




**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>	Improved Cooking Stoves Programme of Activities in Africa UNFCCC ID: 5341	
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	Version 3.2 dated 27/11/2012	
<b>Version number of the verification and certification report</b>	2.0	
<b>Completion date of the verification and certification report</b>	04/05/2020	
<b>Monitoring period number and duration of this monitoring period</b>	5 (Fifth monitoring period) 01/01/2018 - 30/06/2019 (both days included)	
<b>Number and version number of the monitoring report to which this report applies</b>	Monitoring Report Number: 1 Version: 4.0	
<b>Coordinating/managing entity (CME)</b>	Envirofit International Ltd.	
<b>Host Parties</b>	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)
	Kenya	Yes
	South Africa	No
<b>Applied methodologies and standardized baselines</b>	AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, version 03.0 No standardized baseline applied	
<b>Mandatory sectoral scopes</b>	3: Energy Demand	
<b>Conditional sectoral scopes, if applicable</b>	N/A	
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report</b>	<b>CPA</b>	<b>Estimated amount (t CO<sub>2</sub>e)<sup>1</sup></b>
	5341-P1-0008-CP1	12,004
	5341-P1-0009-CP1	12,004
	5341-P1-0010-CP1	12,004
	<b>Total</b>	<b>36,012</b>
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	<b>CPA</b>	<b>Amount achieved (t CO<sub>2</sub>e)</b>
	5341-P1-0008-CP1	4,348
	5341-P1-0009-CP1	3,987
	5341-P1-0010-CP1	4,774
	<b>Total</b>	<b>13,109</b>
<b>Name and UNFCCC reference number of the DOE</b>	TÜV NORD CERT GmbH E-0022	

<sup>1</sup>The estimated amount covers the time from CP start of each CPA (which is within this MP) until the end of MP. The calculation is done on pro-rata basis, as per ER calculation spreadsheet submitted by CME.

<p>Name, position and signature of the approver of the verification and certification report</p>	<div data-bbox="746 152 1109 257"></div> <div data-bbox="746 257 933 295"><p>Final Approver</p></div> <div data-bbox="746 302 901 342"><p>Kunal Rami</p></div>
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**SECTION A. Executive summary**

Envirofit International Ltd. (Envirofit) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5<sup>th</sup> periodic verification of the CDM Programme of Activities (CDM-PoA) (5341):

**“Improved Cooking Stoves Programme of Activities in Africa”**

with regard to the relevant requirements for CDM PoAs.

This verification covers the period from 01/01/2018 - 30/06/2019 (both days included)

The programme of activities reduces GHG emissions by distributing ICS under the PoA which are portable and combust charcoal or woodfuel (as applicable) as fuel. These ICSs are more efficient in transferring heat from the fuel to the pot, thus saving charcoal/woodfuel, compared to the traditional charcoal/woodfuel stoves used by the project households in the baseline. The relevant CPAs under consideration (5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1) and covered in this verification, reduce GHG by disseminating fuel efficient charcoal and woodstoves.

Woodstoves type distributed in the covered CPAs are Econofire/SmartSaver and M5000/SuperSaver wood, while charcoal stove types distributed in the covered CPAs are Econochar/SmartSaver, CH5300 and CH5200.

Details of the PoA location are given in table A-1 below:

**Table A-1:** Project Location of CPA 5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1

No.	Project Location
Host Country	Republic of Kenya
Region:	Entire country
Latitude:	-1.283249
Longitude:	36.816663

Basic technical detail of the PoA is summarized in table A-2.

**Table - A-2:** Technical data of the CPA (5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1)

Stove Type	Parameter	Unit	Value
<b>M5000 /Super Saver Wood</b>	Average Thermal Efficiency	%	29.7
	Dimensions	cm	28.0 x 26.5 x 26.5 (height x width x depth)
	Life span	years	4 - 5
	manufacturer	-	Envirofit International Ltd.
<b>Econofire/Smart Saver Wood</b>	Average Thermal Efficiency	%	30.2
	Dimensions	cm	25.5 x 40 x 35.5 (height x width x depth)
	Life span	years	2 - 4
	manufacturer	-	Envirofit International Ltd.
<b>CH5300</b>	Average Thermal Efficiency	%	35.7
	Dimensions	cm	36.6x31.5x26 (height x width x depth)
	Life span	years	4 - 5
	manufacturer	-	Envirofit International Ltd.
<b>Econochar SmartSaver/ Charcoal</b>	Average Thermal Efficiency	%	34.3
	Dimensions	cm	28 x 37 x 42 (height x width x depth)
	Life span	year	2 - 4
	manufacturer	-	Envirofit International Ltd.
<b>CH5200</b>	Average Thermal Efficiency	%	36.1
	Dimensions	cm	16.2 x 37.5 x 31 (height x width x depth)
	Life span	year	4 - 7
	manufacturer	-	Envirofit International Ltd.

As a result of this verification, the verifier confirms that:

- all operations of the three CPAs (5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1), which are claiming CERs, are implemented and installed as planned and described in the component project activities design document.
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-II.G. ver. 03.0
- the equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The CPAs have generated GHG emission reductions.

As a result of the 5<sup>th</sup> periodic verification of CPA5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above-mentioned reporting period.

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

### B.1. Verification team members

No.	Role	Signature	Last name	First name	Affiliation	Involvement in
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					(e.g. name of central or other office of DOE or outsourced entity)	Desk/ document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader+ Technical Expert	EI	Mishra	Prakash Kumar	-	x	x	x	x

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	EI	Lubanga	David	-
2.	Approver	IR	Winter	Stefan	TÜV NORD CERT
3.	Approver*	IR	Rami	Kunal	TÜV NORD CERT

\*as of 06.06.2020

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

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

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

#### Materiality Threshold

The verification is based on the materiality threshold identified in table C-1 below:

**Table C-1:** Applied Materiality Threshold

	Threshold	Related to
<input type="checkbox"/>	0.5 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal equal to or more than 500,000 tonnes of carbon dioxide equivalent per year <sup>2</sup> ;
<input type="checkbox"/>	1 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal of between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;
<input type="checkbox"/>	2 %	Emission reductions or removals for registered large-scale CDM project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;
<input checked="" type="checkbox"/>	5 %	Emission reductions or removals for registered small-scale CDM PoA other than registered CDM PoA covered under next category below;
<input type="checkbox"/>	10 %	Emission reductions or removals for the type of registered small-scale CDM PoA referred to in decision 3/CMP.6, paragraph 38 (referred to as microscale project activities).

<sup>2</sup> A year refers to a period of 12 consecutive months.

### Strategic Analysis

At the beginning of the verification the verification team leader has assessed the nature, scale and complexity of the verification tasks by carrying out a strategic analysis of all activities relevant to the project activity. The team leader has collected and reviewed the information relevant to assess that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

### Risk analysis and detailed audit testing planning

For the identification and assessment of potential reporting risks and to determine the necessary detailed audit testing procedures for residual risk areas the following table is used.

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.	Analysis and transfer of data from: <ul style="list-style-type: none"> <li>• CPA Distribution Record</li> <li>• sales database,</li> <li>• household usage Survey and</li> <li>• WBT Reports for parameters under monitoring, to MR and excel ER spreadsheet.</li> </ul>	Medium	Human error during transfer of data to Sales record, Usage Survey reports and WBT reports/sheet for BE, PE and ER calculations	Thorough cross-check and assessment required on the generation and transfer of data to the ER spreadsheet. Assessment of sample CPA Distribution Records/Sales receipts, Usage Survey reports and WBT reports/sheet for Usage rate, change in efficiency, fuel wood consumption by baseline stoves still in use, no of days stoves under operation, appropriateness of sampling plan etc.  Assessment of information flow processes, data reporting, aggregation, management, and QA/QC procedures in place by CME to ensure the database is accurate

On the basis of the risk analysis the verification has been planned. A detailed audit / verification plan has been prepared and submitted to the project participant(s) in due time before the on-site visit.

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

Based on the verification planning, verification process is carried out. The concept of materiality considered during the verification process. A breakdown of the chosen approaches is included in the following table.

Parameter	Approach*	Errors* detected	Findings reference	Corrected	Remaining verification risk
N <sub>all</sub>	CDC	<input checked="" type="checkbox"/>	CL 01	<input checked="" type="checkbox"/>	Not material
SOF	ASP	<input type="checkbox"/>	-	<input type="checkbox"/>	Not material
f <sub>old</sub>	ASP	<input type="checkbox"/>	-	<input type="checkbox"/>	Not material
μ <sub>old</sub>	ASP	<input type="checkbox"/>	-	<input type="checkbox"/>	Not material
η <sub>new,y</sub>	ASP	<input type="checkbox"/>	-	<input type="checkbox"/>	Not material
Stove <sub>year</sub>	CDC	<input type="checkbox"/>	-	<input type="checkbox"/>	Not material
Aggregate				Materiality threshold not exceeded	

\*) incl. omissions and misstatements

+) Verification Approaches:

CDC: Complete data check of data including all data aggregation steps

NDC: Non-complete data check – omissions not material

SPL: Sampling approach (all data available)

ASP: Acceptance Sampling

COM: Data check at higher data aggregation levels and sampling at original data levels

For above risk mentioned in section C.1, the verification team has conducted a thorough cross check and verification as follows:

**Analysis and transfer of data from sales records, household usage Survey and WBT Reports for parameters under monitoring to MR and excel ER spreadsheet:** Total sales record presented in ER calculation spreadsheet for the respective CPAs were assessed and verified at CME office/premise during onsite verification audit. CME conducts monitoring annually in accordance with registered monitoring plan. The Verification Team has assessed the values of different parameters under monitoring (**SO<sub>F</sub>**, **f<sub>old</sub>**, **μ<sub>old</sub>**, **η<sub>new,y</sub>**). The results of monitoring survey conducted in July and August 2019 were assessed and compared during onsite visit with interviewees' response and value presented for the parameters were verified to be correct and accurate. Furthermore, Verification Team also compared the onsite audit observation results with data presented in the Usage Survey records (**SO<sub>F</sub>**, **f<sub>old</sub>**), the Usage Rate evaluation applied in the emission reduction spread sheet, continued use of baseline stove fraction(**F<sub>old</sub>**) and related amount of woody biomass consumption in the continued use of old stoves (**μ<sub>old</sub>**) and can confirm that all the values presented are correct.

The value of **η<sub>new,y</sub>**, i.e. "Efficiency of the system being deployed as part of the project activity" is compared with WBT test records of all the models involved (conducted during Aug - Sep 2019) and the corresponding excel spreadsheet calculation<sup>/WBT/</sup> and were found consistently reported.

The verification team reviewed and compared available data at CME office (total sales record, Warranty Cards, Usage Survey, WBT reports etc.) and database presented for total ICS sales for which CERs are claimed under the current monitoring period. Based on above, verification team has issued findings (CAR/CLs) which can be referred in table above and Appendix-4 and Appendix-5 of this report.

## SECTION D. Means of verification

### D.1. Desk/document review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the registered PoA-DD including the monitoring plan<sup>/PoA-DD/</sup>,
- the registered CPA-DDs
- the registered CPA validation reports<sup>/VAL/</sup>,
- the monitoring report, including the claimed emission reductions for the PoA<sup>/MR/</sup>,
- Usage Survey Records<sup>/USAGE/</sup> and related work sheets<sup>/RC/</sup>
- Water Boiling Test Records<sup>/WBT/</sup> and related work sheets
- the emission reduction calculation spreadsheet<sup>/XLS/</sup>.
- CPA Distribution Records and Sales Receipts
- Sample size calculation spreadsheet for Usage Survey and WBT<sup>/USAGE/</sup>
- Sales Database

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

### D.2. On-site inspection

Duration of on-site inspection: 30/09/2019 to 02/10/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> <li>• Opening meeting</li> <li>• Assessment of the sales database</li> <li>• Assessment of sample end-user warranty cards (sales receipts)</li> <li>• Comparison of end-user data/Warranty cards information in the database (dates, serial numbers, names, locations etc.)</li> <li>• Assessment of data management system, QA/QC procedures</li> <li>• Interviews with Retailer (NAIVAs)</li> <li>• Interviews with Envirofit staff for data checking</li> </ul>	Nairobi, Kenya- CME office and end users locations	30/09/2019 to 02/10/2019	Prakash Kumar Mishra (PKM)

	<ul style="list-style-type: none"> <li>Interview with Envirofit staff responsible for data entry</li> <li>Interviews with CME representative</li> <li>Discussion of emission reductions and supporting documentation</li> <li>Telephonic interview with ceramic liner producer</li> <li>Telephonic interview with distant users of project stoves</li> </ul>			
2.	Meeting with (Field Survey team and WBT team) Interviews with relevant personnel, retailers, involved in GHG monitoring of this PoA	Kenya	30/09/2019 to 02/10/2019	
3.	Visit of randomly selected households from CME's survey sample	Kenya	30/09/2019 to 02/10/2019	
4.	Discussion on MR and supporting documents and final closing meeting	Nairobi	02/10/2019	

**D.3. Interviews\***

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Small	David	Managing Director-E.F.K.	30/09/2019	CPA development, raw data, sales database	Prakash Kumar Mishra
2.	Yuguna	Peter	Carbon Monitoring –E.F.K.	30/09/2019	Stove Designing, production, Stove sales, Information flow, data Management, Financial Management, staff training, sales database, Demand, Supply, usage and maintenance of record, WBT procedures Equipment Calibration, training	
3.	Lohia	Rohit	Carbon Manager – Envirofit International	30/09/2019	Stove sales, Information flow, data Management, Financial Management, staff training, sales database, usage and maintenance of record, WBT procedures Equipment Calibration, training, monitoring report, ER Calculations, raw data, sales database	
4.	Opno	Paul	Business Manager -EFK	30/09/2019	Demand, Supply, usage and maintenance of record	
5.	Mutgana	Faith	Customer Care Manager – EFK	30/09/2019	WBT procedures Equipment Calibration, training	
6.	Karnaga	Evans	Accountant-Thikagiki Fices	30/09/2019	Generation of sales database, Data entry, reporting, QA/QC  Usage Survey procedure, generation of survey result and reporting, training etc.	



No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
					Date of purchase, Warranty/receipt, carbon waiver, household size, serial number, source of purchase, Usage rate, Stove performance, pre-project stove, continued of baseline stove, if part of usage survey, how usage survey was conducted, if part of WBT, how WBT was conducted (if applicable)	

\* The List of interviewed end users/ households is separately attached under Appendix- 7 of this report.

