



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

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	African Improved Cooking Stoves Programme of Activities UNFCCC Ref No.5432	
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	4.3	
<b>Version number of the verification and certification report</b>	02	
<b>Completion date of the verification and certification report</b>	27/11/2019	
<b>Monitoring period number and duration of this monitoring period</b>	Sixth monitoring period Duration - 25/10/2017 – 30/06/2019	
<b>Number and version number of the monitoring report to which this report applies</b>	Number : Second Version: 4.0	
<b>Coordinating/managing entity (CME)</b>	Envirofit International Ltd	
<b>Host Parties</b>	<b>Host Parties of the PoA</b>	<b>Is this a host Party to a CPA covered in this report? (yes/no)</b>
	Nigeria	Yes
	Ghana	No
	Liberia	No
<b>Applied methodologies and standardized baselines</b>	AMS-II.G ver 3.0: Energy efficiency measures in thermal applications of non-renewable biomass Standardized baseline: NA	
<b>Mandatory sectoral scopes</b>	Sectoral scope: 3: Energy demand	
<b>Conditional sectoral scopes, if applicable</b>	None	
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report</b>	31,440 tCO <sub>2</sub> e	
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	4,862 tCO <sub>2</sub> e	
<b>Name and UNFCCC reference number of the DOE</b>	Earthood Services Private Limited E-0066:	
<b>Name, position and signature of the approver of the verification and certification</b>		

report



Dr. Kaviraj Singh  
Managing Director

## SECTION A. Executive summary

The aim of the PoA is the distribution of improved biomass cookstove in Ghana, Nigeria and Liberia. Thus, PoA through the distribution aims at reducing the GHG emissions by replacing the less efficient non-renewable biomass based cookstove with more efficient one.

In the absence of the PoA non-renewable biomass (wood and charcoal) is used as fuel in the traditional three stone cookstoves. The distributed stove has better efficiency; thus, it provides same amount of energy with less fuel consumption and also releases less the GHG emission.

This verification covers the stove distribution in Nigeria for three CPAs i.e., 5342-P1-0007-CP1, 5342-P1-0008-CP1, 5342-P1-0009-CP1.

The verification team confirms that the total emissions achieved during this monitoring period 25/10/2017 – 30/06/2019 are 4,862 tCO<sub>2</sub>e.

### **Scope of verification:**

The verification is an independent and objective review, of ex-post determination of the monitored reductions in GHG emissions, by the DOE. The verification includes the implementation and operation of the PoA as set out in the revised accepted PoA-DD/1/ & CPA-DDs/2-4/ viz., 5342-P1-0007-CP1, 5342-P1-0008-CP1, 5342-P1-0009-CP1 in the monitoring period.

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

- (i) The approved methodology AMS-II.G ver 3.0: Energy efficiency measures in thermal applications of non-renewable biomass/6/ applied in the PoA-DD/1/ & CPA-DDs/2,3,4/
- (ii) The registered and revised accepted PoA-DD & CPA-DDs and monitoring plan/1,2,3,4/
- (iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (iv) The CDM Validation and Verification Standard (VVS) for PoA version 2.0/9/
- (v) The CDM Project Standard (PS) for PoA /7/ and Project Cycle Procedure (PCP) for PoA version 2.0 /9/
- (vi) Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions

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

### **Verification Process:**

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

- a) Contract with CME and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
- b) Completeness check of Monitoring Report
- c) Publication of Monitoring Report at UNFCCC website
- d) Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit (including sampling approach (refer Section D.4 of this report) to be applied)
- e) On site audit (refer Section D.2 of this report) (physical implementation of CPAs and interview with relevant stakeholders) by verification team consistent of Team Leader and all Technical Experts, as a minimum
- f) Follow up activities e.g., interviews (refer Section D.3 of this report)

- g) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)
- h) Independent technical review (refer Section F of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and corresponding supporting evidences)
- i) Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
- j) Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance to UNFCCC, as appropriate.

### Verification Conclusion:

Based on the outcome of the verification process of the registered/revised accepted PoA “African Improved Cooking Stoves Programme of Activities” and its 03 CPAs (5342-P1-0007-CP1, 5342-P1-0008-CP1, 5342-P1-0009-CP1) for the monitoring period 25/10/2017 – 30/06/2019 (including both dates) we confirm that the implementation of referenced registered/revised accepted PoA and CPAs being verified are complying with applicable CDM rules and regulations as stated in the Monitoring Report (final) Ver 4.0, dated 21/11/2019.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodologies AMS-II.G ver 3.0: Energy efficiency measures in thermal applications of non-renewable biomass/6/ and the monitoring plan contained in the registered PoA-DD/1/.

Earthood Services Private Limited is able to certify that the emission reductions from the registered CDM PoA UN#5342 “African Improved Cooking Stoves Programme of Activities” in Nigeria during the period 25/10/2017 – 30/06/2019 (including both days) amount to 4,862 tCO<sub>2</sub>e. Therefore, this is being submitted for request for issuance, as per UNFCCC procedures.

## SECTION B. Verification team, technical reviewer and approver

### B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
2.	Verifier	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
3.	Technical Expert	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
4.	Methodology Expert	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
5.	Local Expert	EI	Luka	Kumden	Central Office	Y	N	N	Y
6.	Trainee (Verifier)	IR	Vatsa	Vaishali	Central Office	Y	N	N	Y
7.	Trainee (Verifier)	IR	Sahni	Rahi	Central Office	Y	N	N	Y

### 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	Gautam	Ashok	Central Office

2.	TA to TR	IR	Gautam	Ashok	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

## SECTION C. Application of materiality in conducting the verification

### C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Observational error by monitoring survey staff of CME/CPA implementer while recording the responses of users in relation to survey parameters	High	03 CPAs are being verified for the first time and there may be lack of experience. The survey is conducted for representative samples of population, which may impact the population significantly. Surveyors may be unsupervised at the site.	Verification team randomly selected the samples from CME surveyed HHs. The recorded survey forms by CME were checked with DOE field observations. The verification team interviewed the monitoring staff and checked their training records.
2.	Calculation Errors	Med	The process is manual and therefore there is potential risk of errors / omissions/misstatements.	All calculations were checked by verification team with respect to applicable requirements under various documents viz., methodology, PoA DD/1/, CPA DDs/2,3,4/ etc.

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

In accordance with CDM VVS for PoAs, Version 02.0/9/ the prescribed thresholds for materiality for CDM PoAs are as under:

Type of PoA	PoAs comprising large-scale CPAs			PoAs comprising only small-scale CPAs	PoAs comprising only micro-scale CPAs
Emission Reductions (tCO <sub>2</sub> e)/year	500,000 or more	300,001 to 499,999	300,000 or less		
Materiality Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The applicable materiality threshold is 5% as PoA comprises only small-scale CPAs.

Particulars / Monitoring Report	MR Version (Public)	MR Version (Revised/Final)
Emission Reductions Achieved (tCO <sub>2</sub> e) in this monitoring period	8,961	4,862*
Applicable Threshold (%) as per CDM VVS for PoAs Version 02.0	5.0%	5.0%

\* The decrease in the ER's of the final monitoring report/13/ is due to typographical errors identified in transferring the data from the ER sheet for which CAR#04 was raised (please refer to appendix 4 of the verification report for more details on finding) and have been taken into account at the time of verification.

Monitored Parameter (Symbol / Description )	Reporting Frequency	Number of Discrete Data* (Total)  Total (100%)	Sample selected for verification Sample (100%)	Type of error identi fied	Impact on ERs	
					ERs impacted (Sample)	ERs impacted (Population based on extrapolatio n)
CPA-5342-P1-0007-CP1, 5342-P1-0008-CP1, 5342-P1-0009-CP1						

For ICS:						
$\eta_{new,y}$	Annually	20	20(100% data was checked)	None	NA	NA
$N_{all}$	Annually	CPA 10: 3,435 CPA 11: 2,305 CPA 12: 2,197 (7,937)	ICS database/5/ was checked for the information and 16 ICS were checked during the site visit/10/	None	NA	NA
$SOF$	Annually	119 ( $SOF_{charcoal}$ : 60 , $SOF_{woodfuel}$ : 59 per model)	Usage and Monitoring survey/11/ results were checked, and 16 ICS were checked on-site/10/	None	NA	NA
$f_{old}$	Annually	117 ( $f_{oldCharcoal}$ : 58 , $f_{oldwoodfuel}$ : 59)	Usage and Monitoring survey/11/ results were checked, and 16 ICS were checked on-site/10/	None	NA	NA
$\mu_{old}$	Annually	14 ( $\mu_{old Charcoal}$ 7 , $\mu_{old Woodfuel}$ 7))	Usage and Monitoring survey/11/ results were checked, and 16 ICS were checked on-site/10/	None	NA	NA
$Stove_{year}$	Annually	CPA 10: 3,435 CPA 11: 2,305 CPA 12: 2,197 (7,937)	ER calculation sheet/12/ was checked. (100% data checked)	None	NA	NA

Based on the above table it can be confirmed that the actual individual and aggregated material error is determined for the registered PoA as per CDM VVS for PoA /09/. The applicable threshold for materiality in accordance with CDM PoA VVS Version 2 para 308(d)/9/ is 5%.

## SECTION D. Means of verification

### D.1. Desk/document review

A desk review was conducted by the verification team that included:

- A review of data and information provided for its completeness.
- A review of registered monitoring plan, monitoring methodologies including applicable tools, standards and the applicable applied standardized baselines.

All the documents reviewed during the verification process are listed in the Appendix 3 of VCR.

