




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

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

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	KOKO Kenya - Ethanol Cookstoves Program UNFCCC ID: 10476	
Version number(s) of the PoA-DD(s) to which this report applies	5.0	
Version number of the verification and certification report	1.0	
Completion date of the verification and certification report	26/06/2020	
Monitoring period number and duration of this morning period	1 (First monitoring period) 23/10/2019 to 31/12/2019 (both days included)	
Number and version number of the monitoring report to which this report applies	1.0 Version 6.0	
Coordinating/managing entity (CME)	KOKO Networks Limited	
Host Parties	Host Parties of the PoA Kenya	Is this a host Party to a CPA covered in this report? (yes/no) Yes
Applied methodologies and standardized baselines	AMS-I.E. Version 09.0 - "Switch from non-renewable biomass for thermal applications by the user" Standardized baseline: Not applicable	
Mandatory sectoral scopes	01	
Conditional sectoral scopes, if applicable	13 and 15	
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	CPA UNFCCC reference number	Estimated amount (t CO₂e)¹
	10476-P1-0001-CP1	29,929
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report	CPA Reference No.	Amount achieved (tCO₂)
	10476-P1-0001-CP1	2,319
Name and UNFCCC reference number of the DOE	TÜV NORD CERT GmbH E-0022	
Name, position and signature of the approver of the verification and certification report	 Stefan Winter Final Approver	

¹ The calculation is done on pro-rata basis, as per ER calculation spreadsheet submitted by CME. Please refer footnote 9 under section E.3.6.5 of this report for further detail.

SECTION A. Executive summary

KOKO Networks Limited has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the CDM Programme of Activities (CDM-PoA (10476)):

“KOKO Kenya - Ethanol Cookstoves Program”

with regard to the relevant requirements for CDM PoAs.

This verification covers the period from 23/10/2019 to 31/12/2019 (both days included).

KOKO Networks Limited has implemented the programme of activities which reduces GHG emissions by distributing KOKO Cooker Kit² which consists of a two-burner bioethanol stove and a durable ‘smart’ canister equipped with an NFC chip that enables tracking of users (households and SMEs/Kibandas)-level fuel purchases. The dissemination of ethanol cookstove enables affordable and reliable access to bioethanol clean cooking fuel. KOKO Networks Limited launched network of cloud connected “KOKO points” which are fuel ATMs to lower distribution costs. The KOKO points enable customers to use their smart canisters to refill with convenience at local corner shops. Customers can buy their KOKO Cookers by completing one-time registration process and ordering it on the KOKO point tablet screen, via the “myKOKO” mobile app. KOKO’s smart distribution platform allows purchase of bio-ethanol fuel through a digital billing system in bundles to low-income consumers who buy fuel in small units.

Ecoeye Co., Ltd. has fully financed the project cost related to subsidy provided to customers for all KOKO Cooker kits distributed to the households. The same was verified based on the ERPDA (Emission Reduction Purchase Development Agreement) between KOKO Networks Limited and Ecoeye Co., Ltd.^{ERPDA/}.

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

Table A-1: Project Location of CPA-0001: KOKO Kenya - Ethanol Cookstoves Program

No.	Project Location
Host Country	Republic of Kenya
Region:	Entire country
Southern-most point of Kenya	4°38'47.4"S 39°12'31.6"E
Western-most point of Kenya	0°06'58.9"N 33°57'35.3"E
Eastern-most point of Kenya	3°55'51.6"N 41°51'59.9"E
Northern-most point of Kenya	4°28'42.5"N 35°52'31.8"E

Basic technical details of the PoA are summarized in table A-2.

Table - A-2: Technical data of the CPA-0001: KOKO Kenya - Ethanol Cookstoves Program^{WC/}

Stove Type	Parameter	Unit	Value
KOKO Cooker (2-burner Bio-ethanol stove)	Overall Efficiency	%	60
	Firepower (max flame setting)	Watts	2100
	Fuel Capacity	Litres	2.4
	Manufacturer	-	KOKO Networks Limited
	Expected Service Life	years	10 (with routine annual maintenance)

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

- operation of the CPA-0001: KOKO Kenya - Ethanol Cookstoves Program which is claiming CERs is implemented and installed as planned and described in the validated component project

² Also referred as KOKO Cooker or Bio-ethanol stove in this assessment report

activities design document.

- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-I.E. Version 09.0
- the equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The CPA has generated GHG emission reductions.

As the result of the 1st periodic verification of PoA: KOKO Kenya - Ethanol Cookstoves Program", 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 as stated on title page.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/ document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader+ Technical Expert	EI	Mishra	Prakash Kumar	TÜV NORD CERT	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.	Technical reviewer/Approver	IR	Winter	Stefan	TÜV NORD CERT

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 ³ ;
<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).

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"> CPA Distribution Record sales database household/Kibanda usage Survey and reports for parameters under monitoring, MR and excel ER spreadsheet. 	Medium	Human error during transfer of data to Sales record, Usage Survey 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 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
D _i , Date of commissioning of project device i	CDC	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	Not material

³ A year refers to a period of 12 consecutive months.

Parameter	Approach ⁺	Errors* detected	Findings reference	Corrected	Remaining verification risk
N_{HH}	SPL	<input checked="" type="checkbox"/>	CAR 03, CL 06	<input checked="" type="checkbox"/>	Not material
BC_{PJ,PP,y}	SPL	<input checked="" type="checkbox"/>	CAR 02, CAR 04, CL 06	<input checked="" type="checkbox"/>	Not material
Q_{HH,Eth}	SPL	<input checked="" type="checkbox"/>	CAR 02, CAR 03, CAR 04, CL 06	<input checked="" type="checkbox"/>	Not material
Q_{SME,Eth}	SPL	<input checked="" type="checkbox"/>	CAR 02, CAR 03, CAR 04, CL 06	<input checked="" type="checkbox"/>	Not material
N_{i,i}	SPL	<input checked="" type="checkbox"/>	CAR 02, CAR 04, CL 06	<input checked="" type="checkbox"/>	Not material
N_{KP,y}	CDC	<input checked="" type="checkbox"/>	CAR 02, CAR 03, CAR 04	<input checked="" type="checkbox"/>	Not material
NCV_{i,biomass}	CDC	<input checked="" type="checkbox"/>	CL 02	<input checked="" type="checkbox"/>	Not material
HG_{SME}	CDC	<input checked="" type="checkbox"/>	CAR 02, CAR 03	<input checked="" type="checkbox"/>	Not material
EC_{PJ,i,y}	CDC	<input checked="" type="checkbox"/>	CL 03	<input checked="" type="checkbox"/>	Not material
D_{f,m}	CDC	<input checked="" type="checkbox"/>	CAR 03	<input checked="" type="checkbox"/>	Not material
FR_{f,m}	CDC	<input checked="" type="checkbox"/>	CAR 03	<input checked="" type="checkbox"/>	Not material
<i>Aggregate</i>				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 for parameters under monitoring to MR and excel ER spreadsheet: Total sales record presented in ER calculation spreadsheet (for CPA-001 claiming ERs under this verification) were assessed and verified at CME office/premise during remote verification audit. CME conducted the monitoring survey to monitor the parameters of interest on sampling basis in accordance with registered monitoring plan. Verification team has assessed the value of different parameters under monitoring (**N_{HH}**, **BC_{PJ,PP,y}**, **Q_{HH,Eth}**, **Q_{SME,Eth}**, **N_{i,i}**⁴, **N_{p,i}**) against survey results. The monitoring surveys were conducted in January 2020. The Survey was assessed and compared during onsite visit and interview response by the project technologies users, CMEs and survey team on ground during the course of verification. The verification team issued findings (CAR/CLs) which can be referred in table above and Appendix 4 and Appendix 5 of this report. The verification team reviewed and compared available data at CME office (total sales record, bills of sale, ethanol cookers registration cards, monitoring survey results, etc.) and data presented for total sale for which CERs are claimed under the current monitoring period. Certain data was assessed to be inconsistent (Inconsistent values of project stoves in databases and ER/MRs; please refer the corresponding findings under Appendix 4).

⁴ Please refer closure of CAR 05

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 last revision of the PoA-DD including the monitoring plan^{/PoA-DD/},
- the last revisions of the CPA-DD^{/CPA-DD/}
- the last revision of the CPA validation report^{/VAL/},
- the monitoring report, including the claimed emission reductions for the PoA^{/MR/},
- Monitoring Survey Report^{/USAGE/} and related work sheets^{/RC//XLS/}
- the emission reduction calculation spreadsheet^{/XLS/}.
- CPA Distribution Records[/] and customer Sales Receipts^{/DB/}
- Sample size calculation spreadsheet for monitoring Survey^{/USAGE//SAMPLE//SAMPLING/}
- Sales Database^{/DB/}

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: 02/03/2019 to 05/03/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> Assessment of the sales database Assessment of sample end-user warranty cards (sales receipts) Comparison of end-user data/Warranty cards information in the database (dates, serial numbers, names, locations etc.) Assessment of data management system, QA/QC procedures Interviews with KOKO Networks Limited staff for data checking Interview with KOKO Networks Limited staff responsible for data entry Interviews with CME representative Discussion of emission reductions and supporting documentation Telephonic interview with as applicable Telephonic interview with distant users of Household and Kibandas (Food Outlet) under SME 	Nairobi, Kenya-CME office and end users locations	02/03/2019 to 05/03/2019	Prakash Kumar Mishra (PKM)
2.	Visit of randomly selected households Meeting with (Field Survey team) Interviews with relevant personnel, retailers, involved in GHG monitoring of this PoA	Kenya		
3.	Visit of randomly selected households and Kibandas from CME's survey sample	Kenya		
4.	Discussion on MR and supporting documents and final closing meeting	Nairobi		

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Agnew	Edward	Senior Business Development Manager- KOKO Networks Limited	02/03/2019 to 05/03/2019	CPA implementation and its development, monitoring report, ER Calculations,	Prakash Kumar Mishra

2.	Augo Ouma	John	Research Associate- KOKO Networks Limited		raw data, generation of sales database, Data entry, reporting, QA/QC, Ethanol stove Designing, production, Stove sales, Information flow, data Management, Financial Management, staff training, sales database, Monitoring Survey procedure, generation of survey result and reporting, training etc.	
3.	Mahavi	Lorine	Research Associate- KOKO Networks Limited			
4.	Legros	Carla	Head of Business Operations- KOKO Networks Limited			
5.	Olando	Dorcas	Research Assistant- KOKO Networks Limited			
6.	Mahawar	Abhishek	Consultant- KOKO Networks Limited			
					Date of ethanol cooker purchase/registration , Warranty/receipt, carbon waiver, monthly consumption of baseline biomass, monthly consumption for bio-ethanol, confirmation of procurement of bio-ethanol, serial number of project ethanol cookers, source of purchase, Usage rate of project stoves/cooker, Stove performance, pre-project stoves, continued use of baseline stoves, if part of usage survey, how usage survey was conducted, training of enumerators etc.	
7.	Rawago	Moses	KOKO User (HH, Stove serial number - 200092478)		Date of installation, family size continued use of pre-project technology, bio-ethanol consumption, availability of bio-ethanol, number of meals cooked, number of stoves (KOKO Cooker and baseline stove) in the household/ Kibanda as applicable, Usage rate, Stove performance, percentage use of baseline stove, etc.	
8.	Njoroge	Jane	KOKO User (Kibanda, Stove serial number - 200019320)			
9.	Wambua	Sebastian	KOKO User (HH, Stove serial number - 200126767)			
10.	Mkala	Elizabeth	KOKO User (Kibanda, Stove serial number - 200102497)			
11.	Mohammed	Shamim	KOKO User (Kibanda, Stove			

			serial number - 200089572)			
12.	Nanono	Ireda	KOKO User (HH, Stove serial number - 200082187)			
13.	Mogeni	Narson	KOKO User (HH, Stove serial number - 200077502)			
14.	Nina	Shaleth	KOKO User (Kibanda, Stove serial number - 200026552)			
15.	Kariuki	Eliud	KOKO User (Kibanda, Stove serial number - 200084204)			
16.	Koyiaki	Johnson	KOKO User (HH, Stove serial number - 200070338)			
17.	Ali	Ange	KOKO User (HH, Stove serial number - 200067949)			
18.	Oduor	Joakim	KOKO User (HH, Stove serial number - 200066308)			
19.	-	Nicholas	KOKO User (Kibanda, Stove serial number - 200090158)			
20.	Mosire	Fridah	KOKO User (Kibanda, Stove serial number - 200020937)			
21.	Moraa	Teresa	KOKO User (Kibanda, Stove serial number - 200010064)			
22.	Ndonge	Eunice	KOKO User (HH, Stove serial number - 200015365)			
23.	Mueke	Priscillah	KOKO User (HH, Stove serial number - 200082133)			
24.	Nzioka	David	KOKO User (HH, Stove serial number - 200084914)			
25.	Njeri	Jane	KOKO User (HH, Stove serial number - 200015936)			
26.	Nyawira	Elizabeth	KOKO User (HH, Stove serial number - 200083974)			