#### D.4. Sampling approach

##### D.4.1 Sampling during monitoring:

<input type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters						
<input checked="" type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):						
	Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Population		Sample Size	
				Strata	Population	Sample Size (n) required	Samples covered during monitoring
	SOF	SiRS	PS	SOF <sup>Charcoal</sup> (CH5300, CH5200 and Econochar)	15,253	68	140
				SOF <sup>Woodfuel</sup> (Econofire and M5000)	2,266	42	89
	f <sub>old</sub>	SiRS	PS	Strata	Population	Sample Size (n) required	Sample covered
				f <sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)	12,965	43	139
				f <sub>old</sub> woodfuel (Econofire and M5000)	2,039	42	87
	μ <sub>old</sub>	SiRS	PS	Strata	Population	Sample Size (n) required	Sample covered
				μ <sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)	1,297	7	10
				μ <sub>old</sub> woodfuel (Econofire and M5000)	204	7	12
	η <sub>new,y</sub>	SiRS	PS	Strata	Population	Sample Size (n) required	Sample covered
				η <sub>new,y</sub> CH5200	252	7	10
				η <sub>new,y</sub> CH5300	4,121	7	10
				η <sub>new,y</sub> Econochar	10,880	7	10
				η <sub>new,y</sub> M5000	1,072	7	10

			$\eta_{new,yEconofire}$	1,194	7	10
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<sup>1)</sup>Sampling Approaches:

SiRS:	Simple Random Sampling
StRS:	Stratified Random Sampling
SS:	Systematic Sampling
CS:	Cluster Sampling
MSS:	Multi-stage Sampling

<sup>2)</sup>Sampling Types:

PS:	Parameter Sampling
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A simple random sampling was carried out by PP across all specific-case CPAs covered in this monitoring report.

i. Sampling overview

Representative sampling has been undertaken as part of SSC-PoA-wide Sampling Plan (by grouping and sampling across CPAs). The Sampling is based on 95/10 confidence/precision.

ii. Objectives and Reliability Requirements

The objective was to obtain an unbiased and reliable estimate of the proportion or mean value of the following parameters over the course of the monitoring period, and with 95/10 confidence/precision for sampling across CPAs. This also follows the requirements as stated under the PoA-DD "PoA Sampling Plan".

1. Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling (**SOF**)
2. The fraction of end users that are still using baseline (replaced) stoves ( $f_{old}$ )
3. The amount of woody biomass consumption that is consumed through the continued use of old stoves ( $\mu_{old}$ )
4. Efficiency of the system being deployed as part of the project activity ( $\eta_{new,y}$ )

iii. Target Population

The target population for the four above mentioned parameters stated above are all ICS recorded in the project database.

iv. Sampling Frame

For parameter  $\eta_{new,y}$  population of each stove model is deemed homogenous due to similarity of the stove technical specifications. For the parameters SOF,  $f_{old}$  and  $\mu_{old}$  additional homogeneity conditions including the country, fuel type, end user type and stove type apply.

The target population, (the stoves that were distributed and recorded for CPA's under verification) has been divided into two sampling frames i.e.

- All stoves in Country 'Kenya' with fuel type 'Charcoal' having end user type 'Domestic' and stove efficiencies within +/- 10% of each other
- All stoves in Country 'Kenya' with fuel type 'wood' having end user type 'Domestic' and stove efficiencies within +/- 10% of each other

v. Sampling Method

The CME divided the target population into two sampling frames based on fuel type i.e. charcoal and firewood. Hence, selection of Simple Random Sampling approach is considered to be appropriate for each sampling frames separately to monitor the four parameters i.e. stove operation (SOF), fraction of traditional stoves still in operation ( $f_{old}$ ) Efficiency of the system being deployed as part of the project activity ( $\eta_{new,y}$ ) and amount of woody biomass that continues to be used by the replaced stoves ( $\mu_{old}$ ). Thus, the sample size calculations for parameters SOF,  $f_{old}$ ,  $\mu_{old}$ ,  $\eta_{new,y}$  were calculated considering PoA population under two sampling frames.

vi. Sampling Size

For the estimation of the proportion or mean value of the parameters investigated, the minimum sample size for each sampling frame has to achieve the 95/10 confidence/precision for cross-CPA, annual sampling. In order to calculate the sample sizes, values for the proportions, mean values, and standard deviations are required. The required sample sizes were derived using equation (1) on page 68 and equation (4) on page 70 of the Guideline: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0 for proportion based and mean based parameters respectively. A complete traceability with proper linkage could be assessed in the ER calculator worksheet under tab "Sample Size Calculations" which is based on CME's knowledge and experience as per the requirements of para 12 (b) & (c) of the standard "Sampling and surveys for CDM project activities and programme of activities." version 08.

**Parameter: SOF**

Strata	Total population(N) <sup>3</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring
SOF <sub>Charcoal</sub> (CH5300, CH5200 and Econochar)	15,253	95/10	68	140
SOF <sub>Woodfuel</sub> (Econofire and M5000)	2,266	95/10	42	89

**Parameter: f<sub>old</sub>**

Strata	Total Population(N) <sup>4</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring
f <sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)	12,965	95/10	43	139
f <sub>old</sub> woodfuel (Econofire/M5000)	2,039	95/10	42	87

**Parameter: μ<sub>old</sub>**

Strata	Total Population(N) <sup>5</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring
μ <sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)	1,297	95/10	7	10
μ <sub>old</sub> woodfuel (Econofire and M5000)	204	95/10	7	12

**Parameter: η<sub>new,y</sub>**

Strata	Total Population(N) <sup>6</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring
η <sub>new,y</sub> CH5200	252	95/10	7	10
η <sub>new,y</sub> CH5300	4,121	95/10	7	10
η <sub>new,y</sub> Econochar	10,880	95/10	7	10
η <sub>new,y</sub> M5000	1,072	95/10	7	10

<sup>3</sup>These are rounded figures of total strata population for calculating sample size only.

<sup>4</sup>These are rounded figures of total strata population for calculating sample size only.

<sup>5</sup>These are rounded figures of total strata population for calculating sample size only.

<sup>6</sup>These are rounded figures of total strata population for calculating sample size only.

$\eta_{\text{new,yEconofire}}$	1,194	95/10	7	10
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The parameter  $\eta_{\text{new,y}}$ ,  $\mu_{\text{old}}$  are mean value parameters, therefore the sample size has been calculated according to the following equations:

$$n \geq \frac{z^2 * N * V}{(N-1) * \text{precision}^2 + z^2 * V}$$

Where:

$$V = \left( \frac{SD}{\text{mean}} \right)^2$$

The parameter SOF,  $f_{\text{old}}$  are proportional values, therefore the sample size has been calculated according to the following equations:

$$n \geq \frac{z^2 * N * V}{(N-1) * \text{precision}^2 + z^2 * V}$$

Where:

$$V = \frac{p * (1-p)}{p^2}$$

Based on the registered monitoring plan, 95/10 reliability level is selected for PoA specific sampling for all the parameters listed above at monitoring frequency prescribed in PoA-DD. Sample size calculation is assessed to be in accordance with registered sampling plan in PoA-DD/CPA-DD and the guideline "Sampling and surveys for CDM project activities and programme of activities ", version 04.0 for sampling.

Every individual project stove in the CPAs covered under this MR (observed to be uniquely identifiable by its ID number) was observed to be allocated a sample number. Random numbers were found to be appropriately generated using online random number generator and the numbers obtained were used to identify the samples from the population.

CME/PP has submitted sample size calculation spreadsheet and random number generator where it was demonstrated that samples are drawn randomly using simple random sampling technique. DOE further has crosschecked the sampling approach by CME as per MR section E.3 against related PoA- and CPA-DD.

Besides the related population size have been checked with corresponding supporting documents. Input parameter for the sampling calculation have been checked whether consistent with the stated approach and against PoA-DD, CPA-DD and sampling guidance. Further, verification team (VT) has recalculated and confirmed the required confidence/precision to be met.

#### D.4.2 Sampling approaches during verification

<input type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters			
<input checked="" type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):			
Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Population	Sample Size
SOF	SiRS	AS	229 (140+89) (Charcoal/ Wood)	34
$f_{\text{old}}$	SiRS	AS	226 (139+87) (Charcoal/ Wood)	34
$\mu_{\text{old}}$	SiRS	AS	22 (10+13) (Charcoal/ Wood)	34

$\eta_{\text{new},y}$	SiRS	AS	50 (10 for each stove model)	34 <sup>7</sup>
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<sup>1)</sup>Sampling Approaches:

SiRS: Simple Random Sampling  
 StRS: Stratified Random Sampling  
 SS: Systematic Sampling  
 CS: Cluster Sampling  
 MSS: Multi-stage Sampling

<sup>2)</sup>Sampling Types:

AS: Acceptance Sampling  
 PS: Parameter Sampling  
 COM: Full data check at higher data aggregation levels and sampling at original data levels

During the on-site verification, a sampling approach has been used to verify the reported values of the monitored parameters on sampling basis.

The sampling approach conducted is in accordance with “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities”. Verification team adopted simple random sampling method with acceptance sampling approach to verify the sampling parameters.

Since the CPA included in the PoA implements technologies/measures with high degree of standardization and the stove capacities in terms of energy savings per year in the CPAs are smaller than 1% of small scale CDM thresholds, the verification team decided to draw samples mainly from the project samples selected by CME. i.e. the acceptance sampling approach has been applied.

The verification team followed the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” version 08, where §29, §30, §31, §37 and §39, have been followed esp. for taking a sample out of the CME’s sample. Verification Team has adopted the acceptance sampling by considering Acceptable quality level (AQL) 0.5% and Unacceptable quality level (UQL) 20%. Producer risk of 10% and consumer risk of 10% have been applied to determine the number of samples to be verified on ground from CME’s samples. Applying the above, the total number of samples required to be verified are 11 with acceptance No zero (0), however, Verification Team visited total 34 users (including 12 WBT samples) covering 17 charcoal and 17 woodstoves samples, selected randomly from the CME monitored data. Please refer the DOE sampling list as per Appendix 7 of this report.

**Table 7: Summary of sample size and acceptance number determination**

AQL	0.5%
UQL	20%
Producer risk	10%
Consumer risk	10%
Sample size	11
Acceptance Number	0

Samples were randomly selected (from CME’s samples) by verification team using random excel function. Also, the verification team assessed samples over minimum size for proportion and mean parameter (34 total samples covering all 04 parameters under monitoring by sampling).

No CME sampling monitoring records/data results were found discrepant during the DOE verification site-visit.

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

<sup>7</sup> Verification Team could verify the sampled user where WBT was conducted and in return new ICS model of specific type were found provided.

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	0	0	0
Remaining forward action requests from validation and/or previous verifications	0	0	2
CPAs considered for verification and covered in this report	0	0	0
<b>Programme of activities</b>	-	-	-
Compliance of the programme implementation with the registered PoA-DD	0	0	0
Implementation and operation of the management system	0	0	0
Post-registration changes	-	-	-
• Corrections	0	0	0
• Inclusion of a monitoring plan	0	0	0
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents <sup>8</sup>	0	0	0
• Changes to the programme design	0	0	0
• Addition of CPA inclusion template	0	0	0
• Change of coordinating/managing entity			
• Changes specific to afforestation and reforestation activities	0	0	0
<b>Component project activities</b>	-	-	-
Compliance of the CPA implementation with the included CPA design document	0	2	0
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	0	0	0
• Corrections	0	0	0
• Changes to the start date-of the crediting period	0	0	0
• Inclusion of a monitoring plan	0	0	0
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	0	0	0
• Changes to the project design	0	0	0
• Changes specific to afforestation and reforestation activities	0	0	0
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	0	0	0
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	0	0	0
• Data and parameters monitored	1	1	0
• Implementation of sampling plan	0	0	0
Compliance with the calibration frequency requirements for measuring instruments	0	0	0
Assessment of data and calculation of emission reductions or net removals	-	-	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	0	1	0
• Calculation of project GHG emissions or actual net GHG removals by sinks	0	0	0
• Calculation of leakage GHG emissions	0	0	0
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	0	0	0

<sup>8</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).

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	0	0	0
• Remarks on difference from estimated value in included CPA	0	0	0
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	0	0	0
Others (please specify)	0	0	0
<b>Total</b>	<b>1</b>	<b>4</b>	<b>2</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>	<p>A monitoring report was submitted to the verification team by the CME. The DOE has made this report publicly available prior to the start of the verification activities. No comments were received.</p> <p>By means of the UNFCCC website it has been checked whether the latest applicable MR template CDM-PoA-MR-FORM<sup>MRT/</sup> has been used.</p> <p>Further it has been checked whether the latest instructions for filling out the MR template have been followed. Every section has been checked against the respective MR form filling guidelines.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /MRT/</li> <li>• /unfccc/</li> </ul>		
<b>Findings</b>	<input checked="" type="checkbox"/>	The latest reporting template CDM-PoA-MR-FORM as listed on the UNFCCC website has been used for the Monitoring Report to be uploaded.	
	<input checked="" type="checkbox"/>	The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification.	
	<input type="checkbox"/>	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:	
		-	
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.	
	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.	
		The latest instructions for filling out the MR have been followed.	

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

During the validation, the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose, FARs might have been raised. Likewise, FARs might have been raised in the course of previous verifications.

In the course of this verification, the CPA inclusion reports pertaining to the CPAs covered under the scope of verification as well as the latest version of the last issued PoA MR<sup>/MR/</sup> and the PoA Verification report<sup>/VER/</sup>, have been checked in order to identify any remaining forward action requests. For the current monitoring period the following applies:

##### (i) Open issues from validation:

<input type="checkbox"/>	There were no open issues which have been addressed in the latest version of the validation report.
<input type="checkbox"/>	All open issues from the validation have been appropriately addressed in the context of previous verifications.