**D.2. On-site inspection**

Duration of on-site inspection: 07/10/2019 to 10/10/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting: Introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit including venue for closing meeting and any concerns from PP.	Nigeria	07/10/2019	Shreya Garg
2.	Implementation and operation of project activity (project boundary, technology, project equipment, monitoring and metering equipment) as per registered PDD/previous verification.	Nigeria	07/10/2019	Shreya Garg
3.	Management and monitoring procedures followed at project site.	Nigeria	07/10/2019	Shreya Garg
4.	Management and operational system: Documentation, allocation of responsibilities, qualification and training, data recording & archiving, internal audit and management review and emergency procedures.	Nigeria	08/10/2019	Shreya Garg
5.	Compliance of monitoring procedures followed at project site with registered PoA DD and monitoring methodology.	Nigeria	08/10/2019	Shreya Garg
6.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.	Nigeria	08/10/2019	Shreya Garg
7.	Review of ER calculations in accordance with applied methodology and relevant tools.	Nigeria	09/10/2019	Shreya Garg
8.	Physical inspection of the project activity: Site visit and interview of monitoring personnel	Nigeria	07/10/2019-10/10/2019	Shreya Garg
9.	Compilation of the audit findings.	Nigeria	10/10/2019	Shreya Garg
10.	Closing Meeting: Submission of the audit findings to the client and agreement on the issues raised and agreement on timelines.	Nigeria	10/10/2019	Shreya Garg

**D.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Diedo	Elizabeth	Envirofit International	07/10/2019-09/10/2019	CPA Implementation	Shreya Garg
2.	Lohia	Rohit*	Envirofit International (Carbon Projects Development Manager)	07/10/2019-09/10/2019	CPA Implementation	Shreya Garg
3.	Olaore	Abiodun	Envirofit	07/10/2019-09/10/2019	ER Calculation and Monitoring Report	Shreya Garg
4.	Adeife	Adeboye	Envirofit	07/10/2019-09/10/2019	Monitoring Survey	Shreya Garg
5.	Sobowale	Murtala	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg
6.	Ibrahim	Olusegun	ICS User	07/10/2019	DOE Field	Shreya Garg

			(ECONOFIRE)		Survey	
7.	Hyacinth	Obi	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg
8.	Dolu	Biola	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg
9.	Ike	Ogbodu	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg
10.	Ezekiel	Kolawole	ICS user (ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
11.	Imosu	Imoleayo	ICS User (ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
12.	Lawal	Rashidat	ICS User (ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
13.	George	Ruth	ICS User ((ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
14.	Akinosun	Magret	ICS User (ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
15.	Taiwo	Omidiran	ICS User (ECONOCHAR)	08/10/2019	DOE Field Survey	Shreya Garg
16.	Nosiru	Bose	ICS User (ECONOCHAR)	10/10/2019	DOE Field Survey	Shreya Garg
17.	Agbaje	Iyabo	ICS User (ECONOCHAR)	10/10/2019	DOE Field Survey	Shreya Garg
18.	Audu	Helen	ICS User (ECONOFIRE)	09/10/2019	DOE Field Survey	Shreya Garg
19.	Alfred	Lami	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg
20.	Biskila	Taniang	ICS User (ECONOFIRE)	07/10/2019	DOE Field Survey	Shreya Garg

\*Rohit had been interviewed telephonically during the opening and closing meeting and at various other occasions.

#### D.4. Sampling approach

##### CME Sampling Approach

For the purpose of sampling, CME has followed the CDM guidelines for Sampling and surveys for CDM project activities and programmes of activities version 4.0/14/ which is in-line with the PoA DD/1/. The CME has applied Simple Random Sampling at PoA level for different monitoring parameters as per validated PoA DD /1/and registered CPA DDs/2-4/. 95/10 confidence precision was applied by CME in the sampling which is appropriate as per the single sampling covering 03 CPAs. Thus, CPA wide single sampling plan was used by the CME. Please refer to section E.3 of MR/13/ which discusses the CME sampling approach in detail.

##### DOE Sampling Approach

In order to meet the requirements of paragraph 28 of Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7/15/ the verification team applied acceptance sampling in the verification (in accordance with para 28). As per para 33 of the Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7/15/-

*“A DOE may select a different sample size than the one indicated in paragraph 31 above, either by choosing a different value for the consumer risk and producer risk (e.g. 20 per cent for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply:*

*(a) The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 t CO<sub>2</sub> eq.;*

*(b) The security conditions in the project region prevents inspection of many samples (e.g. conflict zones); or*

*(c) The project activity or the PoA is located in a least developed country or a host Party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified.”*

The current verification is for CPA Ref. No. 5342-P1-0007 to 5342-P1-0009-CP1.



Since, the the total ERs achieved and estimated for the CPAs under verification are less than 100,000t CO<sub>2</sub>eq, the verification team has applied para 33(a) of Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7 and chosen 8 as sample size for each sampling frame.

The verification team has selected the sample size as 8 HHs for the purpose of physical on-site inspection / household visit to check the acceptability of CME's sampling results or otherwise.

*DOE Sample Size:*

CPA Ref No.	AQL	UQL	Producer Risk	Consumer Risk	Sample Size; Min	Acceptance No.
CPA 07-09	0.5%	20%	5%	20%	8	0

Considering the above input values, a sample size of 8 was required as per Table 1 in the referred Standard for the monitoring period. Therefore, the team leader visited 08 samples for each (there are 02 models) of the ICS model (i.e., 16 in total). The samples were chosen randomly (using website [www.randomizer.org](http://www.randomizer.org)) out of total of 119 CME's monitored samples (as part of monitoring survey). All the households had consistent answer as reported in the monitoring survey sheet. thus, no discrepancy was observed. Accordingly, Acceptance number (c) thus determined for the sample size is 0 and a sample size of 8 (each stove type- wood and charcoal) meets the criteria in line with "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7,".

#### **D.5. Clarification requests, corrective action requests and forward action requests raised**

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
<b>General</b>			
Compliance of the monitoring report with the monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verifications	-	-	FAR#01
CPAs considered for verification and covered in this report	-	-	-
<b>Programme of activities</b>	-	-	-
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents <sup>1</sup>	-	-	-
• Changes to the programme design	-	-	-
• Addition of CPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
<b>Component project activities</b>			
Compliance of the CPA implementation with the included CPA design document	-	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
• Corrections	-	-	-

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	-	-	-
• Changes to the project design	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	CL#03	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
• Data and parameters monitored	-	CAR#04	-
• Implementation of sampling plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	CAR#04	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	-	-	-
• Remarks on difference from estimated value in included CPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (Evidences)	CL#02	-	-
<b>Total</b>	<b>02</b>	<b>01</b>	<b>01</b>

## SECTION E. Verification findings

### E.1. General

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

<b>Means of verification</b>	The monitoring report form used is CDM-PoA-MR-FORM version 03.0/17/ which is an appropriate form and the latest version available at the time of verification/submission for request for issuance. All the sections of the aforesaid form were duly filled as per the guidelines and provided all the relevant details.
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	The final monitoring report /13/ is found to be in-line with the latest CDM-PoA-MR-form/17/ available and the instructions therein.

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

There was one FAR (listed as FAR#01 under Appendix 4) raised at the time of previous verification (other CPA), related to the stoves considered by the CME to claim emission reduction for which end user data is available which is part of this verification, the end user database of all the stoves considered for the ER calculation for the previous verification could not be confirmed at the time of previous verification by verifying DOE.

Therefore, the verification team raised this FAR#01 for the CPAs being verified during the current verification. Based on the response submitted by CME and the ICS database/5/ shared by the CME, it was confirmed that CME has considered only those stoves for the ER calculation in the present verification for which the end user database is available. Also, no FAR raised from the current verification. Please refer to Appendix #4 for more details.

**E.1.3. CPAs considered for verification and covered in this report**

<b>Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period</b>	<b>Is the CPA considered for this verification? (yes/no)</b>	<b>The date when the CPA was included</b>	<b>Version of the PoA-DD</b>	<b>Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)</b>
African Improved Cooking Stoves Programme of Activities CPA 00001 (Ghana) Version: 3.2 Ref: 5342-P1-0001-CP1	No	06/12/2012	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00002 (Ghana) Version: 3.0 Ref: 5342-P1-0002-CP1	No	21/10/2013	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00003 (Ghana) Version: 2.0 Ref: 5342-P1-0003-CP1	No	08/11/2013	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00004 (Nigeria) Version: 6.1 Ref: 5342-P1-0004-CP1	No	23/09/2014	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00005 (Nigeria) Version: 6.1 Ref: 5342-P1-0005-CP1	No	23/09/2014	Version 4.3 dated 07/06/2014	NA

African Improved Cooking Stoves Programme of Activities CPA 00006 (Liberia) Version: 2.0 Ref: 5342-P1-0006-CP1	No	31/12/2014	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00010 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0007-CP1	Yes	05/04/2019	Version 4.3 dated 07/06/2014	No (This is the first request for issuance for this CPA)
African Improved Cooking Stoves Programme of Activities CPA 00011 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0008-CP1	Yes	05/04/2019	Version 4.3 dated 07/06/2014	No (This is the first request for issuance for this CPA)
African Improved Cooking Stoves Programme of Activities CPA 00012 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0009-CP1	Yes	05/04/2019	Version 4.3 dated 07/06/2014	No (This is the first request for issuance for this CPA)
African Improved Cooking Stoves Programme of Activities CPA 00013 (Liberia) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0010-CP1	No	05/04/2019	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00014 (Liberia) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0011-CP1	No	05/04/2019	Version 4.3 dated 07/06/2014	NA

African Improved Cooking Stoves Programme of Activities CPA 00015 (Liberia) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0012-CP1	No	05/04/2019	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00007 (Ghana) supported by Republic of Korea Version: 2.0 Ref: 5342-P1-0013-CP1	No	12/04/2019	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00008 (Ghana) supported by Republic of Korea Version: 2.0 Ref: 5342-P1-0014-CP1	No	12/04/2019	Version 4.3 dated 07/06/2014	NA
African Improved Cooking Stoves Programme of Activities CPA 00009 (Ghana) supported by Republic of Korea Version: 2.0 Ref: 5342-P1-0015-CP1	No	12/04/2019	Version 4.3 dated 07/06/2014	NA

## E.2. Programme of activities

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

<b>Means of verification</b>	<p>The PoA through the distribution of efficient improved cookstoves in Nigeria aims at reducing GHG emissions by replacing less efficient non-renewable biomass based cookstove. During this monitoring period, 3 CPAs were included. This monitoring period includes the implementation and monitoring of 3 CPAs from 5342-P1-0007-CP1, 5342-P1-0008-CP1 &amp; 5342-P1-0009-CP1 in Nigeria. The coordinating and managing entity (CME) is Envirofit International Ltd and CERPD Co., Ltd. is the CPA implementer/18/. CERPD has fully sponsored the ICS to beneficiary households in the CPAs, as well covered the cost of operation and management of the CPAs. Their roles and responsibilities are defined in the signed agreement. In the absence of the project activity, cookstoves used were less efficient and used non-renewable woody biomass leading to release GHG emissions in the baseline. CPAs of this PoA involve dissemination of two models of ICS:</p> <ol style="list-style-type: none"> <li>1. Econofire (Wood Fuel)</li> <li>2. Econochar (Charcoal)</li> </ol> <p>Stove Specifications:/19/</p>
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Parameter description	Econofire /SmartSaver Wood	Econochar /SmartSaver Charcoal
Thermal Efficiency	30.2 %	34.3 %
Unit Size	25.5 x 40 x 35.5 cm (height x width x depth)	28 x 37 x 42 cm (height x width x depth)
Unit Weight	2.7 kg	3.7 kg
CO emissions % improvement	77%	70%

The details of the ICS models installed were verified from the manufacturer's specification/19/ provided by the CME.