27.	Orinda	Liberate	KOKO User (Kibanda, Stove serial number - 200010291)			
28.	Muthoni	Leah	KOKO User (Kibanda, Stove serial number - 200013129)			
29.	-	Gacheri	KOKO User (Kibanda, Stove serial number - 20010489)		Date of installation, customer size (average number of customers fed on the Koko cooker, continued use of pre- project technology, average bio-ethanol consumption, availability of bio- ethanol, number of meals cooked, number of stoves (KOKO Cooker and baseline stove) in the household/ Kibanda as applicable, Usage rate, Stove performance, percentage use of baseline stove, etc.	Prakash Kumar Mishra
30.	Segwe	George	KOKO User (Kibanda, Stove serial number - 200129660)			

D.4. Sampling approach

D.4.1 Sampling during monitoring (Please refer closure of CAR 05):

<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 ¹⁾	Sampling Type ²⁾	Population		Sample Size		
Number of project devices in households of type i and batch j operating during year y, N _{HH}	SiRS	PS	Category	Population	Sample Size (n) required	Samples covered during monitoring	
Cookstoves in Households			9421	29	303		
N _{i,j} Number of project devices of type i and batch j operating in institutions during year y	SiRS	PS	Cookstoves in SMEs (Kibanda)	209	26	78	
BC _{PJ,PP,y} Average annual consumption of woody biomass in the pre-project devices			Category	Population	Sample Size (n) required	Sample covered	
	SiRS	PS	Cookstoves in Households	9421	302	303	

during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent in the households						
Q _{SME, Eth} Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs (Kibandas) (Average Bioethanol Consumption by the SME customer)			Cookstoves in SMEs (Kibanda)	209	67	78
Q _{HH, Eth} Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs (Kibandas) (Average monthly Bioethanol consumption in households)	SiRS	PS	Category	Population	Sample Size (n) required	Sample covered
			Cookstoves in Households	9421	62	303
Average number of persons equivalent served by the institution with full-day meals, np,l ⁵	SiRS	PS	KOKO cooker in SMEs/Kibandas	209	67	78

¹⁾Sampling Approaches:

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

²⁾Sampling Types:

PS:	Parameter Sampling
-----	--------------------

⁵ Please refer closure of CAR 05 & FAR 01

A simple random sampling was carried out across specific-case CPA 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. For the applied Monitoring period CPA 01 is the only CPA under consideration.

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 for below mentioned parameters:

- Number of project devices in households of type i and batch j operating during year y (Proportion of bioethanol cookstoves operating in households during the monitoring period)
- Average annual consumption of woody biomass in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent in the households (Average annual woody biomass consumption in households in the project scenario)
- Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households (Average monthly Bioethanol consumption in households during the monitoring period)
- Number of project devices of type i and batch j operating in institutions during year y (Proportion of bioethanol cookstoves operating in SMEs during the monitoring period)
- Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to SMEs (Kibandas) (Average monthly Bioethanol Consumption by the SME customer during the monitoring period)
- Average number of persons equivalent served by the institution with full-day meals, $n_{p,i}$

iii. Target Population

The target population for the six parameters stated above are all KOKO Cookers recorded in the project database for household and the SME (Kibandas).

iv. Sampling Frame

Simple Random sampling is applied by the CME. The sampling frame is also the target population of the bioethanol cookers/stoves that were sold and recorded for the household and SME (Kibanda) in CPA database. Random sampling was applied for the target population of household and the SME (Kibandas).

v. Sampling Method

Separate Simple Random Sampling was applied across the population of Household and SME using the RANDBETWEEN function in excel for each cookstove (KOKO Cooker) distributed in both household database and SME (Kibandas) database. The samples having highest random numbers within each database (Household and SME) were selected for conducting the surveys. The bio-ethanol stove distribution data was arranged by date of distribution, and the samples corresponding to the random numbers obtained via RANDBETWEEN function in excel were picked for sampling and monitoring surveys.

vi. Sampling Size

For the estimation of the proportion or mean value of the parameters investigated, the minimum sample size for each sample frame has to achieve the 95/10 confidence/precision for biennial sampling, and also 95/10 for cross-CPA, annual sampling. For applied monitoring period (annual), 95/10 was applied in order to calculate all of the required sample sizes. In order to calculate the sample sizes, values for the proportions, mean values, and standard deviations are required. For this monitoring period, the CME considered that the most updated knowledge about the expected values of the parameters are based on the project developer's and 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.” The requirements of para 12 (a) of the standard are met in the application of different equations for type of parameter for calculation of sampling size which is described below.

The results below shown beside the number of samples that were covered during monitoring:

Parameter: N_{HH} -

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
9421	95/10	29	303

Parameter: $N_{i,l}$

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
209	95/10	26	78

Parameter: $BC_{PJ,PP,y}$

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
9421	95/10	302	303

Parameter: $Q_{SME,Eth}$:

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
209	95/10	67	78

Parameter: $Q_{HH,Eth}$

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
9421	95/10	62	303

Parameter: $N_{p,l}$

Total population(N)	Reliability	Sample Size (n) required	Samples covered during monitoring
209	95/10	67	78

The parameters “Average Woody biomass consumption in households during the monitoring period in the project scenario”, “Average Bioethanol Consumption by the SME customer”, “Average Bioethanol consumption in households” and “Average number of persons equivalent served by the institution with full-day meals” are mean parameters, therefore the sample size has been calculated according to the following equations:

$$n = \frac{z^2 \cdot N \cdot V}{(N - 1) \cdot c^2 + z^2 \cdot V}$$

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

$$V = p \cdot (1 - p) / p^2 \text{ for proportion parameters}$$

Where:

n = sample size

N = population size

z = Confidence value constant (1.96 for 95%)

c = Desired precision (10%)

SD = expected standard deviation for mean parameter

\overline{Mean} = expected mean for mean parameter

\overline{p} = expected proportion for proportion based parameter

Simplified equation (1) and equation (4) of the Guideline: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0 are as follows:

Equation (1) for Proportion Parameters

$$n > \frac{(1.96)^2 \times N \times \overline{p} \times (1-\overline{p})}{(N-1) \times 0.1^2 \times \overline{p}^2 + 1.96^2 \times \overline{p} \times (1-\overline{p})}$$

Equation (4) for Mean Parameters

$$n > \frac{(1.96)^2 \times N \times V}{(N-1) \times 0.1^2 + 1.96^2 \times V}$$

$$V = (SD/Mean)^2$$

The parameter “Number of project devices in households of type i and batch j operating during year y” and “Number of project devices of type i and batch j operating in institutions during year y” are proportional values; therefore, the sample size has been calculated according to the following equations:

$$n > \frac{(1.96)^2 \times N \times \overline{p} \times (1-\overline{p})}{(N-1) \times 0.1^2 \times \overline{p}^2 + 1.96^2 \times \overline{p} \times (1-\overline{p})}$$

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/CPA-DD. The target population for the parameters stated above are for bio-ethanol stove users covered under the monitoring period as recorded in the project installation database^{/DB/} for household and SME (Kibanda).

As assessed, input values for expected mean and expected proportion for both mean and proportion parameters taken by CME for sample size calculation is based on their personal experience of this project being monitored regularly by their dedicated KOKO agents who is responsible for acquiring KOKO point (from where KOKO stove users refill the Bioethanol). KOKO agents are mainly with local Mom&Pop stores in the localities in the Greater Nairobi Region. These Mom&Pop stores/agents are chosen based on various factors like number of years the shop has been operating, local outreach and the rapport of the shop with local residents. These agents are provided with the essential training by KOKO Networks and a KOKOpont (Fuel ATM) is installed in their premises, verification could cross check this information interviewing the CME and KOKO agents and also physically inspected their shops (Mom&Pop stores) which was further cross checked by interviewing KOKO cooker/stove users who has to visit to KOKOponts for refilling the biofuel (bioethanol). Also these KOKO agents continuously pass the information to KOKO management office on every front e.g. usage, fuel consumption, any problem with the stove etc. as they are in constant touch with every single user. Moreover, reference source for input values on expected mean and proportion are also provided by CME which could be further verified onsite by verification team by observing the actual procedure and interview with KOKO agents, CME management and end users (households and institutions/Kibandas owners) and found these values as deemed appropriate.

Thus, 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 read with and inline with § para 12(b) and 12(c) of the "Standard:Sampling and surveys for CDM project activities and programmes of activities", Version 08.0.

Every individual project stove in the CPA covered under the MR (observed to be uniquely identifiable by its ID number) and was observed to be allocated a sample number.

CME/PP has submitted sample size calculation spreadsheet and random number generator (screen shots) where it was demonstrated that samples are drawn randomly using simple random sampling technique for household and SMEs (Kibandas). DOE, further crosschecked the sampling approach by CME as per MR section E.3 against related provision stipulated under PoA- and CPA-DD. Besides, the related population size has been checked with corresponding supporting documents^{/DB/} including customer registration forms and interview with the CME during onsite verification audit as well as throughout the verification process. Input parameter for the sampling calculation have been checked whether consistent with the stated approach and against PoA-DD, CPA-DD and sampling requirements and guidance. Further, DOE has also assessed the reliability check performed by CME for the sampling and confirmed that the required confidence/precision are met. Findings on sampling and Survey were raised and closed successfully. Please refer Appendix-4 of this report.

D.4.2 Sampling approaches during verification⁶

<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 ¹⁾	Sampling Type ²⁾	Population	Sample Size
	N _{HH}	SiRS:	AS:	303	12
	N _{i,j}	SiRS:	AS:	78	12
	BC _{PJ,PP,y}	SiRS:	AS:	303	12
	Q _{SME,Eth}	SiRS:	AS:	78	12
	Q _{HH,Eth}	SiRS:	AS:	303	12
	N _{p,l}	SiRS:	AS	78	12

¹⁾Sampling Approaches:

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

²⁾Sampling Types:

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

A Sampling approach has been applied to verify the on-ground information and reported monitored values of the parameters by using sampling methods by CME.

The sampling approach conducted is in accordance with "Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities" version 04 and the "Standard for Sampling and Surveys for CDM Project Activities and Programme Activities" version 08. As the population is relatively homogeneous (same stove type, population, and cooking habits) with respect to the object of the sampling effort, simple random sampling method is adopted for verification of the parameters.

The verification team followed the "Standard for Sampling and Surveys for CDM Project Activities and Programme Activities" version 08, para 29 to 32, esp. for taking sample out of the CME's sample. Verification

⁶ Please refer closure of CAR 05

team has adopted the acceptance sampling approach in accordance with § 29, 30, 31 and 32 of the Sampling Standard by considering AQL 0.5% and UQL 20% (in line § 30 of Standard). Producer risk of 10% and consumer risk of 10% (as per § 31 a) and § 39 have been adopted. Considering the above § under applied sampling standard, DOE should have verified 11 samples under the acceptance sampling approach with acceptance (c) number 0. However, verification team has verified total of 24 (covering 12 each from HHs and Kibandas samples). Thus, verification team has verified 1 additional from each user type and, thus, covered optimum number as per the requirements under SSS ver 08 (12 from HHs and 12 from SMEs/Kibandas; above 11 required samples) from CME samples during onsite visit. These samples were randomly selected (from PP samples) by verification team using random excel function from the CME's samples. The list of on ground verified/interviewed end users i.e. HHs and SMEs/Kibandas, are presented under section D.3 of this report above.

Table 7: Applied sampling standard

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

No CME sampling monitoring records/data results were found discrepant during the DOE verification site-visit. All the 24 samples visited by the verification team were found comparable with CME monitoring records and were also found to be operational during onsite audit visit an in line with PP survey results regarding average bioethanol consumption and fuelwood used together with KOKO Ethanol stoves. Further, the verification team reviewed all the primary monitoring records on-site to assess the consistency of information with ER calculation spreadsheet and found the monitoring data to be correctly transcribed into the ER sheet and MR. However, during course of verification, few issues related to survey and sampling were raised and resolved.

Based on above, verification team concludes that sampling results and values presented by CME in the MR and ER calculation spread sheet with objective evidences as submitted in response to verification issues are consistent with the onsite observation and interview with the end users (HHs and SMEs) on ground.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the monitoring report form	0	0	0
Remaining forward action requests from validation and/or previous verifications	0	0	0
CPAs considered for verification and covered in this report	0	0	0
Programme of activities	-	-	-
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 ⁷	0	0	0
• Changes to the programme design	0	0	0

⁷Other 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
• Addition of CPA inclusion template	0	0	0
• Change of coordinating/managing entity			
• Changes specific to afforestation and reforestation activities	0	0	0
Component project activities	-	-	-
Compliance of the CPA implementation with the included CPA design document	1	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	2	1	0
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	1	0	0
• Data and parameters monitored	2	0	0
• Implementation of sampling plan	0	1	1
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	0	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	1	0
• 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
Total	6	5	1

SECTION E. Verification findings

E.1. General

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

Means of verification	<p>A draft 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 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 guidance.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /MRT/ • /unfccc/ 	
Findings	<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:
		-
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.
		The latest instructions for filling out the MR version 03.0 have been followed and all sections have been duly completed as per the template guidelines.