<input type="checkbox"/>	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the validation have not yet been appropriately addressed (for details please refer to appendix 4):

(ii) Open issues from previous verifications:

<input type="checkbox"/>	N/A – as this is the first monitoring period for this CDM project activity.
<input type="checkbox"/>	There were no open issues which have been addressed in the previous verification report
<input type="checkbox"/>	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the previous verification have not yet been appropriately addressed (for details please refer to appendix 4):

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



Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period	Is the CPA considered for this verification? (yes/no)	The date when the CPA was included	Version of the PoA-DD	Confirmation that a request for issuance including the CPA has been published for the previous monitoring period
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00001 (Kenya) Version: 3.2 5341-P1-0001-CP1	No	06/12/2012	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00002 (Kenya) Version: 2.0 5341-P1-0002-CP1	No	29/10/2013	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00003 (Kenya) Version: 2.1 5341-P1-0003-CP1	No	06/11/2013	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00004 (Kenya) Version: 1.0 5341-P1-0004-CP1	No	24/03/2014	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00005 (Kenya) Version: 3.0 5341-P1-0005-CP1	No	06/11/2017	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00006 (Kenya) Version: 3.0 5341-P1-0006-CP1	No	06/11/2017	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00007 (Kenya) Version: 3.0 5341-P1-0007-CP1	No	06/11/2017	3.2	No
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00008 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0008-CP1	Yes	22/03/2019	3.2	Yes
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00009 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0009-CP1	Yes	22/03/2019	3.2	Yes

Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00010 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0010-CP1	Yes	22/03/2019	3.2	Yes
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**E.2. Programme of activities****E.2.1. Compliance of the programme implementation with the registered programme design document**

Means of verification	<p>By means of an in-depth review of the latest PoA-DD – as downloaded from the UNFCCC project site - and the checks carried out during the on-site visit an assessment has been carried out whether the project has been implemented and operated in line with the latest approved version of the PoA-DD / CPA-DD and whether all physical features of the project are in place. The following has been checked: implemented technology i.e. project stoves with different fuel inputs (improved woodstove and improved charcoal stoves), project implemented monitoring plan in line with approved monitoring plan in the PoA-DD and corresponding CPA-DDs.</p> <p>Interviews with, CME, CPA implementer and operational personnel have been carried out, QMS records, maintenance records, instruments were checked in this context.</p> <p>Special focus has further been laid to determine whether a potential phase wise implementation has occurred within the crediting period or any delays with respect to the starting dates have occurred.</p> <p>Further it has been checked whether any observed deviations from the registered project design have been correctly addressed as PRC.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"><li>• /PoA-DD/</li><li>• /CPA-DD/</li><li>• /MR/</li><li>• /VVS/</li><li>• /XLS/</li><li>• /QMS/</li><li>• /unfccc/</li></ul>		
Findings	<input checked="" type="checkbox"/>	The project has been implemented as described in the latest version of the PoA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.	
	<input type="checkbox"/>	The following deviations from the registered / approved project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4):	
	<input type="checkbox"/>	In this context the following CARs, CLs have been raised:	
	In case of phased implementation:		
	<input checked="" type="checkbox"/>	N/A	
	<input type="checkbox"/>	The phased implementation has correctly and in sufficient detail been described in the latest version of the PoA-DD.	
	<input type="checkbox"/>	The description in section 3.1 of the MR differs in content or the level of detail from the latest version of the PoA-DD. However, the description in the MR is correct and reflects the situation during the site inspection.	
	<input type="checkbox"/>	The project description in the PoA-DD/MR is not deemed sufficient. The detailed implementation timeline is as follows: N/A or add as appropriate	
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.	

	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
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## E.2.2. Implementation and operation of the management system

<b>Means of verification</b>	<p>The verification team carried out onsite visits for all the CPAs included during this monitoring period, respectively CPA 5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1 and interviewed key personnel. Interviewees included the CME, stove manufacturer, and project developer.</p> <p>The coordinating and managing entity (CME) is Envirofit International Ltd. and CERPD Co., Ltd. is the CPA implementer. 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.</p> <p>CPA implementers maintain the CPA distribution records at the time of distribution to note the details of the end user, ICS model, the serial number of the ICS installed, and the kind of stove replaced. All the information is transferred to ICS distribution database by the CME which was checked during the onsite visit to confirm that the management system is in place. The ICS database was cross-checked against sample CPA distribution records, 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 there are no duplicates in the database and the same system is not included any other CPA either, thus avoiding the double counting.</p> <p>Further, based on the review of ICS end user database, physical observations and interview conducted during the site visit, the verification team found that:</p> <ul style="list-style-type: none"> <li>• The CPA(s) have been implemented within the boundary of the PoA as described in the registered PoA-DD.</li> <li>• The CME is same as that mentioned in the registered PoA-DD</li> <li>• The implementation and operation of the project activity has been conducted in accordance with the description contained in the PoA-DD and included CPA-DDs.</li> <li>• All physical features of the CPA proposed in the included CPA-DDs were in place</li> <li>• The CPA implementer has operated the CPAs as per the included CPA DDs/2-4/.</li> </ul> <p>It was established that the programme management system has been implemented and operated as described.</p>
<b>Findings</b>	N/A
<b>Conclusion</b>	The management system is implemented and operated as per the registered PoA-DD & CPA-DDs.

## E.2.3. Post-registration changes

### E.2.3.1. Corrections

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During this verification of the current MP no need for corrections has been identified.
<input type="checkbox"/>	The following corrections have been applied:

	<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. <input type="checkbox"/> No related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
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**E.2.3.2. Inclusion of a monitoring plan**

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PoA-DD /CPA-DD
<input type="checkbox"/>	In line with PS § 281 or § 282 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 282 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with § 282 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number

**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**

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period									
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC									
	1	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved</td> </tr> <tr> <td>Approval</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved	Approval		Ref. No.	
Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved									
Approval										
Ref. No.										
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA									
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.									
	1	Issue: <table border="1" style="width: 100%; height: 20px;"></table>								
	2	Issue: <table border="1" style="width: 100%; height: 20px;"></table>								
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:									
	1	Issue: <table border="1" style="width: 100%; height: 20px;"></table>								
	2	Issue: <table border="1" style="width: 100%; height: 20px;"></table>								

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

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following CoPD is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

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

N/A

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

The CME is Envirofit International Ltd. There are no changes of the CME.

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

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered CPA-DD
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### E.3. Component project activities

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

<b>Means of verification</b>	By means of an in-depth review of the latest CPA-DD – as downloaded from the UNFCCC project site - and the checks carried out during the on-site visit an assessment has been carried out whether the project has been implemented and operated in line with the latest approved version of the CPA-DD and whether all physical features of the project are in place. The following has been checked: implemented technology i.e. project stoves with different fuel inputs (improved woodstove and improved charcoal stoves), project monitoring and implemented
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	<p>monitoring plan in line with approved monitoring plan in the PoA-DD and corresponding CPA-DDs.</p> <p>Further it has been checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period and consistent notations of key equipment (meters etc.) in CPA-DD, MR and calculation spreadsheet are applied.</p> <p>Interviews with operational personnel have been carried out, QMS records, maintenance records, instrument specifications were checked in this context. Special focus has further been laid to determine whether a potential phase wise implementation has occurred within the crediting period or any delays with respect to the starting dates have occurred.</p> <p>Further it has been checked whether any observed deviations from the registered project design have been correctly addressed as PRCs.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /CPA-DD/</li> <li>• /MR/</li> <li>• /VVS/</li> <li>• /XLS/</li> <li>• /unfccc/</li> </ul>
<b>Findings</b>	CAR 01
<b>Conclusion</b>	<p>The verification team confirms that the CPAs under this MP are implemented and operated in line with latest approved versions of CPA-DDs and all physical feature of the project are in place.</p> <p>However, during course of verification findings were raised and closed successfully. Please refer Appendix-4 of this report.</p>

### 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

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been submitted to the UNFCCC prior to the current monitoring period.		
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		

<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.	
1	Issue:	
2	Issue:	
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:	
1	Issue:	
2	Issue:	

**E.3.2.2. Corrections**

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.	
<input type="checkbox"/>	The following corrections have been applied:	
1	Issue:	
2	Issue:	
<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. <input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

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

Not Applicable

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

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the included CPA-DD
<input type="checkbox"/>	In line with PS § 281 or § 282 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 282 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with § 282 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z.

**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**

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
Ref. No.			
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

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

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
Ref.No.			



<input checked="" type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA	
<input type="checkbox"/>	An approval of the following CoPD is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.	
	1	Issue:
	2	Issue:
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:	
	1	Issue:
	2	Issue:

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

<input checked="" type="checkbox"/>	N/A - as this registered PoA is not an afforestation and reforestation activity
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**E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines**

<b>Means of verification</b>	By means of comparison of the MR with (i) the applied CDM methodology (ii) all applicable CDM Meth tools and (iii) if applicable, a standardized baseline the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology/tools/SB.  The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /AMSII G/</li> <li>• /unfccc/</li> </ul>																	
<b>Findings</b>	<input checked="" type="checkbox"/>	The MP is completely in accordance with the approved methodology applied by the CDM PoA project (last registered/approved version of the PoA-DD)																
	<input checked="" type="checkbox"/>	The breakdown of MP accordance of the referenced guidelines is as follows: <table border="1"> <tr> <td>1</td> <td>Title (of the guideline)</td> <td>Guidelines for Sampling and Survey for CDM Project activities and Programme of activity, version 04</td> </tr> <tr> <td></td> <td>MP compliance</td> <td> <input type="checkbox"/> full compliance  <input type="checkbox"/> findings have been raised  <input checked="" type="checkbox"/> N/A (for MP)               </td> </tr> <tr> <td>2</td> <td>Title (of the tool)</td> <td></td> </tr> <tr> <td></td> <td>Version</td> <td></td> </tr> <tr> <td></td> <td>MP compliance</td> <td> <input type="checkbox"/> full compliance  <input type="checkbox"/> findings have been raised  <input checked="" type="checkbox"/> N/A               </td> </tr> </table>		1	Title (of the guideline)	Guidelines for Sampling and Survey for CDM Project activities and Programme of activity, version 04		MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A (for MP)	2	Title (of the tool)			Version			MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A
1	Title (of the guideline)	Guidelines for Sampling and Survey for CDM Project activities and Programme of activity, version 04																
	MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A (for MP)																
2	Title (of the tool)																	
	Version																	
	MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A																
	<input type="checkbox"/>	The breakdown of MP accordance of the applicable SB is as follows: <table border="1"> <tr> <td>1</td> <td>Title (of the SB)</td> <td>Name of SB</td> </tr> <tr> <td></td> <td>Version</td> <td></td> </tr> <tr> <td></td> <td>MP compliance</td> <td></td> </tr> </table>		1	Title (of the SB)	Name of SB		Version			MP compliance							
1	Title (of the SB)	Name of SB																
	Version																	
	MP compliance																	
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -																

<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 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

<b>Means of verification</b>	<p>By means of comparison of the MR and the ER calculation with the latest version of the registered PoA-DD, the verification team has checked whether all parameters fixed ex-ante or at renewal of the crediting period have been applied correctly.</p> <p>Parameters which are fixed ex-ante are listed as below have been found to be adequately provided in the section E.1 of the MR. Corresponding values in the ER sheet are also verified to be correct.</p> <ol style="list-style-type: none"> <li>1. <math>\eta_{old}</math></li> <li>2. <math>NCV_{biomass}</math></li> <li>3. <math>EF_{projected\_fossilfuel}</math></li> <li>4. LAF</li> <li>5. <math>Q_{biomass}</math></li> <li>6. <math>f_{NRB,y}</math></li> </ol> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> <li>• /PS/</li> <li>• /VVS/</li> <li>• /unfccc/</li> <li>• /METH/</li> <li>• /AMS-II.G./</li> </ul>	
<b>Findings</b>	<input checked="" type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante or at the renewal of the crediting period correctly, no deviations have been observed.
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification: - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: - For details please refer to appendix 4
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out.
	The fixed ex-ante parameters corresponding with the provisions of CPA-DD are appropriately included in section E.1 of the monitoring report, and applied for the ER calculation.	

#### E.3.4.2. Data and parameters monitored

<b>Means of verification</b>	<p>During the verification all relevant monitoring parameters (as listed in the PoA-DD) have been verified with regard to the</p> <ol style="list-style-type: none"> <li>(i) appropriateness of the applied measurement / determination method,</li> <li>(ii) the correctness of the values applied for ER calculation,</li> <li>(iii) the accuracy, and applied QA/QC measures.</li> </ol>
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	The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).	
<b>Findings</b>	CAR 02	
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	A finding was raised with respect to the survey, the same has been adequately resolved. All the data and parameters are now appropriately monitored.	

### E.3.4.3. Implementation of sampling plan

Means of verification	<p>The verification team checked whether the PP applied a sampling approach to determine the monitored values.</p> <p>Further it has been checked whether the PP correctly applied the implemented sampling plan including</p> <ul style="list-style-type: none"><li>(i) description of the implemented sampling design</li><li>(ii) collected data</li><li>(iii) analysis of collected data</li><li>(iv) demonstration on whether the required confidence/precision has been met.</li></ul> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"><li>• /MR/</li><li>• /RC/</li><li>• /XLS/</li><li>• /WBT/</li><li>• /PoA-DD/</li><li>• /CPA-DD/</li></ul>				
Findings	<input type="checkbox"/>	The PPs have not applied sampling approaches for the parameters monitored.			
	<input checked="" type="checkbox"/>	The PPs have applied sampling approaches for the following parameters monitored.			
		Parameter SOF			
		Name:	Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling		
		Description on how the sampling efforts and survey comply with the validated sampling plan:	The parameter was assessed through household visits of randomly selected sample (random samples) of household annually. The households selected were visited by staff/third party appointed by the CPA Implementer. During visit, the existence and functionality of the appliance was confirmed through a visual assessment of the appliance with the unique ID clearly visible.		
		All data is kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. A sample size was calculated from the installed stoves as:			

Strata	Total population (N) <sup>9</sup>	Reli-ability	Sample Size (n) required	Samples covered during monitoring
SOF <sup>Charcoal</sup> (CH5300, CH5200 and Econochar)	15,253	95/10	68	140
SOF <sup>Woodfuel</sup> (Econofire/M5000)	2,266	95/10	42	89

The sample size has been calculated according to the following equations:				
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<sup>9</sup>These are rounded figures of total strata population for calculating sample size only.