During the on-site visit the installation of the ICS claimed by the CME were checked and found to be in-line with the technical description provided in the registered PoA-DD/1/ and Monitoring report/13/.

Also, the verification team checked the implementation status of the project activity as defined in the registered PoA-DD/1/, and MR/13/.

Interview of the personnel involved in the QA/QC procedures revealed that the procedures mentioned in the PoA-DD/1/ were being followed and the monitoring manual /20/ regarding the procedure followed for monitoring was checked.

During the site visit the project location and coordinates were verified using the "Go geo-coordinates app" and found to be in-line with the registered PoA-DD/1/ and MR/13/.

Further, based on the review of ICS End-user database (presented in ER sheet)/12/, physical observations and interview conducted during the site visit, the verification team found that:

- The CPA(s) were implemented within the boundary of the PoA as described in the revised accepted PoA-DD/1/.
- The CME is same as that mentioned in the revised accepted PoA-DD/1/
- The implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PoA-DD/1/ and included CPA-DDs/2-4/.
- All physical features of the CPA proposed in the included CPA-DDs/2-4/ were in place
- The project participants/CPA implementer has operated the CPAs as per the included CPA DDs/2-4/.

An onsite verification was conducted by the verification team; 8 HHs with Econofire and 8 HHs with Econochar were visited. The uniqueness of the system was identified from UID written on the units on the cookstove itself/10/. Along with the unique ID the following details are also noted in the database:

- Name of customer
- Address / location of the customer
- Stove unique serial ID number
- Stove Model
- Stove distribution date
- Type of old / baseline stove replaced by ICS, i.e. the fuel type used in the old / baseline stove

The information of the installed cookstoves was also verified from the CME database/5/ which was cross checked for 16 samples (8 samples for each sampling frame) with the warranty cards and other on-site documents/10/.

The emission reductions being claimed during this monitoring period are lesser than the estimated emission reductions in the CPA-DDs/2-4/, as given in the table

	<p>under section E.3.6.5. for comparable estimated ERs in the CPA DDs/2-4/ for the corresponding period.</p> <p>The CPAs are below the threshold limits of 180 GWh/year (thermal) for type II as per the applied methodology/6/ and thus, the energy saving values for each CPAs can be confirmed from the following table:</p> <table border="1"> <tr> <td>CPA00010</td><td>7.66 GWhth</td></tr> <tr> <td>CPA00011</td><td>5.01 GWhth</td></tr> <tr> <td>CPA00012</td><td>5.13 GWhth</td></tr> </table> <p>The monitoring report was compared and verified against the description provided in the registered PoA-DD/1/ and found to be correct.</p>	CPA00010	7.66 GWhth	CPA00011	5.01 GWhth	CPA00012	5.13 GWhth
CPA00010	7.66 GWhth						
CPA00011	5.01 GWhth						
CPA00012	5.13 GWhth						
<b>Findings</b>	CL#02 was raised and resolved						
<b>Conclusion</b>	<p>The verification team confirms that the physical features (technology/type of ICS) of the implementation were in accordance with the registered PoA-DD/1/.</p> <ul style="list-style-type: none"> <li>The distribution of ICS is completed and has reached the estimated quantity given in the respective CPA-DDs/2-4/.</li> <li>The actual operation is in line to the respective CPA-DD, which is further explained under Section E.3 of this report. 5342-P1-0007-CP1, 5342-P1-0008-CP1, 5342-P1-0009-CP1 are less than the estimated ERs for the same period. The reason for decrease is limited distribution of ICS as compared to the estimated quantity of ICS distribution. The total actual CERs for CPAs (combined) were less for comparable monitoring period. Apart from this, no information about data and variables was identified that may surpass the estimated quantity of ERs in the respective CPA DDs/2-4/.</li> <li>The difference in emission reductions achieved by each specific case CPA DD in comparison to that estimated quantity in the corresponding CPA DDs/2-4/ are appropriately justified.</li> </ul>						

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

<b>Means of verification</b>	<p>The verification team during the site visit assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system through physical inspection. The roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in the MR /13/ and were verified through interviews with the local staff.</p> <p>CPA implementers maintain the CPA distribution record /23/ at the time of sale to note the details of the end user and provide end user agreement at the time of installation which maintains the record of the installation, the serial number of the stove installed, end user details and the kind of stove replaced. All the information is transferred to ICS database/5/ by the CME which was checked during the site visit to confirm that the management system is in place. The sales database was crosschecked with installation certificate, delivery note to confirm that information for any system installed (unique ID) is consistent between the records. The unique IDs of the ICS were checked for all the sampled systems seen during site visit to ensure that no number is repeating in the database and the same system is not credited in any other CPA either, thus avoiding the double counting.</p> <p>For data survey, a monitoring team has been organized by the CME consisting of trained monitoring staff, who conducted the WBT test and Usage surveys/24/. The monitoring manager at the CME is responsible for QA/QC of the data, analysis and reporting in the monitoring report. QA/QC procedures were found being followed during the site visit. Completed monitoring survey forms with test results/24/ and end user agreement /23/ were made available to the verification team for assessment of the information of HHs and survey and test results, in the sales data and monitoring data mentioned in ER calculator /12/. Monitoring team staff was interviewed by the verification team regarding the monitoring procedures, using the water boiling test and filling the monitoring questionnaires. The staff explained the complete procedure followed for WBT test and the monitoring survey form filling. The evaluation of the WBT test is done in the main office. The verification team also</p>
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	checked training records of the monitoring & data recording personnel/20/. Thus, it can be confirmed that the Implementation and operation of the management system has been done in line with the registered PoA DD/1/ and CPA DDs/2-4/.
<b>Findings</b>	CL#03 was raised and resolved
<b>Conclusion</b>	The verification team confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.

### E.2.3. Post-registration changes

#### E.2.3.1. Corrections

No correction was observed

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

N/A

#### E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

N/A

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

Changes in the programme design were included through PRC-5342-001, which made to expand the project boundary to include Liberia under the PoA. The PRC was approved on 16/07/2014. For more detail, refer the following link:

<https://cdm.unfccc.int/PRCContainer/DB/prcp237694862/view>

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

N/A

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

N/A

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

N/A

### E.3. Component project activities

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

Means of verification	The registered PoA aims at disseminating improved cookstoves in Ghana, Liberia and Nigeria. The PoA is primarily designed to replace the existing non-renewable woody biomass dependent cookstove by installing Improved cookstoves instead to provide easy access to clean and affordable energy. CERP Co., Ltd. is the implementer of the CPAs and has fully implemented the CPAs with the help of Sales and Distribution Partner (SDP). The same has been verified from the agreement between the CME and CPAI/18/. This monitoring period includes the implementation and monitoring of 3 CPAs- CPA 5342-P1-0007-CP1 to CPA 5342-P1-0009-CP1 in Nigeria.							
	CPA no.	First ICS Installation date	Inclusion date	Crediting period	No. of units		Estimated ERs	ERs achieved
					Econofir e	Econocha r		



	5342 -P1- 0007 -CP1	05/11/201 8	05/04/201 9	05/04/201 9			10,480	2,091
					967	2468		
	5342 -P1- 0008 -CP1	05/11/201 8	05/04/201 9	05/04/201 9			10,480	1,370
					711	1594		
	5342 -P1- 0009 -CP1	05/11/201 8	05/04/201 9	05/04/201 9			10,480	1,401
					399	1798		
	MOV	As checked from the ICS database/ 5/	Checked from the UN website /25/	Checked from the UN website /25/	Check- ed from ICS data base/5/	Check- ed from ICS data base/5/	Checked from the CPA DDs /2- 4/	Checke d from the ER sheet/12 /
	<p>The verification team confirms that:</p> <ol style="list-style-type: none"> <li>Each of the independent subsystems/measures included in the CPA of a PoA is no larger than 1% of the small-scale thresholds (180 GWh or 1.8 GWhth/year) defined by the applied methodology criteria stated in the CPA DD/2-4/ and PoA DD/1/ as verified through the ER sheet/12/.</li> <li>The target population is households and communities/SMEs only as verified through site visit.</li> </ol> <p>The implementation of the CPA as mentioned above is within the geographical boundary of PoA-DD/1/, which constitutes the physical boundary as well. Envirofit International Ltd. is the CME of the CPA and CERPD Co., Ltd. is the CPAI/18/.</p> <p>The reference number and the inclusion date of CPAs have been checked and verified from the UN website/25/ and the details are found correct and consistent. The start date of CPAs was confirmed from the evidence provided /21/. The ICS are installed across Nigeria.</p> <p>The verification team also confirmed following:</p> <ol style="list-style-type: none"> <li>Presence of CME logo on distributed units and record through onsite observation.</li> <li>Unique stove ID punched on each stove onsite observation.</li> <li>Carbon right transfer through end user agreement/23/.</li> </ol>							
<b>Findings</b>	FAR#01 was raised and resolved.							
<b>Conclusion</b>	<ol style="list-style-type: none"> <li>The verification team is of the opinion that physical features of the CPA have been implemented in accordance with the registered CPA-DD/2-4.</li> <li>No specific monitoring equipment had to be installed according to the monitoring plan.</li> <li>It is also confirmed, through the physical site visit and review of the supporting documentation that physical features of the component CPA have been implemented in accordance with the CPA-DD/2-4/.</li> <li>The CPA was also found to be completely operational in line with the CPA-DD/2-4/.</li> <li>The information provided in the relevant sections of the monitoring report appropriately describe the implementation and operational status of the PoA</li> </ol>							

### E.3.2. Post-registration changes

#### E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

No deviations identified in the current verification and there exist no previously approved deviations for the CPAs under verification.