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 PoA Validation report^{VAL}, CPA inclusion report 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 checked="" type="checkbox"/>	<p>There were no open issues which have been addressed in the latest version of the validation report.</p> <p>The PoA-DD states that ex-ante parameters listed below will be determined at the CPA-DD.</p> <ol style="list-style-type: none"> 1. $BC_{BL,PP,Y}$ 2. f_{NRB} 3. $N_{p,HH}$ <p>The DOE involved in the first verification shall corroborate the parameters for CPAs included directly by the CME (i.e not being validated by the DOE)</p> <p>However, the CPA-0001 was included by the DOE (Reference- page 06 validation report version 02, dated 19/10/2019)^{VAL} and the FAR was addressed or deemed as no more applicable for subsequent assessment i.e. First Periodic Verification. The ex-ante parameters were in principle were assessed at the time of inclusion of CPA-0001. Thus, the FAR is considered as closed at validation stage as the ex-ante parameter are already validated by CPA inclusion/validation DOE.</p>
<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)
	The following issues related to the validation have not yet been appropriately addressed (for details please refer to appendix 4):

<input type="checkbox"/>	
--------------------------	--

(ii) Open issues from previous verifications:

<input checked="" 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
CPA-0001: KOKO Kenya - Ethanol Cookstoves Program 10476-P1-0001-CP1	Yes	23/10/2019	5.0	N/A

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 is implemented and operated in line with the latest approved version of the PoA-DD and whether all physical features of the project are in place.</p> <p>The following has been checked:</p> <p>implemented technology i.e. KOKO cooker, project monitoring and implemented monitoring plan in line with approved monitoring plan in the PoA-DD and corresponding CPA-DD and applied methodology.</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 PoA-DD, MR and calculation spreadsheet are applied.</p> <p>Interviews with, CME, CPA implementer and operational personnel have been carried out, QMS records, maintenance records, instruments etc. 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 also 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"> • /PoA-DD/ • /CPA-DD/ • /MR/ • /VVS/ • /XLS/ • /QMS/ • /unfccc/
------------------------------	---

	• AMS-I.E/
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:
	-
	<i>In case of phased implementation:</i>
	<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.

E.2.2. Implementation and operation of the management system

Means of verification	The verification team carried out onsite visits for the CPA included during this monitoring period and interviewed key personnel of the CME responsible for operation and management of the programme. Interviewees included the CME, KOKO stove implementers, project developer, and others. It was established that the programme management system has been implemented and operated as described.
Findings	N/A
Conclusion	The management system is implemented 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.

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	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:
	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.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

There is no change in CME, the registered PoA-DD mentions KOKO Networks Limited as 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
-------------------------------------	---

E.3. Component project activities**E.3.1. Compliance of the CPA implementation with the included CPA design document**

Means of verification	<p>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 CPA-01 under this verification 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.</p> <p>The following are checked: implemented technology i.e. KOKO cooker, project monitoring and implemented monitoring plan in line with approved monitoring plan in the PoA-DD and corresponding CPA-DD.</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.</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 PRCs.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /CPA-DD/ • /MR/ • /VVS/ • /XLS/ • /RECEIPT/ • /unfccc/
Findings	CL 01 and CAR 01
Conclusion	<p>Purchase of Bio-Ethanol:</p> <p>The Verification Team confirmed that KOKO Networks has partnered with Vivo Energy, to procure bioethanol (renewable fuel) from bioethanol producers in Kenya. The Framework agreements^{/FA/} between KOKO Networks and Vivo Energy were assessed and found to be in accordance with requirements in the registered PoA-DD. The Verification Team also reviewed the supply chain of Vivo Energy. The supply chain consisted majorly below listed suppliers^{/RECEIPTS/} e.g.:</p> <ul style="list-style-type: none"> • Mumias Sugar Company, Mumias, Kenya (www.mumias-sugar.com) • Agro-Chemical & Food Company, Muhoroni, Kenya (www.acfc.co.ke) • Kibos Sugar & Allied Industries, Kisumu, Kenya (www.kibossugar.co.ke) <p>The Verification Team confirmed that the bio-ethanol renewable in nature. Sample receipts of dispatch of the bio-ethanol from sugar factories was collected as objective evidence^{/RECEIPT/}. In addition, undertaking was also sought from KOKO Networks to ascertain re-confirmation^{/UND/}.</p> <p>Technical parameters of fuel quality as per international standards</p> <p>The Verification Team reviewed the “JOINT QUALITY CONTROL PROTOCOL FOR BIO-ETHANOL COOKING FUEL” which confirm that, technical parameters and fuel quality meet requisite standards.</p> <p>The Verification Team also verified if the provisions to monitor the SECTION B. Management system of PoA-DD are in compliance and followed.</p> <p>The verification team confirms that the CPA-0001 under this MP is implemented and operated in line with latest approved versions of CPA-DD and all physical feature of the project are in place. 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 checked="" 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 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	
	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 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.	
2	Issue:	-
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 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

N/A

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 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 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 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following CoPD for which appendix 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
-------------------------------------	---

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

Means of verification	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"> • /MR/ • /AMS-I.E/ • /unfccc/ 			
Findings	<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:		
		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)	
	<input checked="" type="checkbox"/>	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:			

	1	Title (of the SB)	Name of SB
		Version	
		MP compliance	
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 02, CAR 04	
Conclusion	<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.3.4. Compliance of monitoring activities with the registered monitoring plan

E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	<p>By means of comparison of the MR and the ER calculation spreadsheet with the latest version of the registered PoA-DD and CPA-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 and in accordance with the registered monitoring plan of CPA-DD.</p> <ol style="list-style-type: none"> 1. $f_{NRB,y}$ or f_{NRB} 2. $NCV_{biomass}$ 3. $EF_{projected}$ 4. LAF_y 5. $BC_{BL,PP,Y}$ 6. $N_{P,HH}$ 7. $EF_{bioethanol_production}$ 8. $\dot{\eta}_{Eth}$ 9. $EF_{EF,j,y}$ 10. $TDL_{j,y}$ 11. $\eta_{old,i}$ 12. $EF_{CO2,f}$ <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /PoA-DD/ • /CPA-DD/ • /PS/ • /VVS/ • /unfccc/ • /AMS-I.E/ 	
Findings	<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 checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CL 05 For details please refer to appendix 4
Conclusion	<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.
		<p>The ex-ante value of parameter $f_{NRB,y}$ or f_{NRB} was fixed based on the interview with the DNA at the time of CPA inclusion. However, as per the cross check at UN webpage for default f_{NRB} value https://cdm.unfccc.int/DNA/fNRB/index.html, the renewal request in form of "Acceptance form for the fraction of non-renewable biomass" submitted by the DNA of Republic of Kenya could not be traced. Thus, the Verification Team has assessed and identified that the applied value of $f_{NRB,y}$ or f_{NRB} was not updated at UNFCCC website subsequent to the CPA Validation as envisaged at time of CPA Inclusion into PoA. Thus, a clarification was on the appropriateness of the applied value via CL 05. In response, the CME has recalculated the $f_{NRB,y}$ or f_{NRB} and submitted the back up for the applied value of f_{NRB}. The input values and calculations were verified in line with "Tool 30: Calculation of the fraction of non-renewable biomass". Based on that, the Verification Team confirms that</p> <ul style="list-style-type: none"> The input values are traceable, appropriate and verified with the listed references under worksheet "Kenya f_{NRB} - Tool 30.xlsx" and thus in line with Tool 30 The applied value of $f_{NRB,y}$ or f_{NRB} is conservative (0.915) compared to the applied ex-ante value under CPA-DD (0.92) <p>In addition, the validation team also reviewed FAR 09 raised at POA level.</p> <p><i>"The DOE involved in the first verification shall corroborate the parameters for CPAs included directly by the CMA (i.e not being validated by the DOE)".</i></p> <p>However, the CPA-0001 was included by the DOE (Reference- page 06 validation report version 02, dated 19/10/2019) and the FAR was addressed at CPA inclusion thus, deemed as no more applicable for subsequent assessment i.e. First Periodic Verification. The ex-ante parameters were assessed at the time of inclusion of CPA-0001. Thus, the FAR is considered as closed at validation stage as the ex-ante parameter are already validated. It is confirmed that fixed ex-ante parameters corresponding with the provisions of CPA-DD/f_{CPA-DD}, f_{NAL} are appropriately applied for the ER calculation.</p>

E.3.4.2. Data and parameters monitored

Means of verification	During the verification, all relevant monitoring parameters (as listed in the generic part of PoA-DD and CPA-DD) have been verified with regard to the <ul style="list-style-type: none"> (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).
Findings	CL 02, CL 03, CAR 02, CAR 03, & CAR 04
Conclusion	<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 monitoring survey and the same were appropriately resolved. All the data and parameters results are now appropriately applied and thus, it can be concluded that the data and parameters monitored are in accordance with applicable provisions under applied methodology, PoA and CPA-DD.

E.3.4.3. Implementation of sampling plan

Means of verification	The verification team checked whether the PP applied a sampling approach to determine the monitored values appropriately in line with POA and CPA-DD. Further it has been checked whether the PP correctly applied the implemented sampling plan including <ul style="list-style-type: none"> (i) description of the implemented sampling design
------------------------------	--

	<ul style="list-style-type: none"> (ii) collected data (iii) analysis of collected data (iv) demonstration on whether the required confidence/precision has been met. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /RC/ • /XLS/ • /PoA-DD/ • /CPA-DD/ • /SAMPLING/ • /SAMPLE/
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. Assessment of the Sampling Approach by CME: <p>Based on interview and explanation from CME as per the KOKO internal process, the Business Operations Department sought approval to undertake surveys. Initial approval to undertake survey of "Shortlisted Customers for Carbon Finance Survey" was received on date 03/01/2020. The list included randomly selected customers/KOKO cookers users (HHs and Kibandas) along with their contact details. The Business Operations Department initially identified 318 households and 87 Kibandas. After receipt of approval the survey was undertaken. The Verification Team reviewed the approval letter dated 03/01/2020 to confirm the structured methodology for sampling.</p> <p>The CME has randomly selected the households and the Kibandas. The Verification Team has assessed the random number generator using RANDBETWEEN Excel function as screen shot submitted by CME dated 03/01/2020 as objective evidence^{/SAMPLING/}. Based on its host country competence, the Verification Team has raised issue regarding the holiday period of 15 days applied (on account of Christmas) and migration of the population to countryside rendering the reduced or practically zero consumption of the bio-ethanol in many households and SMEs.. In response to the raised issue, the CME has demonstrated and conservatively discounted associated effective monitoring days for period from 16th December 2019 to 31st December 2019. The CME has also submitted detailed report^{/SAMPLING/Bio-Ethano Data/} and submitted the same addressing the letter to the Verification Team Leader. Such provision of discounting was also assessed by the Verification Team based on its host country competence as well as publicly available references</p> <ul style="list-style-type: none"> • https://www.agincourt.co.za/wp-content/uploads/2012/10/2011-Agincourt-Research-Briefing-Document.pdf (page 16) • https://nairobinews.nation.co.ke/hustle/nairobi-streets-remain-deserted-over-christmas (date was 26 December) • https://www.kenyabuzz.com/lifestyle/family-fun-in-nairobi-this-christmas-2/ (date 17 Dec 2019) <p>Also refer CAR 04 for details.</p> <p>Assessment of Sampling Methodology – Difference between the sampled bioethanol consumption and actual dispatched data from KOKO points of bioethanol:</p> <p>The Verification Team noted that as a part of survey approximate spending on the Bioethanol was surveyed. The average bioethanol consumption was derived from the sampling survey. The average bioethanol consumption was compared with the actual bioethanol dispatched data during the applied monitoring period. Difference of around 10 % is observed between the actual bioethanol consumption and the dispatch data. The reason on the same are combined impact of parameters as stated below:</p> <ul style="list-style-type: none"> • The ethanol consumption is not directly utilized for calculation of emission reductions of house hold stoves. For HH KOKO cookers the ex-ante fixed baseline parameter "$BC_{BL,PP,y}$" - Average annual consumption of woody biomass per person before the start of the project activity is utilized for calculation of the emission reductions

- A close to accurate but not accurate estimations based on sampling. Inherent errors in sampling but in the limit of 10% precision.
- Opening and closing stock of Bio ethanol at KOKO point cannot be accurately estimated.

Authentication of Sampling Data:

The Sampling was undertaken following the Google Forms. The CME has availed online data entries of the survey information. The verification team checked the format of the online survey form^{/SAMPLING/} against the requirements of sampling and deems the same as appropriate. The Verification Team Assessed the submitted survey records and confirm that time stamp, name of surveyor was captured by the Google Forms. In addition, the CME has also submitted the authenticated copy of the Survey Forms^{/SAMPLING/} to the Verification Team.

The Verification Team also identified that the provisions of undertaking sampling are not detailed under the PoA-DD and CPA-DD. Thus, FAR 01 has been raised during this verification.