		$n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$ <p>Where:</p> $V = \frac{p * (1-p)}{p^2}$ <p>A total of 229 samples were surveyed of operation across all the models as illustrated above.</p> <p>The Verification Team also reviewed the survey forms where "Question 3 Usage Survey Data (Visual Inspection- Surveyor should fill this based on one's own observation)" has provision for capturing this information. Procedures for sampling have been duly articulated in the field monitoring excel report and spreadsheet, and a sample of survey questionnaires has been furnished to verification team.</p>															
	<b>Parameter f<sub>old</sub></b>																
	<b>Name:</b>	The fraction of end users that are still using baseline (replaced) stoves															
	<b>Description on how the sampling efforts and survey comply with the validated sampling plan:</b>	<p>This is the actual number of baseline stoves still in operation. CME undertook annual sampling and surveying to determine whether the households are still continuing with the inefficient baseline stoves along with the improved cook stove. The Verification Team also reviewed the survey forms where "Question 5 Baseline Stove Usage Survey Data (User's Interview)" has provision for capturing this information.</p> <p>After this step the fuel wood consumption in baseline stoves is excluded from the ex-ante fixed B<sub>old</sub> to arrive at emission reductions. The data is gathered at end user household end pertaining to approximate combustion of traditional stoves during field surveys by a surveyor team.</p> <table border="1"> <thead> <tr> <th>Strata</th><th>Total population (N)<sup>7</sup></th><th>Reliability</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>f<sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)</td><td>12,965</td><td>95/10</td><td>43</td><td>139</td></tr> <tr> <td>f<sub>old</sub> woodfuel (Econofire and M5000)</td><td>2,039</td><td>95/10</td><td>42</td><td>87</td></tr> </tbody> </table> <p>The sample size has been calculated according to the following equations:</p> $n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$ <p>Where:</p> $V = \frac{p * (1-p)}{p^2}$ <p>A total of 226 samples were surveyed for all the models as illustrated above.</p> <p>Where:  1.96 is the z value for the 95% confidence interval  precision required as per PP application 95/10  N is the total population</p>	Strata	Total population (N) <sup>7</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring	f <sub>old</sub> Charcoal (CH5300, CH5200 and Econochar)	12,965	95/10	43	139	f <sub>old</sub> woodfuel (Econofire and M5000)	2,039	95/10	42	87
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		<p>Procedures for sampling have been duly articulated in the field monitoring survey spreadsheet and corresponding survey forms containing survey questionnaires furnished to DOE for assessment.</p> <p>Monitoring surveys were conducted by trained personnel using stratified random sampling following the standard and guideline for Sampling and surveys for CDM project activities and programme of activities version 08. As described above, it can be said that sampling was accurate.</p>															
	<b>Parameter</b>	$\mu_{old}$															
	<b>Name:</b>	The amount of woody biomass consumption that is consumed through the continued use of old stoves															
	<b>Description on how the sampling efforts and survey comply with the validated sampling plan:</b>	<p>This is the amount of woody biomass consumption that is consumed through the continued use of old stoves still in operation. The Verification Team also reviewed the survey forms where "Question 5 Baseline Stove Usage Survey Data (User's Interview)" has provision for capturing this information.</p> <p>CME undertook annual sampling and surveying to determine whether the households are still continuing with the inefficient baseline stoves along with the improved cook stove. After this step the fuel wood consumption in baseline stoves is excluded from the ex-ante fixed <math>B_{old}</math> to arrive at emission reductions. The data is gathered at end user household end pertaining to approximate combustion of traditional stoves during field surveys by a surveyor team.</p> <table><tr><th>Strata</th><th>Total population (N)<sup>7</sup></th><th>Reliability</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr><tr><td><math>\mu_{old}</math> Charcoal (CH5300, CH5200 and Econochar)</td><td>1,297</td><td>95/10</td><td>7</td><td>10</td></tr><tr><td><math>\mu_{old}</math> woodfuel (Econofire and M5000)</td><td>204</td><td>95/10</td><td>7</td><td>12</td></tr></table> <p>The sample size has been calculated according to the following equations:</p> $n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$ <p>Where:</p> $V = \frac{p * (1-p)}{p^2}$ <p>A total of 23 samples were surveyed as illustrated above.</p> <p>Where: 1.96 is the z value for the 95% confidence interval precision required as per PP application 95/5 N is the total population</p> <p>Procedures for sampling have been duly articulated in the field monitoring survey spreadsheet and corresponding survey forms containing survey questionnaires furnished to DOE for assessment.</p> <p>Monitoring surveys were conducted by trained third party personnel using stratified random sampling following the standard and guideline for Sampling and surveys for CDM project activities and programme of activities version 08. As described above, it can be said that sampling was accurate.</p>	Strata	Total population (N) <sup>7</sup>	Reliability	Sample Size (n) required	Samples covered during monitoring	$\mu_{old}$ Charcoal (CH5300, CH5200 and Econochar)	1,297	95/10	7	10	$\mu_{old}$ woodfuel (Econofire and M5000)	204	95/10	7	12
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$\mu_{old}$ woodfuel (Econofire and M5000)	204	95/10	7	12													

	<b>Parameter: <math>\eta_{new,y}</math></b>																														
	<b>Name:</b>	Efficiency of the system being deployed as part of the project activity																													
	<b>Description on how the sampling efforts and survey comply with the validated sampling plan:</b>	<p>The efficiency of stoves deployed was determined by conducting water boiling tests (WBT) for a representative random sample from each stove type and age. The CME has undertaken</p> <ul style="list-style-type: none"> <li>Water Boiling Test Report Dated September 2019 for the Programme of Activities (PoA) Cookstoves in Kenya</li> </ul> <table border="1"> <thead> <tr> <th>Strata</th><th>Total population (N)</th><th>Reliability</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>CH5200</td><td>252</td><td>95/10</td><td>7</td><td>10</td></tr> <tr> <td>CH5300</td><td>4,121</td><td>95/10</td><td>7</td><td>10</td></tr> <tr> <td>Econochar</td><td>10,880</td><td>95/10</td><td>7</td><td>10</td></tr> <tr> <td>M5000</td><td>1,072</td><td>95/10</td><td>7</td><td>10</td></tr> <tr> <td>Econofire</td><td>1,194</td><td>95/10</td><td>7</td><td>10</td></tr> </tbody> </table> <p>The parameter <math>\eta_{new,y}</math> is a mean value, therefore the sample size has been calculated according to the following equations:</p> $n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$ <p>Where:</p> $V = \left( \frac{SD}{mean} \right)^2$ <p>A total of 50 samples have been tested for the efficiency across all 5 models under the monitoring period and required confidence precision 95/10 were found to be met.</p> <p>The verification team has reviewed the step-by-step protocol followed in determining the sample size per model, selecting appropriate conditions and conducting the overall WBTs. The Team Lead of WBTs has been interviewed on procedures, calibration and training. The WBT reports have been analysed.</p> <p>The calculations of sample sizes and measurement procedures have largely followed the requirements in registered PoA-DD and CPA-DD, however during course of verification findings have been raised and closed successfully. For further detail, please refer under Appendix-4 of this report.</p>	Strata	Total population (N)	Reliability	Sample Size (n) required	Samples covered during monitoring	CH5200	252	95/10	7	10	CH5300	4,121	95/10	7	10	Econochar	10,880	95/10	7	10	M5000	1,072	95/10	7	10	Econofire	1,194	95/10	7
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Econofire	1,194	95/10	7	10																											
<b>Conclusion</b>	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CL 01, CAR 01, CAR 02, FAR 01 and FAR 02.																													
	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.																													
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.																													
	<p>Based on the assessment of survey and sampling records including WBT and their analysis sheets for the related parameters, it is concluded that all the parameters have been monitored correctly in accordance with registered monitoring plan and the applied methodology.</p> <p>The verification team concludes that all sampled parameters have been calculated correctly in line with the registered corresponding CPA-DDs and the sampling standard. For all the parameters, the achieved relative precision of 10% and 95% confidence level is demonstrated to be met.</p> <p>The involved personnel were reviewed pertaining to the training, data collection, transfer, data storage. The provisions for regular cross verification and review of collected data was also assessed and addressed under FAR 01.</p>																														

	<p>The Monitoring Survey Questioners were also assessed and it is determined that "Question 4: Usage Survey Data (User's Interview)" has provision to identify the possibility of use of another ICS already in operation. Thus, there are sufficient provisions to capture multi ICS usage. Please refer FAR 02 for detailed assessment.</p> <p>Based on above along with the onsite visit and interview and physical inspection of the project stoves installation in Kenya, the verification team concludes the approach and result deemed appropriate and acceptable.</p>
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### E.3.5. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	<p>During the verification, the relevant monitoring equipment has been checked whether the calibration requirements have been met; especially if the calibration frequency is in line with the requirements of the validated CPA-DD and/or the applicable calibration standards.</p> <p>The results as well as the verification procedure are described equipment-wise in the project specific verification checklist (Appendix 6).</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /CAL/</li> </ul>						
<b>Findings</b>	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>Calibration is under the purview of the CME, however, CME has provided the detail of the equipment in the report which were also checked during onsite inspection by the verification team. Verification team could check that equipment involve in the test were newly purchased at the time of use and hence, the measurement done with the duly calibrated instrument<sup>WBT/</sup> and found to be appropriate. Thus, the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.</td></tr> <tr> <td><input type="checkbox"/></td><td>Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions. For details please refer to appendix 6</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>In this context the following CARs, CLs, FARs have been raised: CAR 04</td></tr> </table>	<input checked="" type="checkbox"/>	Calibration is under the purview of the CME, however, CME has provided the detail of the equipment in the report which were also checked during onsite inspection by the verification team. Verification team could check that equipment involve in the test were newly purchased at the time of use and hence, the measurement done with the duly calibrated instrument <sup>WBT/</sup> and found to be appropriate. Thus, the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.	<input type="checkbox"/>	Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions. For details please refer to appendix 6	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 04
<input checked="" type="checkbox"/>	Calibration is under the purview of the CME, however, CME has provided the detail of the equipment in the report which were also checked during onsite inspection by the verification team. Verification team could check that equipment involve in the test were newly purchased at the time of use and hence, the measurement done with the duly calibrated instrument <sup>WBT/</sup> and found to be appropriate. Thus, the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.						
<input type="checkbox"/>	Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions. For details please refer to appendix 6						
<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 04						
<b>Conclusion</b>	<table border="1"> <tr> <td><input type="checkbox"/></td><td>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</td></tr> </table> <p>Though the applied methodology and the registered PoA monitoring plan do not make provision for calibration, it has been checked during onsite visit and via interview with Water Boiling testing team that the equipment used for WBT were duly calibrated (during the year test conducted). PP has submitted all calibration certificates for all the relevant tools and equipment<sup>CAL/</sup>. These tools and equipment were assessed and found to be working properly and accurately.</p>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.						
<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.						

### 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>During the verification the calculation of baseline GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• <i>Transparency:</i> It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> </ul>
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	<ul style="list-style-type: none"> <li>• <i>Parameter consistency</i>: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.</li> <li>• <i>Correctness</i>: It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology.</li> <li>• <i>Completeness</i>: It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>Baseline emission is determined using the following equation in line with applied methodology:</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 biomass used in the absence of the project activity in tonnes/year</p> <p>LAF Net to gross Adjustment factor for leakages</p> <p><math>N_{all}</math> Total number of stoves installed</p> <p><math>Q_{biomass}</math> Average annual biomass consumption per appliance tonnes/ year</p> <p>SOF Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling</p> <p><math>\mu_{old}</math> Amount of woody biomass consumption that is consumed through the continued use of old stoves</p> <p><math>Stove_{year}</math> Calculated average stove year in the monitoring period (years).</p> $B_{y,savings} = B_{old} \cdot \left(1 - \frac{\eta_{old}}{\eta_{new}}\right)$ <p>Where:</p> <p><math>B_{y,savings}</math> Quantity of woody biomass that is saved in tonnes</p> <p><math>B_{old}</math> Quantity of biomass used in the absence of the project activity in tonnes/year</p> <p><math>\eta_{old}</math> Efficiency of the system being replaced</p> <p><math>\eta_{new}</math> Efficiency of the system being deployed as part of the project activity (fraction)</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> <li>• /XLS/</li> <li>• /USAGE/</li> <li>• /WBT/</li> </ul>						
<b>Findings</b>	<table border="1"> <tr> <td data-bbox="454 1489 518 1854" style="text-align: center; vertical-align: middle;"><input checked="" type="checkbox"/></td><td data-bbox="518 1489 1444 1854"> <p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p> </td></tr> <tr> <td data-bbox="454 1854 518 1921" style="text-align: center; vertical-align: middle;"><input checked="" type="checkbox"/></td><td data-bbox="518 1854 1444 1921"> <p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p> </td></tr> <tr> <td data-bbox="454 1921 518 1989" style="text-align: center; vertical-align: middle;"><input checked="" type="checkbox"/></td><td data-bbox="518 1921 1444 1989"> <p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CL 01, CAR 02 and CAR 04</p> </td></tr> </table>	<input checked="" type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>	<input checked="" type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CL 01, CAR 02 and CAR 04</p>
<input checked="" type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>						
<input checked="" type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>						
<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CL 01, CAR 02 and CAR 04</p>						
<b>Conclusion</b>	<table border="1"> <tr> <td data-bbox="454 1989 518 2049" style="text-align: center; vertical-align: middle;"><input type="checkbox"/></td><td data-bbox="518 1989 1444 2049"> <p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p> </td></tr> </table>	<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>				
<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>						



	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 5.
		Based on above and verification of all input values (fixed ex-ante), it can be concluded by verification team that, baseline GHG emissions calculation presented in the MR and corresponding ER sheet is deemed as appropriate.

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

<b>Means of verification</b>		<p>During the verification the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• <i>Transparency</i>: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> <li>• <i>Parameter consistency</i>: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.</li> <li>• <i>Correctness</i>: It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology.</li> <li>• <i>Completeness</i>: It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /CPA-DD/</li> <li>• /XLS/</li> <li>• /AMS-II.G/</li> </ul>
<b>Findings</b>	<input type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>
	<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>-</p>
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		Project emissions are not applicable by the applied methodology for the registered PoA

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

<b>Means of verification</b>		<p>During the verification the calculation of leakage has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• <i>Transparency</i>: It has been checked whether the calculation of leakage is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> <li>• <i>Parameter consistency</i>: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.</li> </ul>
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	<ul style="list-style-type: none"> <li>• <b>Correctness:</b> It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology.</li> <li>• <b>Completeness:</b> It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>Leakage is to be considered by the methodology for non-renewable woody biomass. This can be done either via survey or by applying a default factor of 0.95 to the parameter <math>B_{old}</math>. As per PoA-DD as well as generic and specific CPA-DD PP has applied the default factor to the parameter <math>B_{old}</math>.</p> <p>Besides, leakage is to be considered in case equipment is transferred from outside the boundary to the project activity.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /CPA-DD/</li> <li>• /XLS/</li> <li>• /AMS-II.G/</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/> The calculation of the leakage was found to be fully compliant with the above stated principles. The calculations of leakage GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information have been identified.
	<input type="checkbox"/> The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input type="checkbox"/> In this context the following CARs, CLs, FARs have been raised: -
<b>Conclusion</b>	<input checked="" type="checkbox"/> No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/> The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4. The CME has applied related default factor correctly to the parameter $B_{old}$ . Therefore no further leakage emission result is separately indicated in monitoring report or this report. Besides, DOE could not identify that any equipment is transferred from outside the boundary to the project activity, based on interviews taken and households visited as well as check of PoA set-up and organisation. Cookstoves are newly produced before distribution.