**E.3.2.2. Corrections**

N/A

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

No changes to the start date of the crediting period.

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

N/A

**E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

N/A

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

N/A

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

N/A

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

<b>Means of verification</b>	The monitoring plan as contained in CPA-DDs/2-4/ was reviewed against the monitoring requirements of the applied methodology AMS-II. G version 03 /6/ as well as PoA-DD/1/ with reference to the technology involved. Based on this review, it was found that the monitoring plan contained in the CPA DDs/2-4/ includes all the required parameters to be monitored in the context of the CPA design and description and allows proper determination of emission reductions in accordance with PoA DD/1/ and applied methodology AMS-II.G version 03/6/.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The monitoring plan is in line with the approved methodology AMS II. G Ver.3 /6/, that is included in the CPA-DDs /2-4/

**E.3.4. Compliance of monitoring activities with the registered monitoring plan****E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period****Annual average biomass consumption per appliance, Tonnes/year,  $Q_{\text{biomass}}$** 

<b>Means of verification</b>	The value of the parameter is fixed at the time of first CPA and has been calculated as per the applied methodology/6/. The value for firewood stoves and charcoal stoves is 5.01 and 5.52 respectively. It was checked from the CPA-DDs/2-4/
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ are consistent with the CPA DDs/2-4/. The applied value is correct and justified.

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

<b>Means of verification</b>	The value of the parameter is fixed at the time of first CPA and has been calculated as per the data extracted from FAO and IPCC. The value for $f_{\text{NRB},y}$ is 0.93. It was checked from the CPA-DDs/2-4/ and ER calculation sheet/12/.
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ are consistent with the CPA-DDs/2-4/. The applied

	value is correct and justified.
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**Net calorific value of the non-renewable biomass that is substituted, TJ/tonne,  $NCV_{biomass}$** 

<b>Means of verification</b>	The value of the parameter is 0.015 which is a default value stated by the applied methodology/6/ and was checked from the CPA-DDs/2-4/ and ER calculation sheet/12/.
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ with the CPA-DDs/2-4/. The applied value is correct and justified.

**Emission factor for the substitution of non-renewable woody biomass by similar consumers,  $tCO_2/TJ$ ,  $EF_{projected\_fossilfuel}$** 

<b>Means of verification</b>	The value of the parameter is 81.6 which is a default value stated by the applied methodology/6/.and was checked from the CPA-DDs/2-4/ and ER calculation sheet/12/.
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ are consistent with the CPA-DDs/2-4/. The applied value is correct and justified.

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

<b>Means of verification</b>	The value of the parameter is 0.106 which is a default value stated by the applied methodology/6/.and was checked from the CPA-DDs/2-4/ and ER calculation sheet/12/.
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ are consistent with the CPA-DDs/2-4/. The applied value is correct and justified.

**Net to gross adjustment factor to account for leakages, Fraction,  $LAF$** 

<b>Means of verification</b>	The value of the parameter is 0.95 which is a default value stated by the applied methodology/6/ and was checked from the CPA-DDs/2-4/ and ER calculation sheet/12/.
<b>Findings</b>	No Findings were raised
<b>Conclusion</b>	The value in the monitoring report and corresponding emission reduction calculations spreadsheet/12/ are consistent with the CPA-DDs/2-4/. The applied value is correct and justified.

**E.3.4.2. Data and parameters monitored**
**Efficiency of the device being deployed as part of the project activity in year y, %,  $\eta_{new,y}$** 

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	Yes. Moisture meter, Digital Thermometer and Weighing Scale. See section E.3.5. for the detailed assessment of calibration of monitoring equipment.
	How were the values in the monitoring report verified?	The efficiency of the stoves deployed were as follows:

		<p>i) Econofire- 29.32%</p> <p>ii) Econochar-33.53%</p> <p>The designed efficiency of the two models distributed was as follows/2/,/3/,/4/:</p> <p>Econofire: 30.2%</p> <p>Econochar: 34.3%</p> <p>Thus, the efficiency of the deployed devices/35/ was found to be acceptable because it was comparable to the design efficiency (maximum efficiency) of the project devices as verified from the CPA-DDs/2/,/3/,/4/.</p> <p>The efficiency has been calculated through the WBT test performed for sample of stoves which is in-line with the PoA sampling plan/1/. The WBT tests were performed for 20 stoves in all (10 stoves per ICS model) as checked from the ER calculation sheet (WBT Summary)/12/.The sample size has been correctly determined in accordance to the registered sampling plan/1/. Also the number of samples ensures that the desired precision/ confidence is achieved. The total number of required samples for meeting the precision / confidence was 7 whereas a higher number of samples were monitored (10 samples) so as to ensure that the desired precision/ confidence is achieved.</p> <p>During the site visit, the verification team visited 16 HHs, out of which 9 were the houses where WBT was conducted. The end users surveyed confirmed that their stove was picked up for WBT and another stove was given to them. The team was able to confirm the UIDs of both original and replacement stoves through observation of the stove and the end user agreement/23/. The original stove numbers were also verified at the warehouse during the physical inspection by the assessment team.</p> <p>The values given in the ER sheet/12/ were checked with WBT sheets/35/ and found to be correct. The test has met the required confidence and precision.</p> <p>The team confirms that the applied value is correct and justified.</p>	
	<p>If applicable, has the reported data been cross-checked with other available data?</p>	<p>Yes. The efficiency values were cross-checked as stated in the ER calculation sheet with the WBT forms/35/.</p>	

		During the onsite assessment the team that performed the WBTs was interviewed confirming the protocol followed for the tests; the personnel responsible was aware of the procedures in the protocol. Also the stoves that were brought for WBTs were visited in the warehouse to confirm the serial numbers.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The CME has provided the training evidences/36/ for conducting the WBT to confirm that QA/QC procedure are followed in line with the registered monitoring plan.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
<b>Findings</b>	CL#03 was raised and resolved	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.	

**Total number of stoves installed, Number, Nall**

Means of verification	Criteria/Requirements	Assessment/Observations																	
	Measuring /Reading /Recording frequency	Annually.																	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.																	
	Monitoring equipment	NA																	
	How were the values in the monitoring report verified?	<p>The values stated in the MR are as following:</p> <table><tr><td>Parameter</td><td>5342-P1-0007-CP1</td><td>5342-P1-0008-CP1</td><td>5342-P1-0009-CP1</td></tr><tr><td>N<sub>wood</sub></td><td>967</td><td>711</td><td>399</td></tr><tr><td>N<sub>Charcoal</sub></td><td>2,468</td><td>1,594</td><td>1,798</td></tr><tr><td><b>Nail</b></td><td><b>3,435</b></td><td><b>2,305</b></td><td><b>2,197</b></td></tr></table> <p>The parameter is recorded for each sale in the ICS database/5/ which was checked for any duplicate entries against an end-user during assessment.</p> <p>The CME also keeps end user agreement as installation evidence/23/.</p> <p>Each stove has Unique ID, which is mentioned in the ICS database and claims for ERs.</p> <p>The entries in database were checked</p>			Parameter	5342-P1-0007-CP1	5342-P1-0008-CP1	5342-P1-0009-CP1	N <sub>wood</sub>	967	711	399	N <sub>Charcoal</sub>	2,468	1,594	1,798	<b>Nail</b>	<b>3,435</b>	<b>2,305</b>
Parameter	5342-P1-0007-CP1	5342-P1-0008-CP1	5342-P1-0009-CP1																
N <sub>wood</sub>	967	711	399																
N <sub>Charcoal</sub>	2,468	1,594	1,798																
<b>Nail</b>	<b>3,435</b>	<b>2,305</b>	<b>2,197</b>																

		to confirm the total number presented in the MR/13/. 16 samples were visited physically also, to confirm that the details of the entries in the database/5/ are correct.
	If applicable, has the reported data been cross-checked with other available data?	Yes. Sampled number of entries (16) were checked with the end user agreement /23/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Representatives of the CME working the host country were interviewed to understand and confirm that the database management is done in line with the registered monitoring plan
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
<b>Findings</b>	No findings were raised	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.	

**Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling, Fraction, SOF**

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	<p>The values stated in the MR are as following:</p> <p>SOF<sub>charcoal</sub>: 0.967</p> <p>SOF<sub>wood</sub>: 1.000</p> <p>Which is calculated using following formula:</p> <p><math>SOF = n_{Operational} / n_{Total}</math>, where</p> <p>n = number of samples</p> <p>This parameter is monitored ex-post through sampling. 60 Samples for Charcoal cookstoves and 59 Samples for woodfuel cookstoves were monitored for stove type. As per the equation 1 of Guidelines: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0/14/ the required samples calculated for this parameter was found to be 43 for meeting the precision / confidence level (95/10)</p>

		<p>whereas CME has monitored more number of samples i.e.60 so as to ensure that the desired precision / confidence is achieved. Thus, the monitored sample number was found to be acceptable.</p> <p>Based on the end user survey the parameter was calculated and the values applied can be verified from the monitoring survey sheet/12/.</p> <p>16 samples were visited by the verification team during the site visit to confirm the result presented in the survey sheet/12/.</p> <p>No discrepancies were found during the site visit.</p> <p>Thus, it can be confirmed that the applied value has been correctly determined and applied.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. The results presented in the ER sheet/12/ were checked with monitoring survey forms/24/ and found to be have same information.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
<b>Findings</b>	No findings were raised.	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.	