For detailed assessment of parameter wise sampling, please refer below:

Parameter : N_{HH}

Name:	Number of project devices in households of type i and batch j operating during year y
-------	---

Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>The parameter was assessed through onsite assessment of randomly selected (simple random sampling) sample of household bioethanol KOKO stoves/cookers annually. The households selected were physically visited by Survey staff appointed by the CPA Implementer. During visit, the existence and functionality of the project 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.</p> <p>A monitoring survey was conducted in January 2020 to determine the Number of bio ethanol cook stoves in operation or replaced on a sampling basis.</p> <p>A sample size was calculated based on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities.</p> <p>A sample size was calculated from the installed stoves as:</p>
---	--

Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring
9421	95/10	29	303

The sample size has been calculated according to the following equations:

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

Where,

n = number of bio-ethanol stove to be sampled

N = Total number of bio-ethanol stove in the population

z = Constant referring to level of confidence (1.96 for 95 % confidence)

Precision = Required precision (e.g. 10% = 0.1)

		<p>$V = p \cdot (1 - p) / p^2$ for proportion parameters Where: n = sample size N = population size Z = Confidence value constant (1.96 for 95%) C = Desired precision (10%) SD = expected standard deviation for mean parameter $Mean$ = expected mean for mean parameter p = expected proportion for proportion based parameter</p> <p>Verification team during onsite visit could visit and verify a total of 12 samples were verified from the CME sample list and all were found in operation across all the households. No discrepancies have been observed from the result presented by CME and DOE sampling.</p> <p>Procedures for sampling have been duly articulated in the field monitoring excel report and spreadsheet, and a sample of survey questionnaires were furnished to verification team. However, during course of verification, relevant findings were raised and same can be referred in detail in Appendix-4 of this report</p>								
		<p>Parameter : $N_{i,j}$</p> <p>Name: Number of project devices of type i and batch j operating in institutions during year y</p> <p>Description on how the sampling efforts and survey comply with the validated sampling plan:</p> <p>The parameter was assessed through onsite assessment of randomly selected (simple random sampling) sample of SME (Kibandas) bioethanol stoves annually. The SMEs (Kibandas) selected were visited by Survey team 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.</p> <p>A monitoring survey was conducted by CME in January 2020 to determine the Number of bio ethanol cook stoves in operation or replaced on a sampling basis.</p> <p>A sample size was calculated based on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities.</p> <p>A sample size was calculated from the installed stoves as:</p> <table border="1" data-bbox="625 1485 1396 1630"> <thead> <tr> <th>Total population (N)</th> <th>Confidence/precision</th> <th>Sample Size (n) required</th> <th>Samples covered during monitoring</th> </tr> </thead> <tbody> <tr> <td>209</td> <td>95/10</td> <td>26</td> <td>78</td> </tr> </tbody> </table> <p>The sample size has been calculated according to the following equations:</p> $n \geq \frac{z^2 \cdot N \cdot V}{(N-1) \cdot \text{precision}^2 + z^2 \cdot V}$ <p>Where:</p> $V = \frac{p \cdot (1-p)}{p^2}$ <p>Where: n = sample size N = population size Z = Confidence value constant (1.96 for 95%) C = Desired precision (10%)</p>	Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring	209	95/10	26	78
Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring							
209	95/10	26	78							

		<p>p = expected proportion for proportion-based parameter</p> <p>The required sample sizes were derived using equation (1), (2), (3), (4) and (9) of Appendix 3 of the Guideline: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0 for monitoring parameter as follows:</p> $n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$ <p><u>Where,</u></p> <p>n = number of bio-ethanol stove to be sampled</p> <p>N = Total number of bio-ethanol stove in the population</p> <p>z = Constant referring to level of confidence (1.96 for 95 % confidence)</p> <p>Precision = Required precision (e.g. 10% = 0.1)</p> <p>Verification team during onsite visit could verify a total of 12 samples from the CME sample list applying acceptance sampling approach with C value = 1. All sample verified by DOE were found in operation across all the SMEs/Kibandas visited. No discrepancies have been observed from the result presented by CME and DOE sampling.</p> <p>Procedures for sampling have been duly articulated in the field monitoring excel report and spreadsheet, and a sample of survey questionnaires were furnished to verification team. However, during course of verification, relevant findings were raised and same can be referred in detail in Appendix-4 of this report</p>
	Parameter	BC _{PJ,PP,y}
	Name:	Average annual consumption of woody biomass in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent in the households
	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>This is the Average Woody biomass consumption in households during the monitoring period in the project scenario. The number of meals cooked on the pre-project or baseline stove are monitored. The percentage contribution of the pre-project stove is calculated and multiplied by ex-ante fixed parameter "Quantity of woody biomass used in the absence of the project activity".</p> <p>CME undertook annual sampling and surveying to determine Average Woody biomass consumption in households during the monitoring period in the project scenario. After this step the fuel wood consumption in baseline stoves is excluded from the ex-ante fixed B_{old} to arrive at emission reductions. The data is gathered at end user household/SMEs end pertaining to approximate number of meals availed from stoves other than bioethanol stoves during field surveys by monitoring survey team.</p> <p>The following equation is used to calculate that proportion</p> $n > \frac{(1.96)^2 \times N \times V}{(N-1) \times 0.1^2 + 1.96^2 \times V}$ <p><u>Where:</u></p> $V = \left(\frac{SD}{Mean} \right)^2 \text{ for mean parameters}$ <p><u>Where:</u></p> <p>n = sample size</p> <p>N = population size</p> <p>Z = Confidence value constant (1.96 for 95%)</p>

		<p>C = Desired precision (10%) SD = expected standard deviation for mean parameter $Mean$ = expected mean for mean parameter</p> <p>A total of 12 samples were checked by verification team applying acceptance sampling method.</p> <p>A sample size was calculated based on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities. A total of 303 samples were surveyed from the household bioethanol stoves as illustrated above.</p> <p>Where:</p> <ul style="list-style-type: none"> • 1.96 is the z value for the 95% confidence interval • precision required as per PP application 95/10 • N is the total population <table border="1"> <thead> <tr> <th>Total population (N)</th><th>Confidence/precision</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>9421</td><td>95/10</td><td>302</td><td>303</td></tr> </tbody> </table> <p>Procedures for sampling have been duly articulated in the field monitoring survey spreadsheet and corresponding survey forms containing Google Form based survey questionnaires furnished to DOE for assessment.</p> <p>Monitoring surveys were conducted by trained personnel using random sampling following the standard 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. However, Findings were raised on this during the verification process and CME has sufficiently taken the appropriate action and hence all findings could be resolved.</p> <p>For more detail, Appendix 4 of this report can be referred.</p>	Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring	9421	95/10	302	303
Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring							
9421	95/10	302	303							
	Parameter:	Q _{SME, Eth}								
	Name:	Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to SMEs (Kibandas)								
	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>This parameter is the Average Bioethanol Consumption by the SME customer. CME undertook annual monitoring applying sampling and survey to determine Average bioethanol consumption in SME (Kibanda) during the monitoring period. The data is gathered at end user SME/Kibandas which is eventually utilized to calculate the amount of replaced equivalent non-renewable biomass in the baseline scenario.</p> <p>The following equation is used to calculate that proportion</p> $n > \frac{(1.96)^2 \times N \times V}{(N-1) \times 0.1^2 + 1.96^2 \times V}$ <p>Where:</p> $V = \left(\frac{SD}{Mean} \right)^2 \text{ for mean parameters}$ <p>Where:</p> <p>n = sample size N = population size Z = Confidence value constant (1.96 for 95%) C = Desired precision (10%) SD = expected standard deviation for mean parameter</p>								

		<p><i>Mean</i> = expected mean for mean parameter</p> <p>A sample size was calculated based on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities. A total of 78 samples were surveyed from the SMEs/Kibandas bioethanol stoves as illustrated above.</p> <p>Where:</p> <ul style="list-style-type: none"> • 1.96 is the z value for the 95% confidence interval • precision required as per PP application 10% • N is the total population <table border="1"> <thead> <tr> <th>Total population (N)</th><th>Confidence/precision</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>209</td><td>95/10</td><td>67</td><td>78</td></tr> </tbody> </table> <p>Procedures for sampling have been duly articulated in the field monitoring survey spreadsheet and corresponding survey forms containing Google Form based survey questionnaires furnished to DOE for assessment.</p> <p>DOE during onsite verification site visit could verify 12 samples of Kibandas applying acceptance sampling and cross verify the average monthly consumption of bioethanol together with the biofuel price and availability etc.</p> <p>Monitoring surveys were found conducted by trained personnel using simple random sampling following the standard for Sampling and surveys for CDM project activities and programme of activities version 08. As described above, it can be said that sampling was deemed appropriate and in line with registered monitoring plan. However, Findings were raised on this during the verification process and CME has sufficiently taken the appropriate action and hence all findings could be resolved.</p> <p>For more detail, Appendix 4 of this report can be referred.</p>	Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring	209	95/10	67	78
Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring							
209	95/10	67	78							
	Parameter	Q _{HH,Eth}								
	Name:	Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households								
	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>This parameter is the Average Bioethanol Consumption by the house holds using KOKO cookers. CME undertook annual monitoring applying sampling and survey to determine Average Woody biomass consumption in in households during the monitoring period in the project scenario. The data is gathered at end user household customer which is eventually utilized to calculate the amount of replaced equivalent non-renewable biomass in the baseline scenario.</p> <p>The following equation is used to calculate that proportion</p> $n > \frac{(1.96)^2 \times N \times V}{(N-1) \times 0.1^2 + 1.96^2 \times V}$ <p>Where:</p> $V = \left(\frac{SD}{Mean} \right)^2 \text{ for mean parameters}$ <p>Where:</p> <p>n = sample size</p> <p>N = population size</p> <p>Z = Confidence value constant (1.96 for 95%)</p> <p>C = Desired precision (10%)</p>								

		<p>SD = expected standard deviation for mean parameter</p> <p>$Mean$ = expected mean for mean parameter</p> <p>A sample size was calculated based on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities. A total of 303 samples were surveyed from the household bioethanol stoves as illustrated above.</p> <p>Where:</p> <ul style="list-style-type: none"> • 1.96 is the z value for the 95% confidence interval • precision required as per PP application 95/10 • N is the total population <table border="1"> <thead> <tr> <th>Total population (N)</th><th>Confidence/precision</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td>9421</td><td>95/10</td><td>62</td><td>303</td></tr> </tbody> </table> <p>Procedures for sampling have been duly articulated in the field monitoring survey spreadsheet and corresponding survey forms containing Google Form based survey questionnaires furnished to DOE for assessment.</p> <p>DOE during onsite verification site visit could verify 12 samples of Kibandas applying acceptance sampling and cross verify the average monthly consumption of bioethanol together with the biofuel price and availability etc.</p> <p>Monitoring surveys were found conducted by trained personnel using simple random sampling following the standard for Sampling and surveys for CDM project activities and programme of activities version 08. As described above, it can be said that sampling was deemed appropriate and in line with registered monitoring plan. However, Findings were raised on this during the verification process and CME has sufficiently taken the appropriate action and hence, all findings could be resolved. For more detail, Appendix 4 of this report can be referred.</p>	Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring	9421	95/10	62	303
Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring							
9421	95/10	62	303							
	Parameter	Np,l								
	Name:	The Average number of persons equivalent served by the SME with full-day meals								
	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>The parameter was assessed through sampling survey randomly selected (simple random sampling) of SME/institutions (Kibandas) using KOKO bioethanol stoves (KOKO Cookers). The SMEs (Kibandas) selected were physically visited by Survey team appointed by the CPA Implementer as verified during cross-checking the information by interviewing survey team and owner of Kibandas/SME. During visit, the existence and functionality of the appliance was confirmed through a visual assessment of the appliance with the unique ID clearly visible.</p> <p>A monitoring survey was conducted by CME in January 2020 to determine the Average number of persons equivalent served by the SME with full-day on sampling basis. Though, this value is nowhere utilised for the calculation of emission reduction due to per capita bioethanol consumption but the accrual of emission reductions are based on baseline biomass consumption equivalent to the bio ethanol consumption by the SMEs.</p> <p>A sample size was calculated on estimated proportion values based on project developer's knowledge and experience in line with para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities.</p> <p>A sample size was calculated from the installed stoves as:</p> <table border="1"> <thead> <tr> <th>Total population (N)</th><th>Confidence/precision</th><th>Sample Size (n) required</th><th>Samples covered during monitoring</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td></td></tr> </tbody> </table>	Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring				
Total population (N)	Confidence/precision	Sample Size (n) required	Samples covered during monitoring							

		209	95/10	67	78
		<p>Verification team during onsite visit could visit and verify a total of 12 samples from the CME sample list applying acceptance sampling approach with C value = 1. All sample verified by DOE were found in operation across all the SMEs/Kibandas visited. Verification team also verified and cross-checked the information by interviewing survey team and owner of Kibandas/SME during onsite inspection and interview. No discrepancies have been observed from the result presented by CME and DOE sampling.</p> <p>Procedures for sampling have been duly articulated in the field monitoring excel report and spreadsheet, and a sample of survey questionnaires were furnished to verification team. However, during course of verification, relevant findings were raised and same can be referred in detail in Appendix 4 of this report.</p>			
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:			
		CL 03, CL 06, CAR 02, CAR 04, CAR 05, & FAR 01.			
Conclusion	<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 monitoring survey and sampling records 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 can confirm that all sampled parameters have been determined correctly in line with the registered corresponding CPA-DD 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>Based on above along with the onsite visit and interview and physical inspection of the KOKO cooker installation in Kenya, the verification team concludes the approach and result deemed appropriate and acceptable.</p>				

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

Means of verification	<p>During the verification, the relevant monitoring equipment have been checked to confirm 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"> • /MR/ • /XLS/ 	
Findings	<input type="checkbox"/>	Calibration is not under the purview of the CME, however, third party WBT agency has provided the complete calibration detail of the equipment in the report which were also checked during onsite inspection by the verification team 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"/>	<p>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.</p> <p>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.</p> <p>For details please refer to appendix 6</p>

	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	<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 applied methodology and the registered PoA monitoring plan do not make provision for calibration. The Efficiency of bioethanol KOKO Cooker is fixed. Thus, additional verification, testing of stove efficiency was not deemed as necessary.	