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

<b>Means of verification</b>	<p>The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately.</p> <ul style="list-style-type: none"> <li>- Total baseline emissions,</li> <li>- Total project emissions,</li> <li>- Total leakage,</li> <li>- Total emission reductions.</li> </ul> <p>The MR demonstrate the summary of GHG emission reductions for the monitoring period and calculated according to the applied methodology AMS-II.G as follows:</p> $ER_y = (B_{y,savings} * f_{NRB,y} * NCV_{biomass} * EF_{projected\_fossil\ fuel})$ <p>Where:  <math>ER_y</math> Emission reductions during the period y in tCO<sub>2</sub>e</p>
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	$f_{NRB,y}$	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass		
	$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted		
	$EF_{projected\_fossil\_fuel}$	Emission factor for the substitution of non-renewable biomass by similar consumers.		
	$B_{y,savings}$	Quantity of woody biomass that is saved in tonnes per appliance.		
	<b>Value</b>	<b>5341-P1-0008-CP1</b>	<b>5341-P1-0009-CP1</b>	<b>5341-P1-0010-CP1</b>
	$B_{y,savings}$	3,861.7	3,540.6 3,588.1	4,240.3
	$f_{NRB}$	0.92	0.92	0.92
	$NCV_{biomass}$	0.015	0.015	0.015
	$EF_{projected\_fossil\_fuel}$	81.6	81.6	81.6
	<b>ER<sub>y</sub></b>	<b>4,348</b>	<b>3,987</b>	<b>4,774</b>
<p>It has been assessed whether the values are correct or need to be revised as a consequence of issues identified during the desktop reviews and onsite assessments. Findings have been raised and all monitored parameters have been duly verified.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /CPA-DD/</li> <li>• /PoA-DD/</li> <li>• /AMSII G/</li> <li>• /USAGE/</li> <li>• /WBT/</li> </ul>				
<b>Findings</b>	<input checked="" type="checkbox"/>	Section F.4 of the MR includes in a summary table of the emission reductions calculation.		
	<input type="checkbox"/>	The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.		
	<input type="checkbox"/>	The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.		
	<input checked="" type="checkbox"/>	During the verification issues with impact on the ER calculation have been identified.		
<b>Conclusion</b>		CAR 02, CAR 03 and CAR 04		
	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
<p>-Based on assessment of CPAs covered in this verification, monitoring report version 02, ER calculation spread sheet, sourced documents e.g. usage survey results, WBT results, technical sheet etc. along with onsite interview with concerned personnel including the end users, verification team concludes that the calculation of GHG emission reduction for the applied monitoring period is deemed appropriate and summarised correctly.</p>				

Title and UNFCCC reference number of the CPA	BEy (tCO <sub>2</sub> e)	PEy (tCO <sub>2</sub> e)	Ly (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e)		
				before 1 January 2013	from 1 January 2013	during the entire MP
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00008 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0008-CP1	4,348	0	0	0	4,348	4,348
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00009 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0009-CP1	3,987	0	0	0	3,987	3,987
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00010 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0010-CP1	4,774	0	0	0	4,774	4,774
<b>Total</b>	<b>13,109</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13,109</b>	<b>13,109</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>	The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the included CPA-DD.  It has further checked which of the below listed cases is applicable for the calculated ER of the current monitoring period.	
<b>Findings</b>	<input checked="" type="checkbox"/>	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.
	<input type="checkbox"/>	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.
	<input type="checkbox"/>	Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	-	

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period (tCO <sub>2</sub> )	Value estimated in ex ante calculation in the included CPA-DD(s) (tCO <sub>2</sub> ) <sup>10</sup>
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<sup>10</sup>The estimated amount covers the time from CP start of each CPA (which is within this MP) until the end of MP. The calculation is done on pro-rata basis, as per ER calculation spreadsheet submitted by CME. The estimated ER are appropriately calculated as  $43,382 \times 101 / 365 = 12,0045 \text{ tCO}_2$

Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00008 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0008-CP1	4,348	12,004
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00009 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0009-CP1	3,987	12,004
Improved Cooking Stoves Programme of Activities in Africa – CPA No. 00010 (Kenya) supported by Republic of Korea Version: 4.0 5341-P1-0010-CP1	4,774	12,004
<b>Total</b>	<b>13,109</b>	<b>36,012</b>

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

<b>Means of verification</b>	On the basis of the above comparison of actual values of the monitoring period with the estimations in the registered PoA-DD (E.8.5) and section F.5 of the MR, the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.	
<b>Findings</b>	<input checked="" type="checkbox"/>	No further justification or explanation is deemed required as actual emissions of this MP do not exceed significantly the ex-ante calculated emission reductions (applicable for case 1 and 2).
	<input type="checkbox"/>	For case 3: The PP has provided a related justification in the MR. The reasons for the increase are as follows: - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
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**E.3.7. Assessment of reported sustainable development co-benefits**

<b>Means of verification</b>	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	The project participants have monitored the sustainable development co-benefits of the registered CDM project activity and requested the DOE to verify them. The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> <li>• /unfccc/.</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	Therefore, the DOE has assessed and confirms that: (a) The monitoring has been carried out in accordance with the document for monitoring sustainable development co-benefits, if such document was developed and published on the UNFCCC CDM website in accordance with the “CDM project standard for project activities”; (b) The reported monitoring results correspond to the sustainable development co-benefits of the project activity as observed by the DOE.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:

		-
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
		-

### E.3.8. Global stakeholder consultation

<b>Means of verification</b>		<p>In accordance with the PCP the DOE has submitted the initial version of the monitoring report provided by the PP for this monitoring period to be published on the UNFCCC webpage.</p> <p>The monitoring report has been published from 29/08/2019.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /unfccc/.</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/>	No comments have been received on the published monitoring report for this monitoring period.
	<input type="checkbox"/>	Comments have been received and the DOE has concluded that comments are related to issues outside the CDM rules and requirements. Please refer to the list provided under Conclusion of this Section below for related information.
	<input type="checkbox"/>	<p>Comments have been received.</p> <p>The DOE has</p> <ul style="list-style-type: none"> <li>- requested further information from the submitters of the comments</li> <li>- informed the project participants of the comments received, and requested their feedback within a specified timeframe,</li> <li>- considered the input received and has assessed whether such comments are relevant to the CDM project activity,</li> <li>- acknowledged receipt of all submitted comments on the MR of the proposed CDM project activity,</li> <li>- assessed whether the comments are related to the CDM rules and requirements (if so related findings have been raised as per below),</li> <li>- used all possible means to determine the authenticity of the name and contact details of the individual or organization on whose behalf the comments have been submitted,</li> <li>- contacted the secretariat to make them publicly available (if only addressed to the DOE),</li> <li>- determined whether authentic and relevant comments in the global stakeholder consultation were taken into due account in the PDD of the proposed CDM project activity.</li> </ul>
	<input type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised, i.e. as the DOE concludes that the comments are related to the CDM rules and requirements:</p> <p>-</p>
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<input checked="" type="checkbox"/>	No comments received during the stakeholder consultation process.

## SECTION F. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors where at least one

is being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision-making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore, reporting improvements might have been achieved.

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the submission for requesting for issuance is conducted.

## **SECTION G. Verification opinion**

Envirofit International Ltd. (Envirofit) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5<sup>th</sup> periodic verification of the CDM PoA: "**Improved Cooking Stoves Programme of Activities in Africa**", covering CPA 5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1 with regard to the relevant requirements for CDM Programme of Activities. The PoA reduces GHG emissions due to dissemination of fuel-efficient charcoal and wood stoves compared to the baseline scenario. This verification covers the period from 01/01/2018 - 30/06/2019 (both days included).

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design documents,
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-II.G. ver. 03.0,
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately,
- the monitoring system is in place and functional. The project has generated GHG emission reductions,
- the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

TÜV NORD JI/CDM CP further confirms that the project has achieved emission reductions in the above-mentioned reporting period as follows:

Emission reductions: **13,109 tCO<sub>2</sub>e**

**SECTION H. Certification statement**

As a duly accredited DOE, TÜV NORD CERT confirms that the CDM PoA

**“Improved Cooking Stoves Programme of Activities in Africa”**

registered under

UNFCCC-No.:5341

CPA 5341-P1-0008-CP1, 5341-P1-0009-CP1 and 5341-P1-0010-CP1

has achieved emission reductions in accordance with all applicable requirements for registered CDM project activities during the current monitoring period

MP-No.: 5

from: 01/01/2018

to: 30/06/2019

(including both days) as follows:

Emission reductions: **13,109 tCO<sub>2</sub>e**

New Delhi, 04/05/2020



Prakash Kumar Mishra

Team Leader


TÜV NORD JI/CDM Certification Program



## Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CME	Coordinating/Managing Entity
CO <sub>2</sub>	Carbon dioxide
CO <sub>2eq</sub>	Carbon dioxide equivalent
CL	Clarification Request
DOE	Designated Operational Entity
DVerR	Draft Verification Report
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
ICS	Improved Cookstove
IM	Interview Memo
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
POA-DD	Project of Activities Design Document
CPA-DD	Component Project Activities Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
RC	Reliability check work sheets for WBT and field monitoring test
SD	Standard deviation
UNFCCC	United Nations Framework Convention on Climate Change
VT	Verification Team
VVS	Validation and Verification Standard
WBT(P)	Water Boiling Test (Protocol)
XLS	Emission Reduction Calculation Spread Sheet

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



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TUV NORD JRCOM Certification Program

**Mr. Stefan Winter**


SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitric and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
13.1	Solid waste and wastewater
13.2	Manure

163 - Rev. 5, Date: 2017-07-20

163\_2017-VAN00-F20\_2017-07-20\_rv5.doc      001-VAN00-F20 rev3 / 2012-10-25



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TUV NORD JRCOM Certification Program

**Mr. Prakash Kumar Mishra**


SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-12-17
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2020-12-17

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

146 - Rev. 6, Date: 2016-11-21

146\_2016-VAN00-F20\_2016-11-21\_rv6.doc      001-VAN00-F20 rev3 / 2012-10-25



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TUV NORD JRCOM Certification Program

**Mr. David Lubanga**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2021-10-20
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2021-10-20

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand
13.2	Manure

251 - Rev. 7, Date: 2018-10-19

251\_2018-VAN00-F20\_2018-10-19\_rv7.doc      001-VAN00-F20 rev3 / 2012-10-25

### Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	Reference s to the document	Provider
1	UNFCCC	<b>/AMS-II.G/</b>	<ul style="list-style-type: none"> <li>AMS-II.G: Energy efficiency measures in thermal applications of non-renewable biomass", version 03.0</li> </ul>	-	Other
2	CME	<b>/CAL/</b>	Purchase records/photos monitoring equipment along with technical specification e.g. Thermometers, scales, anemometer, etc.	-	Other
3	CME	<b>/CPA-DD/</b>	<ul style="list-style-type: none"> <li>CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00008 (Kenya) supported by Republic of Korea Version 4.0, dated 28/02/2019</li> <li>CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00009 (Kenya) supported by Republic of Korea Version 4.0, dated 28/02/2019</li> <li>CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00010 (Kenya) supported by Republic of Korea Version 4.0, dated 28/02/2019</li> </ul>	-	Other
4	CME	<b>/DB/</b>	<ol style="list-style-type: none"> <li>ICS Databases sheet (PoA 5341 MP#5 ICS database 13012020.xlsx)</li> <li>Contractual agreement in between the CME and the DO</li> <li>Proof of Carbon Credits waiver by End user</li> <li>Stoves sales receipts</li> <li>Evidence for random number generator for sampling</li> <li>Evidence for display of programme logo on the stoves</li> <li>Stove User Agreement</li> </ol>	- Evidence for random number generator for sampling	Other
5	DOE	<b>/CPM/</b>	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)	-	Other
6	CME	<b>/USAGE/</b>	<ol style="list-style-type: none"> <li>Sample Usage Survey Forms,</li> <li>Usage survey analysis report integrated as part of the ER worksheet</li> <li>PoA 5341 MP#5 Monitoring Survey Forms</li> </ol>	-	Other
7	IPCC	<b>/IPCC/</b>	<ol style="list-style-type: none"> <li>1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book</li> <li>2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book</li> </ol>	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	Other
8	UNFCCC	<b>/KPI/</b>	Kyoto Protocol (1997)	<a href="http://unfccc.int/kyoto_protocol">http://unfccc.int/kyoto_protocol</a>	Other