#### Fraction of end users that are still using baseline stoves, Fraction, $f_{old}$

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	<p>The parameter is determined through survey and applying a simple formula to survey result:</p> <p><math>f_{old} = 1 - (\text{people not using old stove} / \text{total envirofit stove users})</math></p>

		<p>The values obtained in the ER sheet/11,12/ and the MR/13/ are as following:</p> <p>fold<sub>charcoal</sub>: 0.121</p> <p>fold<sub>wood</sub>: 0.119</p> <p>For survey 58 samples of Charcoal cookstove and 59 samples of Wood-fuel cookstove (total 117) were monitored by the CME.</p> <p>Thus, parameter is calculated through monitoring of users not using baseline stoves (<math>f_{nonold}</math>) as stated in the CPA-DD/2-4/.</p> <p>Based on the end user survey the parameter was calculated and the values applied can be verified from the monitoring survey summary presented in the ER sheet/12/</p> <p>16 samples were visited by the verification team during the site visit to confirm the result presented in the survey sheet/12/.</p> <p>No discrepancies were found during the site visit.</p> <p>Thus, it can be confirmed that the applied value has been correctly determined and applied.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. The results presented in the ER sheet/12/ were checked with monitoring survey forms/24/ and found to be have same information.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
<b>Findings</b>	No findings were raised.	
<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.	

**The amount of woody biomass consumption that is consumed through the continued use of old stoves, kg/year,  $\mu$ old**

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes /	Yes.



	No)	
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	<p>The parameter is determined through survey and applying following formula to survey result:</p> $U_{old} = (MPM_{after\ ICS} / MPM_{before\ ICS}) * \text{Total annual fuel consumption(kg)}$ <p>Where:</p> <p>MPM : Meals prepared monthly</p> <p>During the survey, the end users are asked for the number of meals they prepare on old stove and on new stove to calculate the value of MPM before and after ICS use.</p> <p>The values obtained in the ER sheet/11,12/ and the MR/13/ are as following:</p> <p><math>\mu_{old\ charcoal}</math>: 3,049</p> <p><math>\mu_{old\ wood}</math>: 1,551</p> <p>Out of 119 end users surveyed only 14 reported still using the old stoves: 7 Samples for Econochar stove and 7 Samples for Econofire stove. Thus, the final value is average of these 14 responses.</p> <p>Based on the end user survey the parameter was calculated and the values applied can be verified from the monitoring survey summary presented in the ER sheet/11,12/</p> <p>16 samples were visited by the verification team during the site visit to confirm the result presented in the survey sheet/11,12/.</p> <p>No discrepancies were found during the site visit.</p> <p>Thus, it can be confirmed that the applied value has been correctly determined and applied.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. The results presented in the ER sheet/12/ were checked with monitoring survey forms/24/ and found to be have same information.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA
<b>Findings</b>	CAR#04 was raised and resolved	

<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.
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**Calculated average stove operation years in the monitoring period. If stoves have been operating for 365 days, then  $\text{Stove}_{\text{year}} = 1.0$ . If less than 365 days, then  $\text{Stove}_{\text{year}}$  is represented as a fraction of 365 (eg. 180 days= 0.5), Year,  $\text{Stove}_{\text{year}}$**

Means of verification	Criteria/Requirements	Assessment/Observations															
	Measuring /Reading /Recording frequency	Annually.															
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.															
	Monitoring equipment	NA															
	How were the values in the monitoring report verified?	<p>The parameter is calculated for all the stoves disseminated under the CPAs by considering their date of installation and estimating the total number of days for which they operated in the current monitoring period.</p> <p>The values obtained in the ER sheet/12/ and the MR/13/ are as following:</p> <table><tr><td>Parameter</td><td>5342-P1-0007-CP1</td><td>5342-P1-0008-CP1</td><td>5342-P1-0009-CP1</td></tr><tr><td>STOVE<sub>yearwood</sub></td><td>0.12</td><td>0.12</td><td>0.12</td></tr><tr><td>STOVE<sub>yearcharcoal</sub></td><td>0.19</td><td>0.19</td><td>0.19</td></tr></table> <p>The above values were checked in the ER sheet/12/ for the calculation and found to be correct.</p> <p>The total stoves considered for calculating average values of stove year in the ER sheet/12/ are same as the number of stoves listed in the ICS database/5/.</p>				Parameter	5342-P1-0007-CP1	5342-P1-0008-CP1	5342-P1-0009-CP1	STOVE <sub>yearwood</sub>	0.12	0.12	0.12	STOVE <sub>yearcharcoal</sub>	0.19	0.19	0.19
	Parameter	5342-P1-0007-CP1	5342-P1-0008-CP1	5342-P1-0009-CP1													
	STOVE <sub>yearwood</sub>	0.12	0.12	0.12													
	STOVE <sub>yearcharcoal</sub>	0.19	0.19	0.19													
If applicable, has the reported data been cross-checked with other available data?	Yes. The entries in the ICS database/5/ were checked with end user agreement/23/ and DOE physical site visit.																
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes																
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA																
Findings	No findings were raised.																

<b>Conclusion</b>	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.
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### E.3.4.3. Implementation of sampling plan

<b>Means of verification</b>	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the revised approved PoA DD/1/ and CPA DDs/2-4/.</p> <p><b>Sampling Design/Target Population/Sampling Frame/Reliability:</b></p> <p>The CME has applied single sampling plan for all of the 3 CPAs. According to the 'Sampling and Survey standards,' version 7.0/15/, the sampling plan applied by the CME for the following CPAs are found to be appropriate. As per the sampling plan stated in the PoA DD/1/, a minimum 95% confidence interval and a 10% margin of error requirement is achieved for the sampled parameters whenever cross-sampling takes place. The CME has followed a frequency of annual monitoring. Since the sampling has been done across the CPAs, the CME has taken 95/10 as the confidence precision levels which is found to be in line with the registered monitoring plan/1/.</p> <p>The target population for the parameters stated above are ICS installed and recorded in the project ICS database/5/.</p> <p><b>Sampling Frame:</b></p> <p>All the stoves are homogeneous for their location, target population and stove type. However, there are two different type of ICS used by the end users under the CPAs: Wood based ICS (Econofire stoves) and charcoal based ICS (Econochar stoves). Therefore, wood stoves-Econofire and charcoal stove-Econochar have been considered in different sampling frames.</p> <p><b>Sampling Method and selection:</b></p> <p>The samples have been chosen randomly from both the frames as checked from screenshots of random generator/29/.</p> <p><b>Sample Size for Parameter of Interest:</b></p> <p>The sampling is applied to the following monitoring parameters:</p> <ul style="list-style-type: none"> <li>• The thermal efficiency of the ICS distributed (%), <math>\eta_{new,y}</math></li> <li>• The Stove Operating Fraction, i.e. the fraction of users using the ICS, SOF</li> <li>• The fraction of stove users still using baseline (replaced) stoves, <math>f_{old}</math></li> <li>• The amount of woody biomass that continues to be used in the replaced stoves (kg), <math>\mu_{old}</math></li> </ul> <p>The sample size is chosen using the equation inline to CDM guidelines for Sampling and surveys for CDM project activities and programmes of activities version 4.0/14/.</p> <p>In this regard, sample size calculation spreadsheet /12/ was checked and found correct as per registered monitoring plan. The complete details are given in section E.3 of Monitoring Report/13/.</p> <p><b>Implementation of Sampling Survey and Field Test Records:</b></p> <p>Based on interviews with the CME, HHs and surveyors during the site visit, in addition to simply asking this question to the end users, the verification team also checked the training documents of the personel handling monitoring and tests/36/. Therefore, the implementation of surveys and tests was considered reliable.</p> <p><b>Monitoring survey (by CME) duration:</b></p>
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	<p>The monitoring surveys were conducted from 07/07/2019 to 21/07/2019 and WBT tests were conducted from 31/07/2019 to 05/08/2019 as mentioned under section E.3 of MR and also verified from the usage and monitoring survey sheet/11/ and WBT forms/35/ respectively.</p> <p><b>Reliability and precision calculation:</b></p> <p>The verification team has verified the ER calculation spreadsheets /12/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under “Standard for sampling and surveys for CDM project activities and Programme of Activities” v7.0 /15/ and confirms that the calculation of achieved reliability was done correctly.</p> <p>All parameters of interest are included in the ER spreadsheet for the CPAs. These were checked for the input values as well as formula applied and were found consistent. The reliability (demonstration of precision achieved after the survey results) is depicted in the ER calculation sheets /12/ corresponding to final Monitoring Report /13/, which were also found correct.</p> <p>Thus, the verification team confirms that required precision has been met and the results are reliable.</p>
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The verification team has found out that the sampling plan applied is found to be in-line with the monitoring plan mentioned in the registered PoA-DD/1/ and CPA-DDs/2-4/ and Sampling and survey standards, ver.7/15/

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

<b>Means of verification</b>	The monitoring plan (included in CPA DDs/2-4/ and registered PoA DD/1/) does not state the calibration requirements for any of the parameter. However, the verification team has checked if the monitoring equipment used during WBT test (mass balance, moisture meter and thermometer) were duly calibrated. As a result, following information was verified from the calibration certificate/26/ of the equipment used for thermal efficiency test;				
	Equipment	Sr. No.	Name of Manufacturer	Name of Model	Measuring range - Measurement Accuracy
	Digital Thermometer	141203661	Omega	Omegaette HH308 Type K	-200°C to 1370°C +/-0.3%
	Weighing Balance	NA	My Weigh	Standard Test Weight	0.0 g to 5000g 0.3g
	Digital Thermometer	141203662	Omega	Omegaette HH308 Type K	-200°C to 1370°C +/-0.3%
	Digital Thermometer	130803109	Omega	Omegaette HH308 Type K	-200°C to 1370°C +/-0.3%
	Moisture Meter	3510207500	Trotec	T500	15 to 100 digits (for material moisture) 5% to 50% (for wood moisture) +/-1%
The calibration date of all the above-mentioned equipment (except moisture meter which is auto calibrated) was 19/07/2019 and the recalibration date was found to be 18/07/2020/26/, /37/. So, from the calibration certificate it was ensured that the tests have been conducted with the calibrated instrument. The WBTs were done during 31/07/2019 to 05/08/2019/35/.					