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

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

Means of verification	<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"> <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. <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. <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. <i>Completeness:</i> It has been checked whether all calculations are complete and without omissions. <p>Baseline emission is determined using the following equation in line with applied methodology:</p> $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected} \times Stove_{year} \times LAC$ <p>BE_y = Baseline emissions during the year y in t CO₂e</p> <p>B_y = Quantity of woody biomass that is substituted or displaced in tonnes</p> <p>$f_{NRB,y}$ = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (fNRB)</p> <p>$NCV_{biomass}$ = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)</p> <p>$EF_{projected_{fossil fuel}}$ = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 63.7 t CO₂/TJ²</p> <p>$Stove_{year}$ = Fraction of Year(s) the cookstove i was operational during the monitoring period</p> <p>LAC = Leakage Adjustment Factor (Default Value - 0.95)</p> <p>For KOKO cookstoves operational in households, Option (b) is applied to calculate parameter B_y.</p> $B_y = B_{HH,y} = N_{HH} \times N_{p,HH} \times (BC_{BL,PP,y} - BC_{PJ,PP,y})$
------------------------------	---

Where:

N_{HH} = Number of households in the project activity, number

$N_{p,HH}$ = Average number of persons served per household, number

$BC_{BL,PP,y}$ = Average annual consumption of woody biomass per person before the start of the project activity, tonnes/person/year

$BC_{PJ,PP,y}$ = If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per person in the pre-project devices during the project activity, tonnes/person/year

For cookstoves operational in SMEs, Option (d) is applied to calculate parameter B_y on the basis of bioethanol consumed in the SME.

$$B_y = \sum_i^n HG_{p,y} \div (NCV_{biomass} \times \eta_{old,i})$$

Where:

$HG_{p,y}$ or HG_{SME} = Quantity of thermal energy generated by the new renewable energy technology in the project in year y (TJ)

$\eta_{old,i}$ = Efficiency of pre - project device per type of device i

Household KOKO cooker/Cookstoves

Parameters according to AMS I.E. Version 9	Value	Unit	Remarks
Avg Fraction of year(s) the cookstove is operational in Household during the monitoring period, $Stove_{year}(HH)$	0.075	Years/cookstove	Monitored Ex-post
Average annual consumption of woody biomass per person before the start of the project activity, $BC_{BL,PP,Y}$	0.93	tonnes/person/year	Registered CPA-DD-0001
Average annual consumption of woody biomass in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ,PP,Y}$	0.09	tonnes/person/Year	Monitored Ex-post
Net per capita Woody Biomass displaced by PoA	0.84	tonnes/person/year	Calculated
$f_{NRB,y}$	0.915	Fraction, %	Re-calculated as per Tool 30 in accordance with PoA requirement
$NCV_{Biomass}$	0.0156	TJ/Tonne	Registered CPA-DD-0001
$EF_{projected\ fossil\ fuel}$	63.70	Tonnes CO ₂ e/TJ	Registered CPA-DD-0001
Leakage Adjustment Factor (LAF)	0.95	fraction	Registered CPA-DD-0001

Avg Fraction of year(s) the cookstove is operational in Household during the monitoring period, $\text{Stove}_{\text{year}}(\text{HH})$	0.075	Years/cookstove	Monitored Ex-post
Per Capita Emission Reductions during the Monitoring Period	0.055	tCO ₂ /person	Calculated
Baseline Emissions per unit Cookstove	0.24	tCO ₂ /cookstove	Calculated
Baseline Emissions from domestic use (Households)	2,267.93	tCO ₂ /yr	Calculated

Institutional Cookstoves

Parameters according to AMS I.E. Version 9	Value	Unit	Reference
Number of project devices of type i and batch j operating in institutions (SME) during year y, N_i	209	Cookstoves	Monitored Ex-post
Avg Fraction of year(s) the cookstove is operational in SME (Kibanda) during the monitoring period, $\text{Stove}_{\text{year}}(\text{I})$	0.090	Years/cookstove	Monitored Ex-post
Avg ethanol consumption per SME, $\mu(\text{ethanol}, \text{D})$	1.27	Lt/SME/day	Monitored Ex-post
Annual SME Ethanol Consumption, $\mu(\text{ethanol}, \text{D}, \text{Y})$	0.458	KL/SME/year	Calculated
Annual Commercial Ethanol Consumption	0.36	tonnes/SME/year	Calculated
Annual Quantity of thermal energy generated by new renewable technology in project in year y ($\text{HG}_{\text{SME}/\text{stove}}$)	0.0087	TJ/SME/year	Calculated
Annual Quantity of woody biomass that is substituted or displaced in tonnes, B_y	5.3173	tonnes/SME/year	Calculated
$f_{\text{NRB}, y}$	0.915	fraction (%)	Calculated as per Tool 30 in accordance with PoA requirement
$\text{NCV}_{\text{Biomass}}$	0.016	TJ/tonne	IPCC Default Value, AMS-I.E.
$\text{EF}_{\text{projected fossil fuel}}$	63.7	tCO ₂ /TJ	Default Value, AMS-I.E.
Leakage Adjustment Factor (LAF)	0.95	fraction	Default Value, AMS-I.E.
Annual Baseline Emissions per SME, BE	4.59	t CO ₂ e/SME/year	Calculated
SME Baseline Emissions during the Monitoring Period	86.83	t CO ₂ e	Calculated

The following sources of information have been used in this context:

- /MR/
- /PoA-DD/
- /CPA-DD/
- /XLS/
- /USAGE/
- /SAMPLE/
- /SAMPLING/
- /AMS-I.E/

Findings	<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"/>	The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 02, CAR 04
Conclusion	<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 5.
		Based on above and assessment of all the monitoring results including emission reduction calculation worksheet, cross check of all input values (fixed ex-ante) ^{/CPA-DD/} , monitored values ^{/MR/} , calculation co-relations ^{/CPA-DD/} ^{/MR/} , ^{/XLS/} , ^{/AMS-I.E/} , 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

Means of verification		<p>During the verification process, the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> • <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. • <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. • <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. • <i>Completeness</i>: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /CPA-DD/ • /XLS/ • /AMS-I.E/
Findings	<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 checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 02, CAR 04 is raised

Conclusion	<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.	
	Project Emission Calculation Approach		
	A.	Project Emissions due to Bioethanol Production	
		Para 22, AMS-I.E	$PE_{bioeth-prod} = Q_{Eth} \times EF(bioethanol\ production)$
	B.	Project Emissions due to Electricity Consumption	
			$PE_{EC,y} = N_{KP} \times EC_{PJ,j,y} \times EF_{EF,j,y} \times (1+TDL_{j,y})$
	C.	Project Emissions due to Transport	
			$PE_{TR,m} = \sum D_{f,m} \times FR_{f,m} \times EF_{CO2,f} \times 10^{-6}$
		Project Emission Calculation	
	Project Emissions due to Bioethanol Production	tCO ₂ e	1.28
	Project Emissions due to Electricity Consumption	tCO ₂ e	32.71
	Project Emissions due to Transport	tCO ₂ e	1.21
	Total Project Emissions	tCO₂e	35.20

E.3.6.3. Calculation of leakage GHG emissions

Means of verification	<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"> <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. <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. <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. <i>Completeness:</i> It has been checked whether all calculations are complete and without omissions. <p>The leakage due to the use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources has been considered in the emission reduction calculation. In accordance with paragraph 24 of the applied methodology, a default net to gross adjustment factor of 0.95 to account for this leakage is applied.</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"> /MR/ /CPA-DD/ /XLS/ /AMS-I.E./
Findings	<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:
		-
Conclusion	<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.
	PP has applied related default adjustment factor of 0.95 correctly in line with § 24 of the applied methodology and therefore, no further leakage emission result is separately indicated in monitoring report or this report. Bio-ethanol stove are newly produced before distribution as confirmed during onsite visit and interview with the CME and KOKO stove users (Households and Kibanda owners).	

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

Means of verification	<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"> -Total baseline emissions, - Total project emissions, - Total leakage, - Total emission reductions. <p>The MR demonstrate the summary of GHG emission reductions for the monitoring period and calculated according to the applied methodology AMS-I.E version 9.0 as follows:</p> <p>$ER_y = BE_y - PE_y - LE_y$</p> <p>Where:</p> <p>ER_y Emission reductions during the period y in tCO₂e</p> <p>BE_y Baseline emissions during the period y in tCO₂e</p> <p>PE_y Project emissions during the period y in tCO₂e</p> <table border="1"> <thead> <tr> <th>Value</th><th>CPA-001</th></tr> </thead> <tbody> <tr> <td>BE_y</td><td>2,354.76</td></tr> <tr> <td>PE_y</td><td>35.20</td></tr> <tr> <td>ER_y</td><td>2,319 (rounded down value)</td></tr> </tbody> </table> <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 were 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"> • /MR/ • /XLS/ • /CPA-DD/ • /PoA-DD/ • /AMS-I.E./ • /USAGE/ 		Value	CPA-001	BE_y	2,354.76	PE_y	35.20	ER_y	2,319 (rounded down value)
	Value	CPA-001								
BE_y	2,354.76									
PE_y	35.20									
ER_y	2,319 (rounded down value)									
Findings	<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.
		CAR 02, CAR 03 and CAR 04
Conclusion	<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.
		The summary table in MR has been filled correctly and the values are in line with related emission reduction calculation spreadsheet.

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage ⁸ (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
KOKO Kenya - Ethanol Cookstoves Program – CPA-0001 supported by Republic of Kenya Version: 4.0 PoA 10476 10476-P1-0001-CP1	2,354.76	35.20	0	0	2,319	2,319

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

Means of verification	The verification team has 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.	
Findings	<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: -
Conclusion	<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.

⁸ Already accounted and not separately calculated

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period (tCO ₂)	Value estimated in ex ante calculation in the included CPA-DD(s) (tCO ₂) ⁹
CPA-0001: KOKO Kenya – Ethanol Cookstoves Program 10476-P1-0001-CP1	2,319	29,929

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

Means of verification	On the basis of the above comparison of actual values of the monitoring period with the estimations in the registered CPA-DD (B.4.3) and section F.5 of the MR, the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.	
Findings	<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: -
Conclusion	<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.3.7. Assessment of reported sustainable development co-benefits

Means of verification	<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: • /MR/ • /PoA-DD/ • /CPA-DD/ • /unfccc/.
Findings	<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: -
Conclusion	<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.