No.	Author	Reference	Title	Reference s to the document	Provider
				<a href="/items/2830.php">/items/2830.php</a>	
09	UNFCCC	<b>/MA/</b>	Decision 3/CMP. 1 (Marrakesh – Accords)	<a href="http://cdm.unfccc.int/Reference/COPMOP/index.html">http://cdm.unfccc.int/Reference/COPMOP/index.html</a>	Other
10	UNFCCC	<b>/MR/</b>	Monitoring Report titled 'Improved Cooking Stoves Programme of Activities in Africa', <ul style="list-style-type: none"> <li>• Version 1.0, dated 27/12/2019</li> <li>• Version 2.0, dated 28/01/2020</li> <li>• Version 3.0, dated 25/02/2020</li> <li>• Version 4.0, dated 29/04/2020</li> </ul>	-	Other
11	UNFCCC	<b>/MRT/</b>	Monitoring Report Form (CDM-PoA-MR-FORM), Version 03.0	<a href="https://cdm.unfccc.int/Reference/PDDs/Forms/index.html">https://cdm.unfccc.int/Reference/PDDs/Forms/index.html</a>	Other
12	UNFCCC	<b>/PoA-DD/</b>	Project Design Document for CDM PoA project: "Improved Cooking Stoves Programme of Activities in Africa" version 3.2, dated 27/11/2012	<a href="https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/YNXCPIJ5ZO7DTRGMV0F2AKEU486LQS">https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/YNXCPIJ5ZO7DTRGMV0F2AKEU486LQS</a>	Other
13	UNFCCC	<b>/PS/</b>	CDM Project Standard for Programme of activities (Version 2.0)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
14	CME	<b>/SSQ/</b>	<ul style="list-style-type: none"> <li>• Sample Monitoring Survey Forms</li> <li>• Sample CPA Distribution Records</li> </ul>		Other
15	CME	<b>/VAL/</b>	<ul style="list-style-type: none"> <li>• Validation Report for CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00008 (Kenya) supported by Republic of Korea Version 2, dated 15/03/2019</li> <li>• Validation Report for CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00009 (Kenya) supported by Republic of Korea Version 2, dated 15/03/2019</li> <li>• Validation Report for CPA-DD titled "Improved Cooking Stoves Programme of Activities in Africa" CPA No. 00010 (Kenya) supported by Republic of Korea Version 2, dated 15/03/2019</li> </ul>		Other
16	UNFCCC	<b>/VVS/</b>	CDM validation and verification standard for programmes of activities (Version 2.0)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
18	CME	<b>/WBT/</b>	<ul style="list-style-type: none"> <li>• Water Boiling Test Records for charcoal September 2019</li> </ul>	-	Other

No.	Author	Reference	Title	References to the document	Provider
			<ul style="list-style-type: none"> <li>Water Boiling Test Records for wood September 2019</li> <li>Analysis sheet of water boiling test (PoA 5341 MP#5 Kenya CEPRD WBT Efficiency Calculator 27122019.xlsx)</li> <li>Purchase record of the newly bought instruments used in WBT under the current monitoring period.</li> </ul>		
19	CME	<b>/WBTP/</b>	<ul style="list-style-type: none"> <li>The Water Boiling Test protocol, version 4.2.3</li> <li>Guidelines for Testing Charcoal Stoves with WBT 4.2.2 June 14, 2013</li> </ul>	-	Other
20	CME	<b>/WC/</b>	End-User Warranty Cards	-	Other
21	UNFCCC	<b>/SAMPLE/</b>	<ul style="list-style-type: none"> <li>"Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities" (version 04.0)</li> <li>"Standard for Sampling and Surveys for CDM Project Activities and Programme Activities" (version 08.0)</li> </ul>	<a href="https://cdm.unfccc.int/Reference/Guidance/index.html">https://cdm.unfccc.int/Reference/Guidance/index.html</a> <a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
22	UNFCCC	<b>/GOT/</b>	Glossary "CDM terms" (version 10.0)	<a href="https://cdm.unfccc.int/filestorage/ex/t/externalfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu">https://cdm.unfccc.int/filestorage/ex/t/externalfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu</a>	Other
23	CME	<b>/XLS/</b>	<ul style="list-style-type: none"> <li>Emission Reduction worksheet titled PoA 5341 MP#5 ER Calculator 27122019</li> <li>Emission Reduction worksheet titled PoA 5341 MP#5 ER Calculator v2.0 16012020.xlsx</li> <li>Emission Reduction worksheet titled PoA 5341 MP#5 ER Calculator v3.0 29042020.xlsx</li> </ul>	-	PP
24	CME	<b>/RC/</b>	Reliability Check <ul style="list-style-type: none"> <li>Sample size and Reliability check for WBT integrated into the ER worksheet</li> </ul>	-	PP
25	UNFCCC	<b>/unfccc/</b>	UNFCCC	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	Other
26	IPCC	<b>/ipcc/</b>	IPCC publications	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	Other

No.	Author	Reference	Title	Reference s to the document	Provider
27	CME	<b>/TRG-MANUAL/</b>	Training records of imparted training for below fields : <ul style="list-style-type: none"> <li>• WBT team training records</li> <li>• Usage Survey team-Guidance note on monitoring Survey</li> <li>• Sales and marketing team and all relevant personnel involved in GHG monitoring</li> <li>• Monitoring team</li> <li>• CDM PoA 5341 Kenya CME Manual</li> </ul>		Other
28	PP	<b>/VERIF/</b>	Verification and Certification Report for CDM programme of activities titled "Improved Cooking Stoves Programme of Activities in Africa" for CPA No. 0001 to CPA No. 0007 Version 05 dated 03/02/2019		
29	PP	<b>/QA/QC/</b>	Internal QA/QC quarterly report for data review process	-	Other

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

Table 3. Remaining FARs from validation and/or previous verification

<b>FAR ID</b>	<b>01</b>	<b>Section no.</b>	<b>D.6.2</b>	<b>Date: 20/02/2019</b>
<b>Description of FAR</b>				
<b>FAR raised during Validation on CPA-00008, CPA-00009 and CPA-00010</b>				
At the time of first verification the verifying DOE shall ensure				
<ol style="list-style-type: none"> <li>1. Teams involved in data collection, transfer and storage have been trained</li> <li>2. Regular cross verification and review of collected data is being conducted</li> </ol>				
<b>CME response</b>				<b>Date: 29/01/2020</b>
<ol style="list-style-type: none"> <li>1. The ICS Distribution data is collected via CPA distribution records. The distribution partners are trained on filling the CPA distribution records properly. The filled distribution records are transferred to the CME office where they are stored in original / electronic format in the CME office on cloud and is accessible to concerned staff members. The partners are incentivized for returning completed and correctly filled forms to ensure that the number of incomplete / incorrect forms received remains minimal. The monitoring staff before approving any CPA distribution records check the same for completeness and accuracy. In case the collected data is not complete / incorrect in the CPA distribution record, the monitoring team sends the same back to distribution partner for rectification.</li> <li>2. The monitoring team ensures that the collected data is complete and accurate by reviewing as well as cross verifying the collected data. The CPA distribution records are compiled in the CPA distribution database which is further reviewed by the Carbon Projects Development Manager at CME. The reviewed database are sent to the senior management and investors regularly.</li> </ol>				
<b>Documentation provided by the CME</b>				
Monitoring Team.pdf CDM PoA 5341 Kenya CME Manual				
<b>DOE assessment</b>				<b>Date: 30/01/2020</b>

1. The Assessment Team has reviewed the process of Training which consisted of presentations pertaining to "Guidance note on Monitoring Survey" and "CDM PoA 5341 Kenya CME Manual" designed by Envirofit. These training modules in form of presentation together sufficiently cover the requirements of trainings to ensure proper data collection, transfer and storage. The Verification Team also assessed the list of the Team Members involved under the formal declaration in form of "Monitoring Team.pdf" which captures all the Team Members. Subsequently the Team Members underwent the Trainings and received the Certificates after demonstrating the required competence (post training). Thus, the requirements pertaining to this point are met.
2. The Carbon Projects Development Manager Mr. Lohia along with Managing Director Mr. David Small were interviewed, the process of the data collection, quality checks and aggregation was evidenced during the site visit. Further, with the help of online cloud-based reporting mechanism, the senior management and investors have live access to the stove distribution database for regular reviews and quality check (at least quarterly as informed). Verification team confirmed the same via cross checking live online reporting platform and review of quarterly report submitted to investors<sup>/QA.QC/</sup>.

The FAR is deemed CLOSED

**Conclusion**

*Tick the appropriate checkbox*

- ☐ To be checked during the next periodic verification
- ☒ The finding is closed

<b>FAR ID</b>	<b>02</b>	<b>Section no.</b>	<b>UNFCCC Review comment</b>	<b>Date: 03/02/2019</b>
<b>Description of FAR</b>				
<b>FAR raised during Fourth Periodic Verification</b>				
The verifying DOE shall confirm the end user data base for the whole population presented during the next verification. Also, for all cases where multiple ICS are found being used in a household during monitoring, the CME shall check consistency of information with CPA database and adjust ICS population accordingly.				
<b>CME response</b>				<b>Date: 29/01/2020</b>
<p>The ICS in these CPAs are fully sponsored by CERPD 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 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 not included in the ER calculations. This is further substantiated by the fact that no two ICS in the CPA distribution database have same name and address combination.</p> <p>The CPA distribution database is being submitted.</p> <p>Besides, the ex-post monitoring involves a cross check of presence of more than one project ICS in the sampled household. The ICS population is discounted accordingly (if 5% of samples report using two units of project ICS, the entire population is discounted by 5%) to ensure that only one ICS is credited per household. Given extensive checks are conducted during sales and distribution as well as during CPA distribution database preparation, hence no sampled household was found using more than one project ICS. Please refer the monitoring survey forms for details.</p>				
<b>Documentation provided by the CME</b>				
CPA distribution database				
Monitoring survey records				
<b>DOE assessment</b>				<b>Date: 30/01/2020</b>
<p>The Verification Team Assessed the below mentioned documents</p> <ul style="list-style-type: none"> <li>• CPA Distribution Records/ Sample stove user agreement</li> <li>• Sales database</li> <li>• PoA Distribution and Monitoring Database</li> <li>• Technical Specifications of Stove</li> <li>• Monitoring Survey Sheets (scanned copies)</li> </ul> <p><b>CPA Distribution Records/ Sample stove user agreement:</b></p> <p>The CPA Distribution Record has provision to identify the type of baseline stove replaced vide the question "TYPE OF STOVE REPLACED". Thus, at the time of the stove distribution itself, it is possible to record</p>				

information of the baseline technology and fuel being used by the EF ICS users at the time of distribution. Thus, only users' who use traditional / inefficient wood or charcoal stoves in the baseline are included in ER calculations. The CPA Distribution Record also has a provision to check if the recipient is taking the stove for self-use or for someone else. In case the stove will be used by someone else, the name and address of the actual stove user is recorded. This ensures that all ICS are listed on the name of their actual end users. Additionally, the CPA distribution record also have a provision to check if the beneficiary is already using an Envirofit stove vide the question, "ARE YOU CURRENTLY USING AN ENVIROFIT STOVE". Any user reporting use of existing Envirofit ICS is not included in the PoA / CPA database. Thus, CME ensures that only a single ICS is credited in a given household at time of stove distribution.

#### **Sales database and PoA Distribution and Monitoring Database:**

Sales database captures information which included the Unique ICS number, name of the end user, coordinates, baseline stove and fuel information. The Sales database is integrated into PoA Distribution and Monitoring Database which allows to identify if there are any multiple ICS listed with a given user at CPA as well as PoA level. The Verification Team also undertook the check of the PoA Sales database to check if the

- Same user has multiple ICS
- Unique ICS is allotted to multiple users (duplicate serial numbers)
- Multiple ICS registered to same coordinate (same user name, address and phone number)

Nothing was observed deviant to the registered monitoring plan and no instance of multiple ICS was identified after review of the PoA database. Thus, CME ensures that only a single ICS is credited in a given household at time of stove distribution.

Further, the CME has checked vide ex-post sampling, presence of multiple project ICS in a given household. All of the monitored household were found using single unit of Project stove in their households. The same was confirmed during the on-site audit based on interview conducted with the selected samples.

#### **Technical Specification of Stove:**

The specification of the stoves distributed in the CPAs are given in the Envirofit Product Catalogue. This information acts as key input during the ex-post sampling studies (Monitoring Surveys). The Technical Specification is uniquely defined based on each model of stove.

#### **Monitoring Survey Sheets (scanned copies):**

Monitoring Survey Sheets (scanned hard copy) were verified by the Verification Team for the confirmation of ex-post monitoring. The monitoring survey sheets (scanned hard copy) are being submitted and same was duly verified with the ER calculator, tab: "Monitoring Data Kenya". 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.

FAR 02 has been CLOSED.

<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> The finding is closed
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**Table 3. CLs from this verification**

CL ID	01	Section no.	ER Worksheet, ICS Database	Date: 15/01/2020
<b>Description of CL</b>				
The submitted MR is deficient with respect to the details as to how it identified multiple ICS being used in a household during monitoring, and how the CME performed the consistency of information with its logged CPA database and adjusted ICS population accordingly.				
<b>CME response</b>				Date: 29/01/2020
Same as response to FAR 02 above				
<b>Documentation provided by the CME</b>				
MR				



<b>DOE assessment</b>		<b>Date:</b> 30/01/2020
The MR has also been updated with respect to this explanation as state under the FAR 02. CL is CLOSED.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

Table 4. CARs from this verification

<b>CAR ID</b>	<b>01</b>	<b>Section no.</b>	<b>B.1</b>	<b>Date:</b> 15/01/2020
<b>Description of CAR</b>				
It is observed that the stove model CH5200 is disseminated. Model CH5200 is not indicated under the CPA-DD. Transparent description <ul style="list-style-type: none"> <li>To justify that the stove model meets the eligibility criteria stated in the PoA-DD,</li> <li>Demonstration that the included model is homogenous to the models of stoves mentioned in the registered CPA-DDs</li> </ul>				
<b>CME response</b>				<b>Date:</b> 29/01/2020
Please refer the registered CPA-DDs page 4, footnote 6. The stoves listed in section A.3 of the PDD are merely illustrative and more ICS models may be added in the CPA during the crediting period. The compliance of CH5200 with relevant eligibility criteria is as follows:				
No.	Eligibility criteria		Assessment for CPAs	
	Description	Conditions to be met	Means of proof	Confirmation
#3	Applicability of Methodology AMS-II. G - Technology type	The ICS uses one of the following fuel types: <ul style="list-style-type: none"> <li>Wood fuel</li> <li>Charcoal</li> </ul>	Technical specification of ICS provided	CH5200 is a charcoal fuel-based ICS
#4	Applicability of Methodology AMS-II. G – Minimum ICS efficiency/ specifications of technology including the level and type of service	The ICS has a minimum efficiency of 20% (AMS-II.G., v 3.0, para 1)	Technical specification of ICS provided (either from manufacturer's specifications or test results using the Emissions & Performance Test Protocol (EPTP))	Please refer the manufacturer's specification as given in the product catalogue. The rated thermal efficiency of CH5200 is 36.1%
As mentioned above, the stove model listed in the CPA-DD are only indicative. An ICS model not listed in CPA-DD may be homogeneous or heterogeneous to those listed. The sampling shall account any un-listed model accordingly (simple random sampling in case of homogeneous and stratified random sampling in case of heterogeneous) for the purpose of ex-post monitoring and ER calculations.				
In this case however, the CH5200 is homogeneous to other charcoal fuel ICS listed in the CPA-DD on the basis of the following:				
Homogeneity condition		Characteristic of Population	Status of population	
Country		all units have been distributed in the same geographical area, i.e. Kenya	homogeneous	
Fuel Type – charcoal / wood fuel		There are two fuel type in the population: Charcoal and woodfuel.	Charcoal stoves have been considered as one sampling frame and wood fuel stoves have been considered as other sampling frame.	
End user – domestic / small-medium enterprises / community		all units are for domestic (household) usage as per their design	Homogeneous within each sampling frame	
Stove Type - efficiencies are in a similar range defined as being within +/-10% of each other and they have other common design features		the stove models disseminated have efficiencies within +/-10% of each other	Homogeneous within each sampling frame as per the following: Econochar – 34.3% CH5300 – 35.7% CH5200 – 36.1%	

