\text{all}} = 4785$ as per monitoring results)	Verification team noted that the actual number of cook-stoves distributed under the CPA is lower than the number indicated in the registered CPA DD /B04/. This does not lead to increase in emission reductions and is deemed acceptable.
Efficiency of the ICS(η_{new})	31.4%	33.83%	The value is the weighted average efficiency of the cook-stoves (η_{new}) monitored ex-post for the current monitoring period in line with option 2 of paragraph 6 of the applied methodology /B02/. The verification team noted that the value applied in the CPA-DD is the lowest of the efficiencies of the stove models specified therein as sales projections were not known ex-ante. This is deemed acceptable.
Stove Operation Fraction (SOF)	0.95	0.829	Since, the monitored ex-post value of SOF for the current monitoring period is less than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team, as it does not lead to increase of emission reductions. This is deemed acceptable.
The amount of woody biomass consumption that is consumed through the continued use of old stoves (μ_{old})	218 kg	1,726 kg	Since, the amount of woody biomass consumption that is consumed through the continued use of old stoves monitored ex-post for the current monitoring period is higher than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team as it does not lead to increase of emission reductions. This is deemed acceptable.
The fraction of end users that are still using baseline (replaced) stoves (f_{old})	0.1	0.196	Since, the fraction of end users that are still using baseline (replaced) stoves monitored ex-post for the current monitoring period is higher than the estimated ex-ante value in the CPA-DD, this is acceptable to the verification team as it does not lead to increase of emission reductions.

			This is deemed acceptable.
Calculated average stove operation years in the monitoring period (Stove _{year})	1	0.91	<p>Stove_{year} monitored ex-post for the current monitoring period is lower than the estimated ex-ante value in the CPA-DD.</p> <p>This is deemed acceptable as it does not lead to increase of emission reductions.</p>

Verification team has assessed the project in order to check any proposed or actual changes to the project design in accordance with VVS Version. 09.0 paragraph 317. In the opinion of CCIPL, there is no change to the project design. Paragraph 275 of PS, Version 09.0, is not applicable as there is no correction or changes to the project design. This conclusion had been arrived based on the assessment of the project inline with the requirements of paragraph 383 of the VVS Version 09.0.

Annex 2: Assessment of data and parameters fixed ex-ante at the time of validation

Parameter	Annual average biomass consumption per appliance (Q_{biomass})
Data unit:	tonnes/year
Default values used:	4.36
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass. ($f_{\text{NRB},y}$)
Data unit:	Fraction
Default values used:	0.99
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

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

Parameter	Emission factor for the substitution of non-renewable biomass by similar consumers ($\text{EF}_{\text{projected_fossilfuel}}$)
Data unit:	tCO ₂ /TJ
Default values used:	81.6
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Efficiency of the system being replaced (fraction) (η_{old})
Data unit:	Fraction
Default values used:	0.101
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

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

Annex 3: Assessment of data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the DOE												
Data / Parameter: (as in monitoring plan of CPA-DD):	Efficiency of the system being deployed as part of the project activity (η_{new})												
Measuring frequency/Time Interval:	Annually. CAR 09 had been raised in this regard and has been resolved (Please refer appendix B for closure).												
Reporting frequency:	Annually. CAR 09 had been raised in this regard and has been resolved (Please refer appendix B for closure).												
Reported value:	<table> <tr> <th>Stove model</th><th>%</th></tr> <tr> <td>CH2200</td><td>32.65%</td></tr> <tr> <td>CH2300</td><td>33.48%</td></tr> <tr> <td>CH5200</td><td>36.41%</td></tr> <tr> <td>Weighted Average for CPA0001</td><td>33.29%</td></tr> <tr> <td>Weighted Average for CPA0003</td><td>33.83%</td></tr> </table>	Stove model	%	CH2200	32.65%	CH2300	33.48%	CH5200	36.41%	Weighted Average for CPA0001	33.29%	Weighted Average for CPA0003	33.83%
Stove model	%												
CH2200	32.65%												
CH2300	33.48%												
CH5200	36.41%												
Weighted Average for CPA0001	33.29%												
Weighted Average for CPA0003	33.83%												
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes												
Details of monitoring equipment:	Sampling of the households												
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	CPA DD does not specify the accuracy of the monitoring equipment (thermometer, moisture measuring meter and mass balance). Verification team confirms that the accuracy of the monitoring equipment as stated in the MR represent good monitoring practise based on sectoral expertise.												
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA												
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DD.												
Company performing the calibration(internal or external calibration):	NA												
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA												
Is (are) calibration(s) valid for the whole reporting period?	NA												
If applicable, has the reported data been cross-checked with other available data?	The data has been cross-checked with the WBT test documents.												
How were the values in the monitoring report verified?	NA												
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.												
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA												

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Total number of stoves installed (N_{all})
Measuring frequency/Time Interval:	Continuous
Reporting frequency:	Yearly
Reported value:	CPA0001: 9,157 CPA0003: 4,785
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Sales database
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	An electronic sales database has been maintained for the project activity.
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DD.
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the value of parameter has been cross-checked with the monitoring database and sample households and the hard copy records were also checked during the OSV.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling (SOF)
Measuring frequency/Time Interval:	Yearly
Reporting frequency:	Yearly
Reported value:	0.829
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from the monitoring survey of

	samples
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA.
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DD.
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, reported data in MR has been compared with monitoring survey report and the ER sheet
How were the values in the monitoring report verified?	The values in the monitoring report were compared against the values in ER sheet
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	The amount of woody biomass consumption that is consumed through the continued use of old stoves (μ_{old})
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	1,726 kg/year
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from monitoring survey of samples
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of	NA. QA/QC procedures stated in MR comply with CPA-DD.

calibration, does the selected frequency represent good monitoring practise?	
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the value of parameter has been calculated based on 2 other parameters and has been cross-checked with them.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	The fraction of end users that are still using baseline (replaced) stoves (f_{old})
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	19.6%
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from monitoring survey of samples
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DD.
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, reported data in MR has been compared with monitoring survey report and the ER sheet
How were the values in the monitoring report verified?	NA
Does the data management (from data	Yes, the data management ensures correct transfer

generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of CPA-DD):	Calculated average stove operation years in the monitoring period (Stove_{year})
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	CPA0001: 1.00 CPA0003: 0.91
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from monitoring survey of samples
Is accuracy of the monitoring equipment as stated in the CPA-DD? If the CPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA.
Is the calibration interval in line with the monitoring plan of the CPA-DD? If the CPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with CPA-DD.
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, reported data in MR has been compared with monitoring survey report and the ER sheet
How were the values in the monitoring report verified?	Yes, reported data in MR has been compared with monitoring survey report and the ER sheet
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	5 June 2015	Initial publication.
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