⁹ The estimated amount covers the time from CP start of this 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 ERs are appropriately calculated as $156,063 \times 70 / 365 = 29,929$ tCO₂ (rounded down)

	<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

Means of verification		<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 for the Global Stakeholders Consultation process from 24/01/2020.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /unfccc/.
Findings	<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"> - requested further information from the submitters of the comments - informed the project participants of the comments received, and requested their feedback within a specified timeframe, - considered the input received and has assessed whether such comments are relevant to the CDM project activity, - acknowledged receipt of all submitted comments on the MR of the proposed CDM project activity, - assessed whether the comments are related to the CDM rules and requirements (if so related findings have been raised as per below), - 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, - contacted the secretariat to make them publicly available (if only addressed to the DOE), - 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.
	<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>
Conclusion	<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

KOKO Networks Limited has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the CDM PoA: “**KOKO Kenya - Ethanol Cookstoves Program**”, with regard to the relevant requirements for CDM Programme of Activities. The PoA reduces GHG emissions by promoting use of bioethanol as clean cooking fuel by effective use of efficient cooking technologies in low income households as well as institutions compared to the baseline scenario. This verification covers the period from 23/10/2019 to 31/12/2019 (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-I.E. Version 09.0,
- 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: **2,319 tCO₂e**

SECTION H. Certification statement

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

“KOKO Kenya - Ethanol Cookstoves Program”

registered under

UNFCCC-No.:10476

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

MP-No.: 1

from: 23/10/2019

to: 31/12/2019

(including both days) as follows:

Emission reductions: **2,319 tCO₂e**

New Delhi, 26/06/2020



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 ₂	Carbon dioxide
CO _{2eq}	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)
HHs	House Holds
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 field monitoring test
SD	Standard deviation
UNFCCC	United Nations Framework Convention on Climate Change
VT	Verification Team
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers

TUV NORD
Certification

Statement of Competence
Appointment and authorization according to the procedures of the TUV NORD JICDM 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_001-VN00-F20-2019-11-21-MKM-AM

TUV NORD
Certification

Statement of Competence
Appointment and authorization according to the procedures of the TUV NORD JICDM 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: 2016-10-19

251_001-VN00-F20-2019-10-19-DL-AM

Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	UNFCCC	/AMS-I.E./	<ul style="list-style-type: none"> AMS-I.E. Version 09.0 - "Switch from non-renewable biomass for thermal applications by the user" 	-	Other
2	PP	/UND/	<ul style="list-style-type: none"> Evidence for price of bioethanol (KES 95.00). Undertaking/ declaration of the Bio-Ethanol price by the KOKO Networks dated 24 April 2020 CME Declaration on fuel transport-Record of to-fro distances dated 30 April 2020 Fuel transportation log utilized to calculate the volume of the bioethanol transported 		CME

No.	Author	Reference	Title	References to the document	Provider
			<ul style="list-style-type: none"> Undertaking by the CME regarding the procurement of bioethanol from the VIVO Energy Kenya dated 08/05/2020 		
3	PP	/CPA-DD/	<ul style="list-style-type: none"> CPA-DD titled "CPA-0001: KOKO Kenya - Ethanol Cookstoves Program" Version 4.0, dated 18/10/2019 		Other
4	PP	/DB/	<ol style="list-style-type: none"> Customer Sales Database sheets (KOKO Core Database_CDM Verification.xls, Sampling Size and User Selection.xlsx) covering the applied Monitoring Period Declaration Statement by CPA implementer that the CPA is not part of any other project activity in line with the Inclusion Criteria 3- Technical Review Report dated 15/04/2019 Proof of Carbon Credits waiver by End user (Sample evidences) in line with the Inclusion Criteria 15- Customer terms & conditions document provided by PP as Proof of Carbon Credits waiver by End user Sample Invoice/Receipt dated 30/05/2019 (Reference: Invoice BILL/2019/0655) for KOKO Cookstove Digital Database of (KOKO stove sold) and sample digital application form Registration of household in app-based software: screenshot of smart phone application (sample copy) from the KOKO Mobile App – Customer Journey Certificate of conformity issued by KENYA BUREAU OF STANDARDS for requirements of pre-export verification of conformity issued by SGS dated 04.10.2017, Reference No. 4024372611 Evidence of implementation of 624 KOKO Points Chemical & Industrial Consultancy Unit, Department of Chemistry, University of Nairobi for determination of the NCV of the biomass dated 14/04/2020 Evidence for price of bioethanol (KES 95.00) 		Other

No.	Author	Reference	Title	References to the document	Provider
			11. Total mass of the Bioethanol dispatched/ dispensed from the KOKO Points 12. Back up Calculation of F_{nrb}		
5	DOE	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)	-	Other
6	PP	/USAGE/	1. Sample Usage Survey Forms-Google Form 2. Usage survey analysis report integrated as part of the ER worksheet	-	Other
7	IPCC	/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp	Other
8	UNFCCC	/KPI/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Other
09	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	http://cdm.unfccc.int/Reference/COPMOP/index.html	Other
10	UNFCCC	/MR/	Monitoring Report titled 'KOKO Kenya - Ethanol Cookstoves Program', • Version 1.0, dated 13/01/2020 • Version 5.0, dated 17/05/2020 • Version 6.0, dated 15/06/2020	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	Other
11	UNFCCC	/MRT/	Monitoring Report Form (CDM-PoA-MR-FORM), Version 03.0	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	Other
12	UNFCCC	/PoA-DD/	Project Design Document for CDM PoA project: "KOKO Kenya - Ethanol Cookstoves Program" Version 05 dated 11/07/2019	https://cdm.unfccc.int/ProgrammeOfActivities/po_a_db/YNXCPIJ5ZO7DTRGMV0F2AKEU486LQS	Other
13	UNFCCC	/PS/	CDM Project Standard for Programme of activities (Version 2.0)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
14	PP	/SSQ/	• Sample Monitoring Survey Forms • Sample CPA Distribution Records • Evidence for random number generator for sampling of households and CME (Kibanda)		Other
15	PP	/VAL/	Validation Report for CPA-DD titled "KOKO Kenya - Ethanol Cookstoves Program ", Version 04 dated 12/07/2019		Other
16	UNFCCC	/VVS/	CDM validation and verification standard for programmes of activities (Version 2.0)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
17	PP	/WC/TECH/	• End-User Warranty Cards	-	Other

No.	Author	Reference	Title	References to the document	Provider
			<ul style="list-style-type: none"> Stove specifications for models disseminated monitoring period in line with the Inclusion Criteria 4- Technical Specification of bioethanol stove 		
18	UNFCCC	/SAMPLE/	<ul style="list-style-type: none"> “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 04.0) “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 08.0) 	https://cdm.unfccc.int/Reference/Guidclarif/index.html http://cdm.unfccc.int/Reference/Standards/index.html	Other
19	UNFCCC	/GOT/	Glossary “CDM terms” (version 10.0)	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu	Other
20	PP	/XLS/	<ul style="list-style-type: none"> Emission Reduction Sheet Initial version submitted along with the Version 01 of MR Emission Reduction Sheet final version, version submitted along with the Final Version of MR fNRB backup worksheet using Tool 30 for fNRB calculation 	-	PP
21	PP	/RC/	Reliability Check <ul style="list-style-type: none"> Evidence for random number generator for sampling for household and SME (Kibandas) Filled sample questioners utilized for the Usage Report- Google Form based database Sampling Template for KOKO agents – Sample Google Form Sample size and Reliability check for Survey integrated into the ER worksheet 	=	PP
22	UNFCCC	/unfccc/	UNFCCC	http://cdm.unfccc.int	Other
23	IPCC	/ipcc/	IPCC publications	www.ipcc-nggip.iges.or.jp	Other
24	PP	/TRG/	Training records of imparted for below fields: <ul style="list-style-type: none"> Training Records of the Monitoring Survey Team KOKO-Training Presentation for Sales and marketing team and all relevant personnel involved in GHG monitoring 		Other

No.	Author	Reference	Title	References to the document	Provider
25	PP	/RECEIPT/	Sample dispatch receipt of Bio-ethanol to Vivo Energy from <ul style="list-style-type: none"> • Agro-Chemical & Food Company, Muhoroni, Kenya • Kibos Sugar & Allied Industries, Kisumu, Kenya 		Other
26	PP	/SAMPLING, /Bio-Ethanol Data/	<ul style="list-style-type: none"> • Random number generator and identification of HH and Kibandas for Survey (dated 03/01/2020) • Internal Communication dated 03/01/2020- Approval for undertaking Sampling (along with the list of HH and Kibandas) • Sample copy of survey Form (electronic) • Authenticated copy of the Survey records • Report in form of Letter to the Verification Team Leader as response to the Correction Factor on account of the Christmas Holidays for average ethanol consumption • Evidence for price of bio-ethanol (KES 95.00). Undertaking/ declaration of the Bio-Ethanol price by the KOKO Networks dated 24 April 2020 • CME Declaration on fuel transport-Record of to-fro distances dated 30 April 2020 • Fuel transportation log utilized to calculate the volume of the bio-ethanol transported • Screen shot of ERP database 		Other
27	PP	/FA/	Framework agreements between KOKO Networks and Vivo Energy named "WHOLESALE CONCESSION AND OPERATING AGREEMENT" dated 18 th of April 2018.	-	Other
28	PP	/ERPDA/	Emission Reduction Purchase Development Agreement between KOKO Networks Limited and Ecoeye Co., Ltd.	-	Other

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

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

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

Table 4. CLs from this verification

CL ID	01	Section no.	C.1	Date: 27/01/2020
Description of CL				
As per CPA-DD section A.1, the CPA is expected to be completed in 2021; however, section C.1 of MR states the date of completion as 2020. Clarification is requested.				
CME response				Date: 11/03/2020
It was a typographical error in the MR. No change is envisaged to the design implementation till now. The MR has been corrected to report completion of phase 1 CPA by June 2021 which is consistent with the CPA design.				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 15/04/2020
The inconsistency is now addressed. Date of implementation is now in line with CPA-DD.				
Conclusion <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		

CL ID	02	Section no.	E.2	Date: 27/01/2020
Description of CL				
The parameter, $NCV_{i,biomass}$ states that the default value from the IPCC Guidelines for National Greenhouse Gas Inventories 2006, will be applied; however the QA/ QC procedures state that "CME will ensure that the NCV determination is performed as per the national/international standards and procedures". Clarification is requested how the parameter " $NCV_{i,biomass}$ " is determined for the applied monitoring period.				
CME response				Date: 11/03/2020
The parameter NCV biomass is a monitoring parameter as per the registered CPA-DD. The parameter contains monitoring of NCV of 3 different fuels namely, Fuelwood, Charcoal and Bioethanol. It is described in the registered CPA-DD that the default NCV values of Fuelwood and charcoal will be used for ER calculations. However, the NCV of bioethanol will be manually monitored either in-house or through external agency by the CME.				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 22/03/2020
Explanation is accepted, however there is inconsistency between the MR and ER pertaining to the applied values of NCV of ethanol. NCV in ER worksheet (0.0274 TJ/tonne) and NCV in MR (0.0254 TJ/tonne) are inconsistently presented. Appropriate corrections are requested.				
The value of parameter "Average annual consumption of woody biomass in Households during MP" is calculated (0.0865 tonnes/Year/person) based on Household Monitoring Survey is inconsistently reported as "0.0956" in MR.				
CME response				Date: 24/03/2020
The error is now corrected. The monitoring of NCV was conducted as per the procedures and guidelines laid out by the National/International protocol. The ER calculations are also consistently applying the monitored NCV value.				
Documentation provided by the CME				
Revised ER Calculation				
Lab Test Report				

DOE assessment		Date: 14/04/2020	
<ul style="list-style-type: none"> The submitted the "Lab Test Report" for the NCV analysis of ethanol. Submitted lab test report^{DB-9/} is issued by "CHEMICAL & INDUSTRIAL CONSULTANCY UNIT" Department of Chemistry, University of Nairobi dated 14/04/2020 which is assessed to in line with revised values presented in the MR and ER calculation spreadsheet. The Verification Team additionally verified the value with respect to the registered CPA-DD and confirms that the NCV value in the Test Report (0.0241 TJ/tonne) is lower than the registered CPA-DD (0.0274 TJ/tonne) and thus, finding has been CLOSED out. The inconsistency between MR and ER has been addressed appropriately. 			
Conclusion <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	
CL ID	03	Section no.	C.3.1, E.2
Description of CL		Date: 27/01/2020	
The section C.3.1 of MR is referring to deviation whereas the same section states that the provision is in-line with the CPA-DD ("the monitoring Data/parameter table 10 also allows estimation of project emissions based on conservative emissions assuming continuous operations of the electricity consuming system during the monitoring period, in case of missed monitoring for not more than 30 days.."). Clarification is requested.			
CME response		Date: 11/03/2020	
The deviation for monitoring of electricity consumption by the KOKO points was a mistake. The MR is corrected.			
Documentation provided by the CME			
Revised MR			
DOE assessment		Date: 22/03/2020	
The Verification Team could cross check the presence of electricity consumption meters at shop/ premise of KOKO Point however, it was identified that CME could not monitor specific electricity consumption attributable to KOKO Points. The provisions of the stated monitoring plan stipulated under parameter " $EC_{PJ,j,y}$ " of registered CPA-DD, under the "Additional comment" are met. Furthermore, the provisions of monitoring are compared against the description under section C.3.1 of MR together with onsite observations and requirements stated under B.5.1, parameter table Table I.7.1.9, Additional comment of generic part of PoA-DD. Thus, the verification team based on above and below assessments confirms that provisions of registered monitoring are appropriately met. Furthermore, it is also inline with the below stated stipulation under "Additional Comment" for missing monitoring data as stated below:			
<i>Provisions for: In case of missing data due to meter failure or other reasons for a certain period of time, the following options to estimate electricity consumption may be applied:</i>			<i>Availed option by CME for calculating PE</i>
(a) A conservative value based on rated capacity and full Operational hours (8760 hours ¹⁰);			<input checked="" type="checkbox"/>
(b) Estimation of electricity consumption as highest daily value among the daily monitored values multiplied by the number of days' data were missing. This is option is applicable for missing data of up to 7 consecutive days within three consecutive months; or			<input type="checkbox"/>
(c) Highest value for the same calendar period of the previous years among recorded values; or			<input type="checkbox"/>
(d) A value of a representative sample of the first batch of project devices. In other words, it may be assumed that the electricity consumption measured in a representative sample of the first batch of project devices apply to all subsequent batches.			<input type="checkbox"/>
Accordingly below provisions are followed by CME			
<ul style="list-style-type: none"> The rated electricity consumption of 20 W is applied (Verified based on technical specification) Duration of calculation is entire monitoring period (this duration is calculated by assuming that highest electricity consumption is applied for entire monitoring period) Calculation of project emission by application of maximum capacity (the actual wattage is applied which is maximum power consumption) The T & D losses are most conservative i.e 20 % 			
Thus, all the provisions of the monitoring plan are met. However the statement under section C.3.1 of MR marked "Temporary Deviation". This is now acceptable deemed as appropriate. CL has been CLOSED.			