	In absence of manufacturer mentioned any specific validity of the calibration, the “General Guidelines to SSC CDM methodologies” is applied. As per the guidelines as per “General Guidelines to SSC CDM methodologies” EB 61, Annex 21/31/, para 17 (c): “Measuring equipment should be certified to national or IEC standards and calibrated according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications, but at least once in three years”. Hence, the instrument can be considered calibrated till three years from the date of purchase.
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	The verification team confirm that CME applied good practices (as per manufacturer recommendation) while using the monitoring equipment and these were under the state of calibration. There is no specific requirement prescribed in this regard in the registered monitoring plan/1/ and in monitoring methodology/6/. Therefore, the approach presented by PP was accepted.

### E.3.6. Assessment of data and calculation of emission reductions or net removals

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

<b>Means of verification</b>	<p>The following equations were used to determine the baseline emissions as provided in the monitoring report /13/ and applied in the corresponding ER calculations sheet /12/. The expressions used were found consistent with the PoA DD /1/, CPA DDs /2-4/ and the applied methodology AMSII.G, version 03 /6/:</p> $ER_y = B_{y,savings} \cdot f_{NRB} \cdot NCV_{biomass} \cdot EF_{projected\ fossilfuel}$ <p>Where:</p> <p><math>ER_y</math> : Emission reductions during the year y in tCO<sub>2</sub>e.</p> <p><math>B_{y,savings}</math> : Quantity of woody biomass that is saved in tonnes.</p> <p><math>f_{nr}</math> : Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass.</p> <p><math>NCV_{biomass}</math>: Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne)</p> <p><math>EF_{projected\_fossilfuel}</math> : Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO<sub>2</sub>/TJ</p> $B_{y,savings} = B_{old} \cdot \left(1 - \frac{\eta_{old}}{\eta_{new}}\right)$ <p><math>B_{old}</math> : Quantity of woody biomass used in the absence of the project activity in tonnes.</p> <p><math>\eta_{old}</math> : Efficiency of system being replaced</p> <p><math>\eta_{new}</math> : Efficiency of the system being deployed as part of the project activity (fraction), as determined using the Water Boiling Test (WBT) protocol. Use weighted average values if more than one type of system is being introduced by the project activity.</p> $B_{old} = LAF \cdot N_{all} \cdot SOF \cdot (Q_{biomass} - \left(\frac{\mu_{old}}{1000} \cdot f_{old}\right)) \cdot Stove_{year}$ <p>Where,</p> <p><math>B_{old}</math> : Quantity of woody biomass used in the absence of the project activity in tonnes.</p> <p>LAF : Net leakage adjustment factor</p> <p>The effective duration of monitoring period is from 05/04/2019 to 30/06/2019 as the crediting period start date of the CPAs covered is 05/04/2019 and thus the CME has claimed the ERs only from the start date of the crediting period.</p> <p>The verification team has checked that the calculation for the 3 CPAs (CPA 010(5342-P1-0007-CP1), CPA 011(5342-P1-0008-CP1) and CPA 012(5342-P1-</p>
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	<p>0009-CP1) ) have been done in the worksheet 'ERs Summary' /12/ correctly.</p> <p>The calculations for all the CPAs were checked in the ER sheet/12/ and it was found that calculations have been done inline to the PoA DD/1/ and in accordance to the applied methodology/6/. The ex-ante values applied were also found to be consistent with the PoA and the CPA DDs/2-4/</p> <p>All the parameters are assessed in detail under section E.3.4. of this report.</p>
<b>Findings</b>	No finding was raised
<b>Conclusion</b>	<p>The verification team confirms that</p> <ul style="list-style-type: none"> <li>a) The complete data was available and is duly reported;</li> <li>b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter above;</li> <li>c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed;</li> <li>d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied.</li> <li>e) There is no pro-rata approach applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.</li> </ul>

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

<b>Means of verification</b>	As per applied methodology/6/, single equation is provided for the emission reduction calculation without any separate calculations for baseline emissions, project emissions or leakages related to the project. Hence, PE is not applicable in this case.
<b>Findings</b>	No findings were raised
<b>Conclusion</b>	The Project emission is not applicable, and the approach is in-line with the applied methodology.

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

<b>Means of verification</b>	As per applied methodology/6/, single equation is provided for the emission reduction calculation without any separate calculations for baseline emissions, project emissions or leakages related to the project. 0.95 is applied as gross to net leakage adjustment factor to the ER calculation as per methodology.
<b>Findings</b>	No findings were raised
<b>Conclusion</b>	The leakages could not be calculated, and the approach is in-line with the applied methodology.

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

<b>Means of verification</b>	<p>As elaborated above, the entire emission reductions from the PoA were based on the baseline emissions. The calculations presented in this regard in the monitoring report /13/ and the corresponding ER sheet /12/ were found appropriate and complying with provisions prescribed in the registered monitoring plan/1/ of the respective CPA-DDs/2-4/, PoA-DD/1/ and applied methodology/6/</p> <p>The verification team affirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found legitimate.</p>
<b>Findings</b>	No finding was raised.
<b>Conclusion</b>	<p>The verification team confirms that:</p> <ul style="list-style-type: none"> <li>a) The complete data was available and is duly reported;</li> <li>b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.3.4.2 of this report);</li> <li>c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed;</li> <li>d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied.</li> </ul>

	<p>e) There is no pro-rate approach was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.</p> <p>The total number of ERs achieved during the current monitoring period is 4,862 tCO<sub>2</sub>e.</p>
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Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
African Improved Cooking Stoves Programme of Activities CPA 00010 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0007CP1	2,091	0	0	0	2,091	2,091
African Improved Cooking Stoves Programme of Activities CPA 00011 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0008-CP1	1,370	0	0	0	1,370	1,370
African Improved Cooking Stoves Programme of Activities CPA 00012 (Nigeria) supported by Republic of Korea Version: 4.0 Ref: 5342-P1-0009-CP1	1,401	0	0	0	1,401	1,401
<b>Total</b>	<b>4,862</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,862</b>	<b>4,862</b>

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

<b>Means of verification</b>	<p>Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity 5342 "African Improved Cooking Stoves Programme of Activities" in Nigeria for the monitoring period 25/10/2017-30/06/2019 (including both days) amount to 4,862tCO<sub>2</sub>. The achieved and estimated ERs are presented in the next table.</p> <p>The achieved ERs are lower as compared to the estimated ERs due to lesser number of installations done under each CPA. Since, the achieved ERs are lower than the estimated, no further justification was sought.</p> <p><b>Verified and certified emission reductions as per commitment period:</b></p>
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	<b>Commitment period</b>	<b>Amount</b>
	Upto 31/12/2012 (1 <sup>st</sup> commitment period)	0 tCO <sub>2</sub> e
	From 01/01/2013	4,862 tCO <sub>2</sub>
<b>Findings</b>	None	
<b>Conclusion</b>	The actual ERs achieved in included CPAs are not higher than the estimated quantity of ERs in the CPA-DDs/2-4/. Accordingly, it was accepted by verification team.	

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period	Value estimated in ex ante calculation in the included CPA-DD(s)
5342-P1-0007-CP1	2,091	10,480
5342-P1-0008-CP1	1,370	10,480
5342-P1-0009-CP1	1,401	10,480
<b>Total</b>	<b>4,862</b>	<b>31,440</b>

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

<b>Means of verification</b>	As verified and evident from the Monitoring Report /13/ and corresponding ER calculations sheet /12/, the actual emission reductions achieved for Improved Cookstoves for the CPAs under this verification in the current monitoring period were found less than the estimated quantity in the CPA-DDs/2-4/ for the comparable period. The achieved ERs were found to be lesser as compared to the estimated ERs due to lesser number of installation under each CPA. Considering, there is no increase in ERs no further verification effort was put in. The details of actual values of achieved ERs for the CPA and value estimated in the CPA- DDs/2-4/ is presented in the table above.
<b>Findings</b>	None.
<b>Conclusion</b>	The actual emission reductions achieved in any of specific CPAs are not higher than the estimated quantity of ERs in the CPA-DDs/2-4/. Accordingly, it was accepted by the verification team.

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

<b>Means of verification</b>	The coordinating/managing entity did not identify and establish the monitoring of the sustainable development benefits of the registered CDM PoA/1/ and no such document was developed and published on the UNFCCC CDM website/25/. Therefore, no assessment is required.
<b>Findings</b>	None.
<b>Conclusion</b>	The CME is not required to monitor the sustainable development benefits of the registered CDM PoA.

#### E.3.8. Global stakeholder consultation

<b>Means of verification</b>	The global stakeholder consultation was not found applicable because period under verification is sixth monitoring period.
<b>Findings</b>	None
<b>Conclusion</b>	The requirement is applicable for situations when global stakeholder consultation was carried out after the publication of first monitoring report. Therefore, this was not found applicable.



## SECTION F. Internal quality control

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

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

## SECTION G. Verification opinion

Earthood Services Private Limited (ESPL), contracted by Envirofit (the CME for the PoA), has performed the sixth independent verification of the emission reductions for the registered CDM PoA 5342 "African Improved Cooking Stoves Programme of Activities" for the sixth monitoring period 25/10/2017-30/06/2019 (both days included) as reported in the Monitoring Report (final) Version 4.0 dated 21/11/2019. The CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

This verification report is for the PoA-5342 which was included at the UNFCCC webpage at the end of the current monitoring period.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by UNFCCC and complies with the instructions to follow of CDM VVS-PoA Version 02.