Thus, CH5200 is in compliance with the inclusion eligibility criteria as well as homogenous with the ICS models listed in the CPA-DD	
<b>Documentation provided by the CME</b>	
Product Catalogue of Model CH5200	
<b>DOE assessment</b>	<b>Date:</b> 30/01/2020
<p>The Verification Team referred to the PoA-DD, section A.4.2.1. Technology or measures to be employed by the SSC-CPA (page- 6) <i>"Other wood and charcoal stoves produced by Envirofit and/or other manufacturers could be included in a CPA under the PoA as well. Inclusion of such stoves would be subject to the completion of appropriate tests to prove that stove efficiencies meet the requirements of the methodology and the eligibility criteria of the PoA as further specified in Section A.4.2.2."</i></p> <p>This the CPA-DD is clear that the inclusion of stove models is not limited to the listed models as stated in the CPA-DD. The listed models are indicative in nature. Furthermore, it is also necessary to assess the eligibility of the new model before with the help of established eligibility criteria. Step by step specific requirements of the eligibility criteria are assessed as below:</p> <p>The Verification Team has reviewed the submitted Product Catalogue and the arguments of the CME in above response. The Verification Team accepts that the model CH5200 is</p> <ul style="list-style-type: none"> <li>Model CH5200 is distributed in the host country Kenya based on the review of submitted – Reference -ICS Records- - <b>Eligibility Criterion 1 is met.</b></li> <li>The stoves bear unique serial ID and other data which is captures as part of ICS Sales Database and additionally Program Logo is displayed on ICS. – This was verified during site visit. <b>Eligibility Criterion 2 is met.</b></li> <li>Model CH5200 is designed and deployed to combust charcoal which is identified as one of fuel under the inclusion criteria- Reference- Product Catalogue of Model CH5200)- <b>Eligibility Criterion 3 is met.</b></li> <li>The product catalogue of Model CH5200 also confirms efficiency above 20 % - <b>Eligibility Criterion 4 is met.</b></li> <li>It is also noteworthy that the other eligibility criteria are not going to get affected by the dissemination of the Model CH5200 under the CPA's</li> </ul> <p>Explanation is accepted. The MR is appropriately updated with respect to this explanation. CAR has been CLOSED.</p>	
<b>Conclusion</b> Tick the appropriate checkbox	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

<b>CAR ID</b>	<b>02</b>	<b>Section no.</b>	<b>ER Worksheet</b>	<b>Date:</b> 15/01/2020
<b>Description of CAR</b>				
Below inconsistencies are identified in the submitted worksheet. Respective tabs are references below:				
<b>Tab: ER Calculations</b>				
<ul style="list-style-type: none"> <li>The weighted average value of the efficiency is not appropriately calculated as all the charcoal stoves are not considered for calculation of parameter "<math>\eta_{new,ycharcoal}</math>"</li> <li>The weighted average value of the efficiency is not appropriately calculated as all the wood stoves are not considered for calculation of parameter "<math>\eta_{new,ywoodfuel}</math>"</li> </ul>				
<b>CME response</b>				<b>Date:</b> 29/01/2020
<ul style="list-style-type: none"> <li>The weighted average efficiency calculation for charcoal and wood ICS has now been corrected.</li> </ul>				
<b>Documentation provided by the CME</b>				
PoA 5341 MP#5 ER Calculator v1.1 13012020				
<b>DOE assessment</b>				<b>Date:</b> 30/01/2020
<b>Tab: ER Calculations</b>				
<ul style="list-style-type: none"> <li>The weighted average value of the efficiency is now appropriately calculated as all the charcoal stoves and considered for calculation of parameter "<math>\eta_{new,ycharcoal}</math>"</li> <li>The weighted average value of the efficiency is now appropriately calculated as all the wood stoves and considered for calculation of parameter "<math>\eta_{new,ywoodfuel}</math>"</li> </ul>				
Explanation is accepted. The ER worksheet and MR is appropriately updated with respect to this explanation. CAR has been CLOSED.				

<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)
	<input checked="" type="checkbox"/> The finding is closed

<b>CAR ID</b>	03	<b>Section no.</b>	F.5.1	<b>Date:</b> 15/01/2020
<b>Description of CAR</b>				
The section F.5.1 of the MR is not accurately calculating the estimated emission reductions as the stated calculation of ER (= 43,382*101/365) is limited to single CPA; whereas 03 CPA's are reported under the submitted monitoring report.				
<b>CME response</b>				<b>Date:</b> 29/01/2020
The information presented in for one CPA-DD. The same has now been clarified in section F.5.1 of the revised MR.				
<b>Documentation provided by the CME</b>				
Revised Monitoring Report				
<b>DOE assessment</b>				<b>Date:</b> 30/01/2020
The section F.5.1 of CPA-DD now appropriately provides transparency on the calculation of the ex-ante estimated emission reductions on the CPA basis. This value is same for all the CPA's under the monitoring. Thus, the Finding has been CLOSED.				
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)			
	<input checked="" type="checkbox"/> The finding is closed			

<b>CAR ID</b>	04	<b>Section no.</b>	ER Worksheet	<b>Date:</b> 15/01/2020
<b>Description of CAR</b>				
Below Documents are requested				
<ul style="list-style-type: none"> <li>• Contract between the DO and CME to confirm the continuity of contractual relationship in line with the Inclusion Criteria 3</li> <li>• Stove specifications for CH5200 models disseminated monitoring period</li> <li>• Proof of Carbon Credits waiver by End user (Sample evidences)</li> <li>• Stoves sales receipt (Sample evidences)</li> <li>• Training records of the Envirofit personnel on the following aspects               <ul style="list-style-type: none"> <li>○ Introduction to project technologies</li> <li>○ Overview of monitoring &amp; sampling plan</li> <li>○ understanding of survey questionnaire</li> <li>○ Evaluation of user response and feedback</li> <li>○ Assessing stove usage</li> <li>○ WBT protocol</li> <li>○ Measurement instruments</li> <li>○ Conducting WBTs</li> <li>○ Recording and archiving of data</li> </ul> </li> <li>• Water boiling test records</li> <li>• Manuals for the thermometer, weighing machine and moisture meter used for monitoring of the stove efficiency along with evidence of purchase of new moisture meter and weighing scale and calibration certificate for thermometer</li> <li>• Contractual agreement in between the CME and the DO as per the eligibility criteria number 13</li> <li>• Evidence for random number generator for sampling</li> <li>• WBT conducting methodology for the cook stoves</li> <li>• Sample Warranty cards</li> <li>• Evidence for display of programme logo and unique serial number on the ICS unit to avoid double counting</li> </ul>				
<b>CME response</b>				<b>Date:</b> 29/01/2020
The requested documents are being submitted				
<b>Documentation provided by the CME</b>				
<ul style="list-style-type: none"> <li>• Contract between the EF Kenya (DO) and EF International (CME)</li> <li>• Product Catalogue - Stove specifications for CH5200</li> </ul>				

<ul style="list-style-type: none"> <li>• Proof of Carbon Credits waiver by End user (Sample CPA distribution records)</li> <li>• Same as CPA distribution records</li> <li>• Training records of the Envirofit personnel</li> <li>• Water boiling test records</li> <li>• Monitoring equipment photographs, manuals, and invoices</li> <li>• Evidence for random number generator for sampling</li> <li>• EPTP protocol</li> <li>• Same as CPA distribution records</li> <li>• The ICS bear an Envirofit logo and unique serial number to avoid double counting.</li> </ul>	
<b>DOE assessment</b>	<b>Date:</b> 30/01/2020
<p>All the necessary above documents are submitted to the Verification Team. Demonstration of eligibility criteria has been met. Finding has been CLOSED.</p> <p>Detailed assessment is as below:</p> <ul style="list-style-type: none"> <li>• Contract between the EF Kenya (DO) and EF International (CME) is submitted and reviewed. The contract follows the requirements of eligibility criteria.</li> <li>• Product Catalogue - Stove specifications for CH5200 is reviewed. The stated technical specifications are reviewed. Further explanation on assessment is elaborated under CAR 01 above.</li> <li>• Sample CPA distribution record confirms that the Carbon Credits are waived by the User</li> <li>• CPA Distribution records are submitted and evaluated. The User data is also compared with the ER worksheet data and found consistent.</li> <li>• Training Records of the Envirofit person confirms that sufficient training is provided to the personnel in area as requested in the Finding. Additionally also refer closure of FAR 1 above</li> <li>• The WBT test reports along with the supportive invoices for purchase of corresponding instruments (necessary for undertaking WBT Test<sup>WBT</sup>) is furnished</li> <li>• Monitoring equipment photographs, manual and invoices are submitted. The Verification Team confirms that all employed instruments were duly calibrated at time of the WBT Test<sup>WBT</sup>.</li> <li>• Evidence of the Random number generator for charcoal and wood is submitted to the Verification Team. The CME has utilized the random number generator STAT TREK to generate the samples.</li> <li>• EPTP protocol is submitted which confirms with the methodology for WBT for the cook stoves. Based on the review of the WBT calculations and the protocol, it can be confirmed that the WBT is appropriately calculated.</li> <li>• Sample warranty cards are evaluated against the CPA Distribution Records. The data was found consistent.</li> <li>• The photographs of the program logo were submitted. In addition during the site visit, the verification Team also identified that program logo was apparent on the stove.</li> </ul> <p>All the necessary above documents are submitted to the Verification Team. Demonstration of eligibility criteria has been met. Finding has been CLOSED.</p>	
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Table 5. FARs from this verification

<b>FAR ID</b>	<b>xx</b>	<b>Section No.</b>	<b>Date: DD/MM/YYYY</b>
<b>Description of FAR</b>			
<b>CME response</b>			<b>Date: DD/MM/YYYY</b>
<b>Documentation provided by the CME</b>			
<b>DOE assessment</b>			<b>Date: DD/MM/YYYY</b>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification		

## Appendix 5. Monitored Parameters

Table A-5: Periodic Verification Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<b>1. <i>N<sub>all</sub></i></b>		<b>Total number of stoves installed</b>		
<b>a) Measurement / Determination method (VVS, §§ 346-350)</b> Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /VAL/ /VERIF/	<p><b>Description:</b>  The number of stoves installed are tracked through sales database for Econofire /SmartSaver Wood, M5000/Supersaver Wood, CH5300 - Charcoal, CH5200 - Charcoal and Econochar /SmartSaver Charcoal and recorded in CPA Distribution Records. The recording of the sales is done on regular basis and the PoA Distribution and Monitoring Database is accordingly updated. The recording contains the details like name of the purchaser, the serial number of the stoves, the date of sale and the buyer's telephone number and other details. The sellers retain one copy of warranty card. Clarification is requested as the MR is deficient with respect to the provisions of the FAR 02. The Assessment Team has also raised CL 01.</p> <p>CME has followed the registered monitoring plan of the PoA and CPA-DD and set forth the provision to conduct an annual survey to monitor this parameter through sampling and survey.</p> <p><b>Verifier's action:</b>  The verification team pulled stored random form and compared the details of the indicated with the information in the provided end user database. Furthermore, the team randomly selected households from the database and conducted direct visits to compare the information in the database with the actual stoves being used.</p> <p><b>Conclusion:</b>  CL 01 and FAR 02 were raised.</p>	<del>CL-01</del> <del>FAR-02</del>	OK
<b>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</b>	/PoA-DD/ /CPA-DD/ /AMSII.G/	<p><b>Description:</b>  The number of stoves sold is ensured by CPA Sales Database and warranty cards. The warranty Card depicts the summary for</p>	<del>CL-01</del> <del>FAR-02</del>	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	/DB/ /WC/ /MR/ /XLS/ /VERIF/ /VAL/	<p>each stove type while the CPA Sales Data base captures the details of the purchaser. The two must be internally consistent. Administrative staff at the producer's office cross-check the information once more against the warranty cards. The CPA Sales Database is integrated into the PoA Distribution and Monitoring Database maintained by CME. Clarification is requested as the MR is deficient with respect to the provisions of the FAR 2 which is linked with accuracy of monitoring of parameter <math>N_{all}</math>. The Assessment Team has also raised CL 1 following the FAR 02.</p> <p><i>Verifier's action:</i> The verifier cross-checked all documents: sample warranty cards, CPA sales databases, and carried out onsite interviews and desk review.</p> <p><i>Conclusion:</i> CL 01 and FAR 02 has been raised to ensure accuracy in the monitoring of the parameter <math>N_{all}</math>.</p>		
<p><b>c) Correctness</b> (VVS, §§ 346-350)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /VERIF/ /VAL/	<p><input type="checkbox"/> Correct      <input checked="" type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i> The value given in the draft MR cannot be deemed as appropriate as there are pending issues.</p> <p><i>Verifier's action:</i> The verification team compared the monitoring procedures, Data bases, Warranty Cards and QA/ QC measures.</p> <p><i>Conclusion:</i> CL 01 and FAR 02 were raised.</p>	CL-01 FAR-02	OK
<b>2. SOF</b>		<b>Stove Operation Fraction – used to determine the share of distributed stoves that are still operating, measured ex-post through sampling</b>		
<p><b>a) Measurement / Determination method</b> (VVS, §§ 346-350)</p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p>	/IM01/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/	<p><i>Description:</i> The parameter represents the investigation of the proportion of operational ICS installations within the sampled ICS. This parameter is measured ex-post through sampling approach. The parameter is determined appropriately on annual basis as per the PoA monitoring requirements.</p>	FAR-04	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</p> <p>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	<p>/MR/ /XLS/ /USAGE/ /VERIF/ /VAL/</p>	<p>The SOF is calculated based on the established correlation:</p> $\text{SOF} = n_{\text{Operational}} / n_{\text{Total}},$ <p>where n = number of samples</p> <p>In addition, the verification team has interviewed the enumerators to confirm that the CME provided training, verified the guidelines and monitoring templates to ensure that the survey was followed as per appropriate procedures.</p> <p>Following the provisions of the FAR 01, the verification Team also assessed the competency of the personnel involved.</p> <p><i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators. Survey results were assessed.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan.</p>		
<p><b>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /USAGE/ /VERIF/ /VAL/</p>	<p><i>Description:</i> The parameter represents the investigation of the number of operational ICS installations within the sampled ICS. Thus, the results are based on the survey outcomes. No instruments are utilized. However, the quality checks of the sampling approach and data confirms that the results are within the accuracy limits.</p> <p><i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators. Survey results were assessed.</p> <p><i>Conclusion:</i> The parameter is determined appropriately.</p>	OK	OK
<p><b>c) Correctness (VVS, §§ 346-350)</b></p>	<p>/IM01/ /PoA-DD/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.	/CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /USAGE/ /VERIF/ /VAL/	The results are accurate. The parameter is determined based on the provision of the established monitoring plan.  <i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators.  <i>Conclusion:</i> The parameter is determined appropriately		
<b>3. <math>\eta_{new}</math></b>		<b>Efficiency of the system being deployed as part of the project activity</b>		
<b>a) Measurement / Determination method (VVS, §§ 346-350)</b> Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /RC/ /XLS/ /USAGE/ /VERIF/ /VAL/ /TRG/	<i>Description:</i> The efficiency of stoves deployed was determined through the sample testing of stoves by performing WBTs The CME has undertaken <ul style="list-style-type: none"> <li>Water Boiling Test Report</li> <li>The reported values of the thermal efficiency of different stove models are presented in the WBT report</li> </ul> Weighted Average efficiency has been calculated as more than one type stove model has been distributed, calculation worksheet integrated as part of the MR under tab: "WBT Summary" is submitted. However, the WBT report is not submitted, CAR 04 has been raised.  <i>Verifier's action:</i> The verification team has reviewed the step-by-step protocol followed in determining the sample size per age group, selecting appropriate conditions and conducting the overall WBTs. The director in charge of WBTs has been interviewed on procedures, calibration and training. Based on assessment of training records of the WBT personnel and other person involved in the test along with their personal interview during onsite verification it could be confirmed that the WBT calculation which is part of the MR is reliable and hence, acceptable.  <i>Conclusion:</i>	CAR 04	OK



Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>The calculations of sample sizes and measurement procedures have largely followed applied methodology and registered monitoring/sampling of the PoA/CPA-DD and also in coherence with WBT protocol by PCIA as available on GACC website. The WBT tests conducted, were distributed across various models present in the CPAs under verification.</p> <p>Based on above, verification team can conclude that efficiency test results presented for the various models of ICS under current monitoring period can be accepted as deemed appropriate and in line with registered monitoring plan, applied methodology and WBT protocol.</p>		
<p><b>b) Accuracy and QA/QC Procedure</b> <b>(VVS, §§ 351-357)</b> <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	<p>/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /RC/ /XLS/ /USAGE/ /VERIF/ /VAL/</p>	<p><i>Description:</i> The verification team requested for calibration records and status of equipment used in conducting the WBTs (Thermometers, scales, anemometer, hygrometer). In addition, the stoves selected and their ages needs to be checked and compared with the information in the WBT reports. CAR 04 has been raised. The verification Team also verified the Reliability checks and confirms that the results are appropriate.</p> <p><i>Verifier's action:</i> The audit team visited the CME office and conducted interviews with the staff members present. Questions included testing procedures, QA/QC measures, calculations and testing conditions, reliability checks.</p> <p><i>Conclusion:</i> Details of calibration are requested to ascertain the QA/ QC procedures. CAR 04 has been raised in this context.</p>	CAR 04	OK
<p><b>c) Correctness</b> <b>(VVS, §§ 346-350)</b> <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /RC/ /WC/ /MR/ /XLS/</p>	<p><input type="checkbox"/> Correct      <input checked="" type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i> Values have been presented in section E.2 of the MR and as per the provided excel calculations. However, accuracy is subjected to resolution of pending issues.</p> <p><i>Verifier's action:</i></p>	CAR 04	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
	/USAGE/ /VERIF/ /VAL/	<p>The verification team has reviewed the step-by-step protocol followed in determining the sample size per age group, selecting appropriate conditions and conducting the overall WBTs. The in charge of WBTs has been interviewed on procedures calibration and training. The WBT calculation which is part of the MR has been analysed along with the reliability check.</p> <p><i>Conclusion:</i> The calculations have been checked, nevertheless the CAR 04 has been raised and resolved.</p>		
<b>4. <math>\mu_{old}</math></b>		<b>The amount of woody biomass consumption that is consumed through the continued use of old stoves</b>		
<p><b>a) Measurement / Determination method (VVS, §§ 346-350)</b>  Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).  Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.  Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /USAGE/ /VERIF/ /VAL/	<p><i>Description:</i>  The amount of woody biomass consumption that is consumed through the continued use of old stoves is calculated following the provisions of Option A of the CPA-DD. A monitoring survey was undertaken using a survey based on the questioner. The monitoring is entirely done with the help of survey questionnaire and does not involve any monitoring equipment. The verification Team confirms that the parameter is calculated by multiplying the baseline Fuel Consumption, <math>Q_{biomass}</math>, by the ratio of meals cooked by the traditional stove in operation before and after purchasing the Envirofit Stove as reported by households with continued usage of baseline stoves.</p> <p>Following the concerns raised in FAR 01 at validation stage (FAR 06), the verification team also assessed the competency of the personnel involved.</p> <p><i>Verifier's action:</i>  The audit team visited the CME office and conducted interviews with the staff members present. Questions included testing procedures, QA/QC measures, calculations and testing conditions. Survey results were assessed.</p> <p><i>Conclusion:</i>  The parameter has been monitored as per the requirements of the established monitoring plan.</p>	<del>FAR 04</del> CAR 04	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<b>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</b> <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i>	/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /USAGE/ /VERIF/ /VAL/	<i>Description:</i> The parameter represents the amount of woody biomass consumption that is consumed through the continued use of old stoves. Thus, the results are based on the survey outcomes. No instruments are utilized. However, the quality checks of the sampling data confirm that the results are within the accuracy limits.  <i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators. Survey results were assessed.  <i>Conclusion:</i> The parameter is determined appropriately.	OK	OK
<b>c) Correctness (VVS, §§ 346-350)</b> <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/IM03/ /PoA-DD/ /CPA-DD/ /AMSII.G/ /DB/ /WC/ /MR/ /XLS/ /USAGE/ /VERIF/ /VAL/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment) <i>Description:</i> The results are accurate. The parameter is determined based on the provision of the established monitoring plan.  <i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators.  <i>Conclusion:</i> The parameter is determined appropriately	OK	OK
<b>5. f<sub>old</sub></b>		<b>The fraction of end users that are still using baseline (replaced) stoves</b>		
<b>a) Measurement / Determination method (VVS, §§ 346-350)</b> <i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Furthermore, verify the frequency of measurements as per the requirements.</i>	/PoA-DD/ /CPA-DD/ /AMSII/ /XLS/ /MR/ /IM03/ /USAGE/	<i>Description:</i> The fraction of end users that are still using baseline (replaced) stoves is determined based on survey. A monitoring survey was undertaken using a survey based on the questioner on annual basis. The monitoring is entirely done with the help of survey questionnaire and does not involve any monitoring equipment. The verification team confirms that the parameter is calculated by Option B from the PoA Sampling Plan, by estimating the fraction of end users not using baseline stoves ( $f_{\text{non,old}}$ ), where:  $f_{\text{old}} = 1 - f_{\text{non,old}}$	FAR-04 CAR-04	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.		<p>Following the provisions of the FAR 01, the verification Team also assessed the competency of the personnel involved.</p> <p><i>Verifier's action:</i> The audit team visited the CME office and conducted interviews with the staff members present. Questions included testing procedures, QA/QC measures, calculations and testing conditions. Survey results were assessed.</p> <p><i>Conclusion:</i> The parameter has been monitored as per the requirements of the established monitoring plan.</p>		
<p><b>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	/PoA-DD/ /CPA-DD/ /AMSII/ /XLS/ /MR/ /IM03/ /USAGE/	<p><i>Description:</i> The parameter represents the fraction of end users that are still using baseline (replaced) stoves and is determined based on survey. Thus, only the results are based on the survey outcomes. No instruments are utilized. However, the quality checks of the sampling data and procedures confirms that the results are within the accuracy limits.</p> <p><i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators. Survey results were assessed.</p> <p><i>Conclusion:</i> The parameter is determined appropriately.</p>	OK	OK
<p><b>c) Correctness (VVS, §§ 346-350)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/PoA-DD/ /CPA-DD/ /AMSII/ /XLS/ /MR/ /IM03/ /USAGE/	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i> The results are accurate. The parameter is determined based on the provision of the established monitoring plan.</p> <p><i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators.</p> <p><i>Conclusion:</i></p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The parameter is determined appropriately		
<b>6. Stove<sub>year</sub></b>		<b>Calculated average stove year in the monitoring period.</b>		
<b>a) Measurement / Determination method (VVS, §§ 346-350)</b> Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/PoA-DD/ /CPA-DD/ /AMSII/ /XLS/ /MR/ /IM03/ /WC/	<b>Description:</b> The calculated average stove year in the monitoring period is determined based on PoA Distribution and Monitoring Database was linked to a distribution date (recorded during distribution).  Following the requirements of the FAR 01 (FAR 06 at validation), the verification team also assessed the competency of the personnel involved.  <b>Verifier's action:</b> The audit team visited the CME office and conducted interviews with the staff members present. Questions included testing procedures, QA/QC measures, calculations and testing conditions. Survey results were assessed.  <b>Conclusion:</b> The parameter has been monitored as per the requirements of the established monitoring plan.	FAR-04 CAR-04	OK
<b>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</b> In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs. Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.	/PoA-DD/ /CPA-DD/ /AMSII/ /XLS/ /MR/ /IM03/	<b>Description:</b> The parameter represents Calculated average stove year in the monitoring period. Thus, only the results are based on the calculation determined from PoA Distribution and Monitoring Database was linked to a distribution date (recorded during distribution). No instruments are utilized. However, the quality checks of the sampling data confirms that the results are within the accuracy limits.  <b>Verifier's action:</b> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators. Survey results were assessed.  <b>Conclusion:</b> The parameter is determined appropriately.	OK	OK
<b>c) Correctness (VVS, §§ 346-350)</b>	/PoA-DD/ /CPA-DD/ /AMSII/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment) <b>Description:</b>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/XLS/ /MR/ /IM03/</p>	<p>The results are accurate. The parameter is determined based on the provision of the established monitoring plan.</p> <p><i>Verifier's action:</i> The verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerators.</p> <p><i>Conclusion:</i> The parameter is determined appropriately</p>		

## Appendix 6. Calibration dates and validity of installed monitoring equipment

**Table A-6: Periodic Verification Checklist – Calibration details**

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<input type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
-	-	-	-	-	-	-	-	<input type="checkbox"/> No <input type="checkbox"/> Yes	From: To:

## Appendix 7. DOE sampling list

Table A-7: samples selected for site visit and interview

Sr No:	HH Member Name	Charcoal/Wood	Stove Model	Usage/WBT	Serial Number	Status
1	Benson Mwangi	Charcoal	Econochar/SmartSaver Charcoal	Usage+WBT	EA1H068330	Visited OK
2	Rahab Wanjiru Wainaina	Charcoal	CH5200	Usage	EK1L037962	Visited OK
3	Margaret Waithira	Charcoal	CH5200	Usage	EK1L038359	Visited OK
4	Jane Njeri Ndungu	Charcoal	Econochar/SmartSaver Charcoal	Usage+WBT	EA1H069672	Visited OK
5	John Muchira	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H050626	Visited OK
6	Juliet Munene	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H072322	Visited OK
7	Alice Michere	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H068785	Visited OK
8	Mary Wakuthii Gachoki	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H072413	Visited OK
9	Esther Mwendia	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H055655	Visited OK
10	Joan Wangui	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H068753	Visited OK
11	Erick Maina	Charcoal	Econochar/SmartSaver Charcoal	Usage+WBT	EA1H055828	Visited OK
12	Naomi Muthoni	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H074487	Visited OK
13	James Muriithi	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H068019	Visited OK
14	Simon Njuche Maina	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H020064	Visited OK
15	Simon Njuguna Mwici	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H020011	Visited OK
16	Mary Njeri	Charcoal	CH5300/SuperSaver Charcoal	Usage+WBT	EB1A040371	Visited OK
17	Ann Wairimu N.	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019617	Visited OK
18	Muigai Njoroge	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019928	Visited OK



Sr No:	HH Member Name	Charcoal/Wood	Stove Model	Usage/WBT	Serial Number	Status
19	Stanley Nganga	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019225	Visited OK
20	Beatrice Wanjiku	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H020755	Visited OK
21	Tabitha Wanjiru	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019546	Visited OK
22	Cecilia Wairimu Wanyoike	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H019997	Visited OK
23	Njoroge Kamau	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019324	Visited OK
24	Paul Gatu Njoroge	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H019816	Visited OK
25	NgAngA Mwangi	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019961	Visited OK
26	Margaret Wachera	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H019875	Visited OK
27	Jameson Wanderi	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H020682	Visited OK
28	Elizabeth Wanja	Woodfuel	Econofire/SmartSaver Wood	Usage+WBT	EF1H020813	Visited OK
29	Jane Wamaitha	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H019837	Visited OK
30	Salome Wambui	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H070383	Visited OK
31	Solomon Mwangi Kamau	Charcoal	Econochar/SmartSaver Charcoal	Usage	EA1H018828	Visited OK
32	Simon Mwangi	Woodfuel	Econofire/SmartSaver Wood	Usage	EF1H020607	Visited OK
33	Judith Mumbua Kaindi	Woodfuel	M5000/SuperSaver Wood	Usage	EM1G040444	Visited OK
34	Adelide Wamuyu	Charcoal	Econochar/SmartSaver Charcoal	Usage+WBT	EA1H070913	Visited OK

\*RSSN: Replace Stove Serial Number as during WBT end users' stoves are replace with new

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31May 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).
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Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		