¹⁰ Hours corresponding to the one year. Adjustment applicable for applied MP on pro-rata basis. Example if MP is for 2 years than the hours will be (2 X 8760 hours)

Conclusion <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

CL ID	04	Section no.	E.2	Date: 19/02/2020
Description of CL				
For calculating HH Woody Biomass saved, By- Why charcoal conversion factor of 6 is utilized				
CME response				Date: 11/03/2020
<p>In cases where charcoal is replaced by the project activity, the application of charcoal conversion factor (Amount of fuelwood required to produce 1 ton of charcoal) is quite common in all biomass-based projects and is derived from AMS-II.G.</p> <p>The latest version (Version 10) of applied methodology AMS-I.E., under paragraph 28, also recommends application of such correction factors to biomass consumption in case if the unit systems are replacing charcoal as baseline fuel.</p> <p>The IPCC guidelines also refer to a range of wood-to-charcoal conversion factor between 4 and 8. It also recommends that if no local information is available, 6 kg of wood input per kg of charcoal may be used as default (pg 1.44, https://www.ipcc-nggip.iges.or.jp/public/gl/guidelin/ch1ref3.pdf).</p>				
Documentation provided by the CME				
Revised MR				
DOE assessment				Date: 14/04/2020
Explanation is accepted. The applied constant was part of the validation and also supported with credible publicly available references.				
Conclusion <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			

CL ID	05	Section no.	E.1	Date: 14/04/2020
Description of CL				
Clarification is requested how the applied value of the f_{NRB} "Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass" is appropriate for calculation of the emission reductions where the current applied value in the CPA-DD and MR is no more valid at UN website.				
CME response				Date: 22/04/2020
<p>The value of the parameter applied in the CPA-DD is 0.92 which was duly validated during the CPA inclusion stage. The value is sourced from the list of the default f_{NRB} values published on UNFCCC website. Although the value was not renewed on UNFCCC website after its expiry, the CME provided recent evidences to the validation team of its validity including publications from the DNA such the latest Climate Change Action Plan 2018-2022, published by Kenyan DNA - Ministry of Environment and Forestry. The validation team also interviewed the DNA representative to confirm the applied value which is duly reported in the CPA validation report.</p> <p>Additionally, CME has also received an email confirmation from the Kenyan DNA of the validity of the applied value and their on-going discussion with Kampala RCC for renewal of the value. The copy of email is hereby submitted to the verification team.</p> <p>However, the CME has recalculated the f_{NRB}, the calculation worksheet is submitted to the DoE.</p>				
Documentation provided by the CME				
Email from DNA (Confirmation of f_{NRB} for Kenya) Recalculation of f_{NRB} -Worksheet "Kenya f_{NRB} - Tool 30.xlsx"				

DOE assessment	Date: 15/05/2020
<p>The ex-ante value of parameter $f_{NRB,y}$ or f_{NRB} was fixed based on the interview with the DNA at the time of CPA inclusion. However, as per the cross check at UN webpage for default f_{NRB} value https://cdm.unfccc.int/DNA/fNRB/index.html, the renewal request in form of "Acceptance form for the fraction of non-renewable biomass" submitted by the DNA of Republic of Kenya could not be traced. Thus, the Verification Team has assessed and identified that the applied value of $f_{NRB,y}$ or f_{NRB} was not updated at UNFCCC website subsequent to the CPA Validation as envisaged at time of CPA Inclusion into PoA. The input values and calculations were verified in line with "Tool 30: Calculation of the fraction of non-renewable biomass". Based on that, the Verification Team confirms that</p> <ul style="list-style-type: none"> The input values are traceable, appropriate and verified with the listed references under worksheet "Kenya f_{NRB} - Tool 30.xlsx"/XLS/ and thus in line with Tool 30 The applied value of $f_{NRB,y}$ or f_{NRB} is conservative (0.915) compared to the applied ex-ante value under CPA-DD (0.92) <p>The input values and the calculation method were verified and deemed as appropriate. The recalculated value 0.915 is conservative compared to the ex-ante value established under CPA-DD (0.92). Finding has been CLOSED.</p>	
Conclusion <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

CL ID	06	Section no.	E.1	Date: 09/06/2020
Description of CL				
Please clarify how practical this monitoring frequency given that some parameters are monitored annually, and verifications could also be annual (example: N_{HH} , N_{LI})				
CME response				Date: 22/04/2020
<p>The frequency described in the MR is the minimum frequency as indicated by the prefix "at least". There is no way through which this frequency can be fixed as it is tied to the frequency of verification cycles during the crediting period, which will vary depending on various dynamic factors like investor requirements, amount of ER accumulated and management priority among others.</p> <p>CME is aware that there may be situations where the minimum frequency, as reported in the CPA-DD, may not prove appropriate or adequate for the ER calculation. CME will make sure that such parameters are monitored on appropriate frequency to ensure the applicability and validity of the results as per the CDM requirements.</p>				
Documentation provided by the CME				
NA				
DOE assessment				Date: 11/06/2020
The explanation is accepted. For the applied monitoring period, the monitoring survey for the applied monitoring period was undertaken during January 2020 (4 th January 2020 – 12 th January 2020) for applied monitoring period 23/10/2019 to 31/12/2019 (both days included). CL has been CLOSED.				
Conclusion <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. CARs from this verification

CAR ID	01	Section no.	B.1	Date: 27/01/2020
Description of CAR				
The technical description of "KOKO Cooker" stove kit as reported under the section B.1 of MR is inconsistent with detailed specification as reported under Section A.3 of CPA-DD. Technologies/measures. Justification required.				
CME response				Date: 11/03/2020
The MR inadvertently reported the wrong fuel capacity of the cookstove. The actual capacity of the cookstove is 2.4 Litres as per the design specifications. The cookstove specification sheet is now submitted to the DoE. The MR is now corrected for the typographical error.				
Documentation provided by the CME				
Revised MR Technical specification sheet				
DOE assessment				Date: 22/03/2020
The MR is now updated with the appropriate technical details. During the onsite visit the technical specification of the stove was verified and found as appropriate. In addition, technical specification sheet of the KOKO cookers ^{TECH/} submitted by CME was assessed to be in line with revised MR and onsite observation.				

Conclusion <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

CAR ID	02	Section no.	F, E.3	Date: 27/01/2020
Description of CAR				
The Emission Reduction calculation worksheet is not submitted. The Verification Team will assess the ER calculations once the worksheet is submitted.				
CME response				Date: 19/02/2020
<i>ER worksheet submitted</i>				
Documentation provided by the CME				
<i>ER worksheet</i>				
DOE assessment				Date: 19/02/2020
Inconsistency in reporting of parameters				
The parameter N_{HH} and $N_{i,i}$ are inconsistently reported.				
Parameter	Value reported in MR and ER	Value reported in customer database		
N_{HH}	9252	9432		
$N_{i,i}$	631	198		
Inconsistency in reporting of customer names				
Inconsistency of data between survey data under tab "Household Monitoring Survey" and Customer Database needs to be addressed.				
Some of the examples: -				
Name of Customer in ER	Name in Customer database xls	Stove serial no in Customer database xls	Remark	
Pamela Awouro	PAMELA AWUORO	200082643	Spelling mistake in surname	
Everlyne Aooko	Not found	-	Customer missing	
Jeremiah Thandi	Mentioned as agent and not as customer	-	Inconsistent representation	
Sampling Plan:				
The submitted ER worksheet lacks the sampling plan, sample size calculation for the study, methodology of sampling and demonstration of reliability outcomes of sampling. Accordingly, the MR section E.3 needs to be updated with respect to the outcomes for below mentioned parameters				
Households				
<ul style="list-style-type: none"> Number of household cookstoves operating, N_{HH} Average Woody biomass consumption, $BC_{PJ,PP,y}$ Average Bioethanol consumption in household 				
SMEs (Kibandas)				
<ul style="list-style-type: none"> Number of SME cookstoves operating, $N_{i,i}$ Average Bioethanol Consumption in SMEs Average customer per SME 				
Inconsistency in calculations under ER worksheet				
Tab: Default Values				
<ul style="list-style-type: none"> Average Stove Year for all Households is not referenced or supported Average Stove Year for all Kibandas is not referenced or supported Density of Ethanol is stated as 0.79 and 0.81 tonnes/kL Supportive evidence for Total Installed KOKO points 				

Tab: ER Calculation		
<ul style="list-style-type: none"> Justification as to why Calculation of Avg ethanol consumption per SME, $\mu(\text{ethanol}, D)$ is not derived by directly multiplying by 12 to derive annual consumption from monthly verification 		
CME response		Date: 11/03/2020
<p>There were number of posting errors in the database like duplication of some records and typographical errors in some of the parameters of the records. This has now been corrected.</p> <p>It was also observed that the calculation formulae in the excel sheet were wrongly applied which resulted in wrong values (eg. Number of cookstoves, stove year calculation etc.). The formulae are now corrected and linked with the actual data.</p> <p>The annual bioethanol consumption value has also been conservatively derived by directly multiplying the monthly consumption value with a factor of 12.</p>		
Documentation provided by the CME		
DOE assessment		Date: 22/03/2020
Inconsistency in reporting of parameters		
The parameter N_{HH} and $N_{I,i}$ are now consistently reported.		
Parameter	Value reported in MR and ER	Value reported in customer database
N_{HH}	9421	9421
$N_{I,i}$	209	209
Inconsistency in reporting of customer names		
Consistency is now maintained.		
Sampling Plan:		
ER sheet is not updated with regards to sampling plan, sample size calculation for the study, methodology of sampling and demonstration of reliability outcomes of sampling. Accordingly, the MR section E.3 needs to be updated with respect to the outcomes for below mentioned parameters		
Inconsistency in calculations under ER worksheet		
Tab: Default Values		
Issue	Status of closure	
Average Stove Year for all Households is not referenced or supported	No update in the ER worksheet, direct value is entered.	
Average Stove Year for all Kibandas is not referenced or supported	No update in the ER worksheet, direct value is entered.	
Density of Ethanol is stated as 0.79 and 0.81 tonnes/kL	Still both values are applied. Still separate values are applied for same parameter.	
Supportive evidence for Total Installed KOKO points	Evidences submitted in form of the KOKO point database. The KOKO points now reduced from earlier reported number of 656 to 624. ER and MR are accordingly updated.	
Tab: ER Calculation		
Issue	Status of closure	
Justification as to why Calculation of Avg ethanol consumption per SME, $\mu(\text{ethanol}, D)$ is not derived by directly multiplying by 12 to derive annual consumption from monthly verification	Finding has been closed. Conservative and realistic calculation approach is now applied.	
CME response		Date: 24/03/2020
<ol style="list-style-type: none"> All the required information with respect to sampling plan is now included in the revised MR. The complete Sales database has been separately shared with the DoE in the previous submission which contains all the calculation related to population parameters. The summary sheet from the sales database is not replicated in the ER calculation sheet for reference. The density of bioethanol is now corrected to 0.789 at all places in ER calculation sheet which consistent with the registered CPA-DD. 		
Documentation provided by the CME		

Revised MR				
DOE assessment	Date: 14/04/2020			
<ul style="list-style-type: none"> The calculation pertaining to determination of sample size is needs to be integrated as part of ER worksheet. Furthermore, the initial submission and outcomes are inconsistent with the updated MR. Example the population of Kibanda and house hold stoves are inconsistent. This approach does not lead to transparency in the applied value. Total Stove year calculation is not acceptable as it is a manually inserted value in the ER calculation spreadsheet. How is stove year calculated 				
<table border="1"> <tr> <td>Tot Stove Year</td> </tr> <tr> <td>900.37</td> </tr> <tr> <td>24.06</td> </tr> </table>		Tot Stove Year	900.37	24.06
Tot Stove Year				
900.37				
24.06				
<p>This approach is not acceptable.</p> <ul style="list-style-type: none"> Uniform value is applied for the density of ethanol. Finding has been CLOSED. 				
CME response	Date: 19/04/2020			
<ul style="list-style-type: none"> The above inconsistencies are noted and corrected. The corrected ER calculation sheet is submitted. Updated MR is submitted 				
Documentation provided by the CME				
<ul style="list-style-type: none"> Sampling size worksheet is separately submitted The stove year calculation is submitted as part of Sampling size worksheet. Same values are directly applied to the ER worksheet. 				
DOE assessment	Date: 23/04/2020			
<ul style="list-style-type: none"> The sampling write-up under E.3 of MR is appropriately updated. Finding has been CLOSED. Total Stove year calculation is now transparently determined under ER worksheet, under Tab: "DB Summary". The input values are checked by the Verification from the submitted sales database. The uniform value of density 0.789 ton/kL is applied. This value confirms with the ER worksheet submitted along with the registered CPA-DD.(CPA-001). 				
Conclusion <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			