The verification activities were conducted in accordance with ESPL's CDM Quality Manual System as per the steps indicated under Section A of this report. The verification process has resulted in conclusion that the included CPAs confirm to the revised accepted PoA-DD as well as comply with applicable CDM rules and regulations and in accordance with applied monitoring methodologies, AMS II.G (Version 03).

As a result, it is confirmed that the emission reductions from the CDM PoA 5342 "African Improved Cooking Stoves Programme of Activities" are correctly reported in the Monitoring Report Version 4 dated 21/11/2019 and corresponding ER sheets for the monitoring period 25/10/2017-30/06/2019 (including both days) amount as 4,862 tCO<sub>2</sub>e. Therefore, this will be submitted as part of request for issuance as per CDM PCP Version 02.

## SECTION H. Certification statement

Earthood Services Private Limited (ESPL), contracted by Envirofit (the CME for the PoA), has performed the sixth independent verification of the emission reductions for the registered CDM PoA 5342 "African Improved Cooking Stoves Programme of Activities" in Nigeria for the monitoring period 25/10/2017-30/06/2019 (both days included) as reported in the Monitoring Report (final) Version 4.0 dated 21/11/2019.

The verification is based on the registered PoA-DD, CPA--DDs and the monitoring report for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board.

The management of the Envirofit International Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Final Monitoring Report Version 4.0 dated 21/11/2019. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the Bureau of Energy Efficiency. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 4.0 dated 21/11/2019.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the monitoring period 25/10/2017-30/06/2019 (including both dates) based on the reported emission reductions in the Final Monitoring Report Version 4.0 dated 21/11/2019 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, ESPL planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

ESPL confirms the following;

**Monitoring period:** From 25/10/2017 up to 30/06/2019 (including both dates)

**Verified and certified emission in the above monitoring period:**

	Amount	Unit
Certified emission reductions (CERs)	4,862	tCO <sub>2</sub> e

## Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Level
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating or Managing Entity
CPA	Component Project Activity
CP	Crediting period
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	Executive Board
ESPL	Earthood Services Private Limited
FAR	Forward action request
GHG	Green House Gases
GS	Gold standard
ICS	Improve Cook Stoves
IPCC	Intergovernmental Panel on Climate change
POA	Programme Of Activity
PO	Partner Organization
PSU	Primary Sampling Unit.
TA	Technical Area
TR	Technical Reviewer
VVS	Validation and Verification Standard
UNFCCC	United Nation Framework convention on Climate change
WBT	Water Boiling Test

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

Competence Statement			
<b>Name</b>	Shreya Garg		
<b>Country</b>	India		
<b>Education</b>	M.Sc. (Climate Science & Policy), TERI University		
<b>Experience</b>	6 Years +		
<b>Field</b>	Climate Change		
Approved Roles			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	YES		
<b>TA Expert</b>	YES (TA 1.2, TA 3.1)		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	01/03/2018
<b>Approved by</b>	Ashok Gautam	<b>Date</b>	01/03/2018

Competence Statement			
<b>Name</b>	Vaishali Vatsa		
<b>Education</b>	M.Sc. (Environmental Studies and Resource Management), TERI University		
<b>Experience</b>	4 months		
<b>Field</b>	Climate Change		
Approved Roles			
<b>Team Leader</b>	NO		
<b>Validator</b>	NO		
<b>Verifier</b>	NO		
<b>Methodology Expert</b>	NO		
<b>Local expert</b>	NO		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert (X.X)</b>	NO		
<b>Trainee</b>	Validator/ Verifier		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	28/06/2019
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	28/06/2019

Competence Statement	
<b>Name</b>	Rahi Sahni
<b>Education</b>	M.Sc Environment Science and Technology, Bharati Vidyapeeth University, Pune

<b>Experience</b>	4 months		
<b>Field</b>	Climate Change and Environment		
<b>Approved Roles</b>			
<b>Team Leader</b>	NO		
<b>Validator</b>	NO		
<b>Verifier</b>	NO		
<b>Methodology Expert</b>	NO		
<b>Local expert</b>	NO		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert</b>	NO		
<b>Trainee</b>	Validator/Verifier		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	01/10/2019
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	03/10/2019

<b>Competence Statement</b>			
<b>Name</b>	Ashok Gautam		
<b>Country</b>	India		
<b>Education</b>	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)		
<b>Experience</b>	16 Years +		
<b>Field</b>	Energy, Climate Change & Environment		
<b>Approved Roles</b>			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-I.A., AMS-I.C., AMS-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009, AM0034, AMS.I.B		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	YES		
<b>Technical Reviewer</b>	YES		
<b>TA Expert</b>	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	25/01/2019
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	25/01/2019

<b>Competence Statement</b>			
<b>Name</b>	Kumden Nanbal Luka		
<b>Country</b>	Nigeria		
<b>Education</b>	B.tech. in Urban and Regional Planning		
<b>Experience</b>	1+ years		
<b>Field</b>	Environment; Urban-Rural planning		
<b>Approved Roles</b>			
<b>Team Leader</b>	No		
<b>Validator</b>	No		

<b>Verifier</b>	No		
<b>Methodology Expert</b>	No		
<b>Local expert</b>	Yes (Nigeria)		
<b>Financial Expert</b>	No		
<b>Technical Reviewer</b>	No		
<b>TA Expert</b>	No		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	23/11/2018
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	23/11/2018

### Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1	Envirofit International Ltd	Registered PoA-DD Revised accepted PoA DD	Version 3.2, dated 27/11/2012 Version 4.3 Dated:07/06/2014	Others
2	Envirofit International Ltd	Registered CPA-DD (5342-P1-0007-CP1)	Version 4.0 Dated:29/03/2019	Others
3	Envirofit International Ltd	Registered CPA-DD (5342-P1-0008-CP1)	Version 4.0 Dated:29/03/2019	Others
4	Envirofit International Ltd	Registered CPA-DD (5342-P1-0009-CP1)	Version 4.0 Dated:29/03/2019	Others
5	Envirofit International Ltd	ICS Database	-	CME
6	UNFCCC	AMS-II.G	Version 3.0	Others
7	UNFCCC	Project Standard for PoA	Version 2.0	Others
8	UNFCCC	Project Cycle Procedure for PoA	Version 2.0	Others
9	UNFCCC	Validation and Verification Standard for PoA	Version 2.0	Others
10	ESPL	On-site assessment files (survey sheets)	07/10/2019	Others
11	Envirofit International Ltd	Usage and Monitoring survey (presented in the ER sheet)	-	CME
12	Envirofit International Ltd	ER calculation sheet	21/11/2019 Version 4.0	CME
13	Envirofit International Ltd	Monitoring Report (final)	Version 4.0 Dated:21/11/2019	CME
14	UNFCCC	Guidelines for Sampling and Surveys for CDM project activities and Programme of activities	version 4.0	Others
15	UNFCCC	Standards for Sampling and Surveys for CDM project activities and programme of activities	Version 7.0	Others
16	Carbon Check	PoA PRC Validation opinion	Version 2.0 Dated 28/02/2014	Others
17	UNFCCC	CDM Monitoring Form for PoA (CDM-PoA-MR-FORM)	Version 3.0	Others
18	Envirofit International Ltd	CME and CPA implementer agreement	-	CME
19	Envirofit International Ltd	Stove specification	-	CME
20	Envirofit International Ltd	Training records for monitoring (Monitoring manual)	-	CME
21	Envirofit	CPA start date evidence	05/11/2018	CME

	International Ltd	-date of first shipment of ICS		
22	Germanischer Lloyd Certification GmbH	PoA Validation report	Version 11, Dated 05/12/2012	Others
23	Envirofit International Limited	End User Agreement	Various	CME
24	Envirofit International Limited	Monitoring Survey forms	2019	CME
25	UNFCCC	PoA Link: <a href="https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/4R62VM8H3CFJDZTAXYQEL7119NB/PWO/viewCPAs">https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/4R62VM8H3CFJDZTAXYQEL7119NB/PWO/viewCPAs</a>	-	Others
26	Envirofit International Limited	Calibration certificates of Digital Thermometer, Weighing Scale	Various	CME
27	Carbon Check India Pvt. Ltd	Inclusion report for CPAs 5342-P1-0007-CP1, 5342-P1-0008-CP1 and 5342-P1-0009-CP1	Version 4.0 31/03/2019	Others
28	GACC	EPTP Protocol-GACC	-	CME
29	Envirofit International Ltd	Screenshot of random number generated for monitoring	-	CME
30	UNFCCC	CDM-PoA-VCR-FORM	Version 3.0	Others
31	UNFCCC	General Guidelines to SSC CDM methodologies EB 61, annex 21	-	Others
32	Carbon Check India private limited	Verification report for MP5	Version 4.0, Dated 23/01/2019	Others
33	Envirofit International Ltd	Stove test pictures	-	CME
34	Envirofit International Ltd	Equipment pictures	-	CME
35	Envirofit International Ltd	WBT Forms	31/07/2019 to 05/8/2019	CME
36	Envirofit International Ltd	WBT training manual	-	CME
37	Trotec	Moisture Meter Product Catalogue	-	CME

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

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

FAR ID	01	Section no.	E.3.4.1	Date : 16/10/2019
Description of FAR				
As per the FAR raised during the previous verification of the PoA, the verifying DOE shall ensure that the CME has considered only those stoves to claim emission reduction for which end user data available.				
Project participant response				Date : 23/10/2019
-				
Documentation provided by project participant				
ICS database (Nigeria)				
DOE assessment				Date: 04/11/2019
1. ICS end user database provided by the CME confirms that the emissions reductions were claimed only for the stoves for which end user database was available. (Closed)				

Table 2. CLs from this verification

CL ID	02	Section no.	E.2.1	Date	16/10/2019
<b>Description of CL</b>					

PP is requested to provide the following supportive evidence:	
<ol style="list-style-type: none"> <li>1. End user database</li> <li>2. Monitoring Survey Sheets (scanned hard copy) for the confirmation of the monitoring survey date.</li> <li>3. Stove specification.</li> <li>4. Calibration details and respective calibration certificates for the monitoring equipment used for <math>\eta_{new,y}</math></li> </ol>	
<b>Project participant response</b>	<b>Date : 23/10/2019</b>
Refer the following wrt the supportive evidence requested:	
<ol style="list-style-type: none"> <li>1. <b>End user database:</b> End user database is being submitted.</li> <li>2. <b>Monitoring Survey Sheets (scanned hard copy) for the confirmation of the monitoring survey date:</b> The monitoring survey sheets (scanned hard copy) are being submitted. The duration of monitoring survey is also given in section E.3 of the MR and is consistent with the information contained in the monitoring survey forms.</li> <li>3. <b>Stove Specification:</b> The specification of the stoves distributed in the CPAs are given in the Envirofit Product Catalogue. The same is being submitted.</li> <li>4. <b>Calibration details and respective calibration certificates for the monitoring equipment used for <math>\eta_{new,y}</math>:</b> The equipment used for WBTs were newly purchased at the time of monitoring, to ensure that the measurements were done with necessary guarantees. The purchase invoice of monitoring equipment is being submitted to substantiate the same.</li> </ol>	
<b>Documentation provided by project participant</b>	
<ol style="list-style-type: none"> <li>1. PoA 5342 MP#6 Nigeria ICS database v 1.0</li> <li>2. Monitoring Survey Records</li> <li>3. Envirofit Product Catalogue</li> <li>4. Monitoring equipment's purchase invoice</li> </ol>	
<b>DOE assessment</b>	<b>Date: 04/11/2019</b>
<ol style="list-style-type: none"> <li>1. PP has submitted the end user database which was found to be appropriate and acceptable.</li> <li>2. PP has submitted the monitoring survey sheets (scanned copies) and the monitoring survey duration was evident from the Monitoring survey forms. (Closed)</li> <li>3. PP has submitted the substantiation for Stove specification.</li> <li>4. The monitoring equipment purchase invoice could not be found in the supporting documents provided by the PP. However, PP has submitted the calibration certificates for the monitoring equipment used for <math>\eta_{new,y}</math> and product catalogue for moisture meter which confirms the calibration details of the equipment, Thus, the finding stands closed.</li> </ol>	

<b>CL ID</b>	03	<b>Section no.</b>	E.2.2, E.3.4.2	<b>Date : 16/10/2019</b>
<b>Description of CL</b>				
The following observations were made during physical assessment:				
<ol style="list-style-type: none"> <li>1. For HH name Ogbodu Ike, with ICS S.No. EF1H026762 (envirofit wood fuel stove) during the site visit mentioned that he has envirofit charcoal stove as well, but the monitoring survey sheet does not mention any information about it. Please justify</li> <li>2. For HH name Mrs.Ruth George, ICS serial No. EA1H039094, it was observed on-site that the customer is also using kerosene stove but the same has not been reported in the Usage and Monitoring Survey sheet. PP is requested to clarify if the customer is taken into account for the calculation of <math>U_{old}</math>.</li> <li>3. For some of the HH where the original stoves were replaced during the WBTs. The serial number on the datasheet was not found confirming to the serial number of the stoves seen: <ol style="list-style-type: none"> <li>a. Murtala Sobowale, Econofire/ICS replacement S.No. EF1H026517</li> <li>b. Imoleayo Imosu, EconoChar/ ICS replacement S.No. EA1H063287</li> <li>c. Rashidat Lawal, EconoChar/ ICS replacement S.No. EA1H063222</li> </ol> </li> <li>4. For the HH Lami Alfred, with ICS S.No. EF1H028561, the datasheet submitted did not indicate any stove replacement however during the interviews a stove replacement was reported. CME is requested to justify.</li> </ol>				
<b>Project participant response</b>				<b>Date : 23/10/2019</b>
<ol style="list-style-type: none"> <li>1. The ICS in these CPAs are fully sponsored by CERPD Co., Ltd. and are being given free of cost of project beneficiaries. The CPAs ensure that only one ICS is credited per beneficiary household. At the time of sale of the ICS, the "CPA Distribution Record" confirms if the stove is for self-use by the recipient or for use by someone else. In case the recipient reports buying stove for someone else, the name and address of the actual stove user is recorded. This ensures that all ICS are listed on</li> </ol>				



the name of their actual end users. Additionally, another question in the CPA distribution record confirms if the user already has an existing Envirofit ICS. Any user reporting having an existing Envirofit ICS is not included in CPA distribution database and hence is kept outside the project boundary. This is further substantiated by the fact that no two ICS in the CPA distribution database have same name and address combination.

For the particular case identified during the on-site audit visit by the DoE, the clarification is as follows:

Ogbodu Ike received two EF ICS, one unit of Econofire for self-use and one unit of Econochar for his wife for using at her place of work for cooking food for their staff. Accordingly, the CPA Distribution database, lists the Econofire unit with SI No - EF1H026762 on his own name and lists the Econochar unit with S.No. EF1H042645 on his wife's name (i.e. Ogbodu Rose). The monitoring survey form template captures information on additional ICSs present in the sampled household, if any. The Econochar unit is not found specified in the sampled survey record as it is not used by the sampled household and was physically absent at the sampled location. This was also cross verified by the verification team leader during the on-site audit interview conducted with Ogbodu Ike and Ogbodu Rose.

- The CPAs have a provision to ensure that only users with traditional / inefficient wood or charcoal stoves as baseline are included in the CPA distribution database. The CPA distribution record captures information on the baseline technology and fuel being used by the EF ICS users at the time of distribution. Thus, only users' reporting use of traditional / inefficient wood or charcoal stoves in the baseline are included in ER calculations.

In the case referred above, Mrs. Ruth George with Envirofit ICS serial No. EA1H039094 duly reported that Envirofit ICS shall replace traditional charcoal stove in th baseline. Please refer the corresponding CPA distribution record being submitted. Further, the kerosene stove found with user during the on-site audit, was confirmed to be in user in baseline and project scenario equally for emergency cooking needs only (due to cost and availability constraints). Thus, kerosene usage is deemed neutral and outside the project boundary. Besides,  $\mu_{old}$  refers to woody biomass consumption in the baseline stoves that have not been discontinued. The sampled user has not reported using any baseline biomass stove and hence  $\mu_{old}$  is not applicable in this case.

- The corrected list of replacement stoves provided to the sampled users against picking up their original stove for WBT is being submitted.
- WBT was conducted on the ICS S.No. "EF1H028561" belonging to Lami Alfred. The same can be check through the ER Sheet (refer "WBT Summary" tab) and WBT records submitted. When a stove is picked for WBT, a replacement ICS unit is provided to the user for cooking. Therefore, Lami Alfred initial ICS was replaced during WBT. The complete WBT stove replacement list for all 20 units tested for thermal efficiency is being submitted.

#### Documentation provided by project participant

- CPA distribution record for Mrs. Ruth
- WBTs stove replacement list

#### DOE assessment

Date: 04/11/2019

- The monitoring survey records accounts only for the Econofire unit owned by the HH named Ogbodu Ike and not for the Econowood unit owned by his wife and used at her workplace for cooking. Thus, the explanation provided by the PP was found to be appropriate. (Closed)
- PP has appropriately justified the use of kerosene stove by the end user and the reason for not accounting it in the calculation of  $\mu_{old}$  was also found to be acceptable.(Closed)
- PP has submitted the stove replacement list.(Closed)
- PP has submitted the stove replacement unit list which confirms the ICS s.no. of the replaced stove.(Closed)

**Table 3. CARs from this verification**

CAR ID	04	Section no.	E.3.4.	Date : 16/10/2019
Description of CAR				
1. Value of ERs along with various other parameters in the public MR is different from the ERs achieved in submitted Monitoring report. Kindly justify.				
2. The formula applied in the ER sheet 'Monitoring Survey Sheet' (Cell: D143) is not confirming the calculation of the $\mu_{old woodfuel}$ as mentioned in the registered PoA-DD and MR.				

<b>Project participant response</b>	<b>Date : 23/10/2019</b>
1. The inconsistency in the MR is on account of typographical errors. The MR has been accordingly corrected. The revised MR is being submitted. 2. The formula has been revised and now consistent with the formula given in the registered PoA-DD and MR. The revised ER sheet is being submitted.	
<b>Documentation provided by project participant</b>	
1. PoA 5342 MP#6 MR Nigeria v2.0 01112019 2. PoA 5342 MP#6 ER Sheet Nigeria v2.0 01112019	
<b>DOE assessment</b>	<b>Date: 04/11/2019</b>
1. PP has revised MR as per the errors identified. Thus, the finding is closed. 2. PP has revised the formula for $\mu_{old\ woodfuel}$ in the ER sheet which was found to be consistent with the PoA-DD and MR.(Closed) 3. The MR does not contain the information on the dates of the monitoring survey and data selection in order to confirm if the frequency of the monitoring has been followed. Open	
<b>Project participant response</b>	<b>Date : 21/11/2019</b>
Date of the Monitoring Surveys and WBTs have been specified in section E.3 of the revised MR.	
<b>Documentation provided by project participant</b>	
<b>DOE assessment</b>	<b>Date: 26/11/2019</b>
3. The monitoring survey dates and WBT survey dates are now included under section E.3. of revised MR.(Closed).	

Table 4. FARs from this verification

FAR ID	NA	Section No.	Date : DD/MM/YYYY
<b>Description of FAR</b>			
NA			
<b>Project participant response</b>			<b>Date : DD/MM/YYYY</b>
NA			
<b>Documentation provided by project participant</b>			
NA			
<b>DOE assessment</b>			<b>Date: DD/MM/YYYY</b>
NA			

## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);</li> <li>• Make structural and editorial improvements.</li> </ul>
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		