CAR ID	03	Section no.	E.2, E.3	Date: 27/01/2020-24/02/2020
Description of CAR				
<p>The unit of measurement of the parameter "$FR_{f,m}$" as mentioned under the section E.2 of MR (litres) is inconsistent with the section B.5.1 CPA-DD, which mentions the unit as 'Tonnes' (refer below table). The associated project emissions will also be verified once the calculation worksheet is submitted.</p> <p>Further below mentioned inconsistencies are identified between the section E.2 of MR and section B.5.1 CPA-DD as stated below:</p> <ul style="list-style-type: none"> N_{HH} – monitoring equipment is inconsistent in CPA-DD and MR $Q_{HH,Eth}$ and $Q_{SME,Eth}$ – The unit of values is inconsistent N_{KP} – Source of data is inconsistent HG_{SME} – Type of monitoring method is inconsistent $D_{f,m}$ – Source of data is inconsistent $FR_{f,m}$ – Unit of value is inconsistent. In addition, the parameter description under section E.3, F.1 is not consistent with section E.2 of MR. 				
CME response				Date: 11/03/2020
<p>The above inconsistencies are noted and corrected. The corrected ER calculation sheet is submitted. The notation of parameters is made consistent across MR.</p>				
Documentation provided by the CME				
<ul style="list-style-type: none"> MR ER worksheet 				
DOE assessment				Date: 22/03/2020
<p>The updates in the MR are assessed and deemed as appropriate. The typos are now found to be corrected across the entire MR. The ER worksheet is verified, and the verification Team confirms that consistency is now maintained. The Verification Team also confirms that the revised MR now represents the monitoring parameters in line with the units as expressed under the CPA-DD.</p> <p>Finding has been CLOSED.</p>				

Conclusion <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

CAR ID	04	Section no.	Various sections	27/01/2020
Description of CAR				
Below Documents are requested				
<ol style="list-style-type: none"> 1. Sales Database of disseminated CPA's (Refer Inclusion Criteria 2, 10) like name and identification of end-user, Geographical location / address, contact number (if available), Model of cookstoves being distributed, Date of distribution, serial ID number of cookstoves) 2. Declaration Statement by CPA implementer that the CPA is not part of any other project activity in line with the Inclusion Criteria 3 3. Stove specifications for models disseminated monitoring period in line with the Inclusion Criteria 4 4. Proof of Carbon Credits waiver by End user (Sample evidences) in line with the Inclusion Criteria 15 5. Stoves sales receipt (Sample evidences) 6. Digital Database (stove sold) and sample digital application form 7. Sample Warranty cards 8. Report from the concerned representative for the "Ethanol stove performance evaluation" 9. Registration of household in app-based software: screenshot of smart phone application (sample copy) from the KOKO Mobile App 10. Certificate of conformity of cookstoves to the national ethanol cookstoves standard of Kenya 11. Registration certificates for the CME samples selected for sample monitoring during this monitoring period. 12. Invoices/shipping details of the ethanol stoves used in the CPAs under verification for this monitoring period 13. Evidence of number of KOKO Points 14. Evidence for random number generator for sampling 15. Sampling Template for KOKO agents 16. Filled sample questioners utilized for the Usage Report 17. Usage Survey Report/ Analysis 18. Training records of the KOKO personnel on the following aspects <ul style="list-style-type: none"> o Introduction to project technologies o Overview of monitoring & sampling plan o understanding of survey questionnaire o Evaluation of user response and feedback o Assessing stove usage o Measurement instruments o Recording and archiving of data 				
CME response				Date: 22/03/2020
Documents are submitted.				
Documentation provided by the CME				
<ol style="list-style-type: none"> 1. Sales Database of disseminated CPA's (Refer Inclusion Criteria 2, 10) like name and identification of end-user, Geographical location / address, contact number (if available), Model of cookstoves being distributed, Date of distribution, serial ID number of cookstoves) -Customer Database 2. Declaration Statement by CPA implementer that the CPA is not part of any other project activity in line with the Inclusion Criteria 3- Technical Review Report dated 15/04/2019 3. Stove specifications for models disseminated monitoring period in line with the Inclusion Criteria 4 -Specifications for KOKO Cooker 4. Proof of Carbon Credits waiver by End user (Sample evidences) in line with the Inclusion Criteria 15 5. Stoves sales receipt (Sample evidences) -Customer Terms & Conditions 6. Digital Database (stove sold) and sample digital application form 7. Sample Warranty cards 8. Report from the concerned representative for the "Ethanol stove performance evaluation" - Specifications for KOKO Cooker 9. Registration of household in app-based software: screenshot of smart phone application (sample copy) from the KOKO Mobile App -Customer Journey 				

10. Certificate of conformity of cookstoves to the national ethanol cookstoves standard of Kenya - **Sample Certificate of Conformity**
11. Registration certificates for the CME samples selected for sample monitoring during this monitoring period.
12. Invoices/shipping details of the ethanol stoves used in the CPAs under verification for this monitoring period - **Sample Invoice-Shipping**
13. Distribution records for ethanol systems. Mass Balance of the ethanol replenished to the KOKO points and the ethanol consumption by the stoves disseminated under CPA-DD
14. Evidence for random number generator for sampling
15. Sampling Template for KOKO agents
16. Filled sample questioners utilized for the Usage Report
17. Usage Survey Report/ Analysis
18. Training records of the KOKO personnel on the following aspects – **KOKO Training Presentation**

DOE assessment

Date: 19/02/2020

Below inconsistencies/ additional information is requested

1. Sales Database of disseminated CPA's (Refer Inclusion Criteria 2, 10) like name and identification of end-user, Geographical location / address, contact number (if available), Model of cookstoves being distributed are missing in the CPA-Database. Finding is KEPT OPEN.
2. The Technical Review Report dated 15/04/2019 conforms that CME has verified that CPA is not part of any other project activity in line with the Inclusion Criteria 3. Finding is CLOSED.
3. Stove specification are received, verified and found consistent with the MR and CPA-DD. Please also refer closure of CAR 01. Finding is CLOSED.
4. Proof of Carbon Credits waiver by End user (Sample evidences) in line with the Inclusion Criteria 15 is verified based **on the –Customer Journey**. Finding is CLOSED.
5. Stoves sales receipt (Sample evidences) -Customer Terms & Conditions are verified to confirm the sample dispatch of stoves. Finding is CLOSED.
6. Digital Database (stove sold) and sample digital application form not submitted. Finding is KEPT OPEN.
7. Sample Warranty cards not submitted. Finding is KEPT OPEN.
8. Report from the concerned representative for the "Ethanol stove performance evaluation" - Specifications for KOKO Cooker is verified. It is compared to confirm the operational efficiency, capacity in kW thermal capacity. Please also refer closure of CAR 01. Finding is CLOSED.
9. Customer Journey is submitted. It clearly states the registration process. Sample cases are reviewed onsite. Finding has been CLOSED.
10. Sample Certificate of Conformity is received. The same is also confirmed with the technical specifications. Finding has been CLOSED.
11. Registration certificates for the CME samples selected for sample monitoring during this monitoring period not submitted. Finding is KEPT OPEN.
12. Sample invoices reviewed along with the ERP records. Finding has been CLOSED.
13. Distribution records for ethanol systems. Mass Balance of the ethanol replenished to the KOKO points and the ethanol consumption by the stoves disseminated under CPA-DD not submitted. Finding is KEPT OPEN.
14. Evidence for random number generator for sampling not submitted. Finding is KEPT OPEN.
15. Sampling Template for KOKO agents not submitted. Finding is KEPT OPEN.
16. Filled sample questioners utilized for the Usage Report not submitted. Finding is KEPT OPEN.
17. Usage Survey Report/ Analysis forms not submitted. Finding is KEPT OPEN.
18. Evidence of implementation of 656 KOKO Points. Finding is KEPT OPEN.

CME response

Date: 11/03/2020

Please find the point-wise response below:

1. The complete Sales Database of disseminated cookstoves under CPA-0001 is now submitted which includes Name and identification of end-user, Geographical location / address, contact number (on confidential basis only for DoE), Model of cookstoves being distributed, date of sale and associated KOKO point
6. Screenshot of digital record of sale of cookstove
7. The Warranty of cookstove is included in the terms & conditions of the cookstove purchase agreement for end-user
11. Registration certificates for the CME samples selected for sample monitoring during this

monitoring period not submitted 14. Evidence for random number generator for sampling now submitted 15. Questionnaire designed on Google Forms utilized for the Usage Report is submitted 16. Survey Response output sheet is submitted 17. Same as above 18. The database of all KOKO points is provided	
DOE assessment	Date: 13/03/2020
Pending Documents are stated as below:	
1. Not submitted. Please submit the same. Submitted records of user does not confirm with the eligibility criteria number 2 "A unique numbering system for cookstoves will be applied in each CPA, assigning a unique number to each cookstove and allowing to clearly identify for each cookstove to which CPA it belongs. Before handing over the cookstove to the end user, the complete information of the end user is electronically registered and stored on the cloud server and the cookstove serial number is assigned to the registered user" and eligibility criteria 10. Submitted stove does not state to whom the stove is sold out. Finding is kept OPEN 6. Sample screenshot is received. Finding is CLOSED. 7. Terms & Conditions & Warranty Claim (May 2019).pdf is submitted and reviewed in conjunction with "Customer Journey.pdf" and "6#Specifications for KOKO Cooker & Canister (2019).pdf". The Assessment Team confirms that the carbon credit is ceded by the user to the CME, the submitted technical specifications match with the description stated in the MR section B.1 and CPA-DD. Finding is CLOSED. 11.Registration certificates are not submitted. Please submit the same. Finding is kept OPEN 14. Random number generator is not submitted. Finding is kept OPEN. 15.Questionnaire designed on Google Forms utilized for the Usage Report is received. Finding is CLOSED. 16.Survey Response output sheet is submitted to the DOE. The same is compared with the survey results as stated in the ER worksheet and deemed as appropriate. Finding is CLOSED. 17.Submitted Google Form is not authenticated. Furthermore, excel version is requested to perform assessment and cross verification. Finding is kept OPEN. 18.The database of all KOKO points is pending. Finding is kept OPEN.	
CME response	Date: 11/05/2020
1. Invoices of customers (Registration certificates) are uploaded on the cloud server (Folder – Customer Invoices) for submission to the DoE. 5. The screenshot of random number generator has been submitted to the DoE through cloud submission (Folder – 3. Proof for Random Sampling) 6. The google form is uploaded on cloud (Folder – 3. Proof for Random Sampling). There is no calculation in the google form, it only captures the information. All calculations are performed in the ER calculation sheet. The parameter "BC _{PJ,PP,y} " is monitored by calculating difference between the number of total meals cooked and the number of meals cooked on project stove. 7. The attested logbook containing the End Mileage reading along with a clarification letter from Supply Chain head detailing the process of data collection is provided in Folder 6. Bioethanol Transportation.	
Documentation provided by the CME	
Customer Invoices Screenshots of cookstove users shortlisted through random sampling Google Form Output Sheet Attested Logbook and Clarification Letter from CME	
DOE assessment	Date: 12/05/2020
1. Based on the submitted records of user and the supportive invoices the eligibility criteria number 2, a unique numbering system for cookstoves applied in each CPA. A unique serial number assigned to each Ethanol cookstove (KOKO cooker) allowing to clearly identify each cookstove to CPA it belongs to and hence, could be traced, the same could also be verified during onsite physical visit by verification team. Based on the verification, it is confirmed that before handing over the cookstove to the end user, the complete information of the end user is electronically registered and stored on the cloud server and the cookstove serial number is assigned to the registered user" and eligibility criteria 10 requirement is found appropriately fulfilled. CAR point 1 is closed. 5. The evidence for random sampling i.e. random number generated is submitted via sample screen shot. This random number generator is later utilized by the KOKO Team to undertake sampling.	

The documents pertaining to seeking the permission of survey and the list of users to be surveyed is assessed as additional evidence. Finding is CLOSED.

6. The information transcribed from google form is made available to the DOE. The calculation of parameter "BC_{PJ,PP,y}" follows the acceptable logical norms. Finding is CLOSED.
7. The attested logbook is verified against the submitted ER worksheet and entries were found consistent with distances as sated to calculate the project emisisions under tab "PE_Trans", however,

Additional Issues from the submitted Clarification Letter and hence, CAR point is remain open as follows:

1. Application of Ethanol pricing. As per submitted document the Ethanol pricing is fluctuating from 95-70 KES/lit Then how the uniform price of the 95 KES/lit is justified? Document under consideration (Ethanol Price.pdf) and the ER worksheet tab: "HH Survey".
2. The purpose of sampling is to estimate the data within the acceptable limit of departure. Here below outcomes are observed for the parameter ethanol consumption for the applied monitoring period:

Sampling Survey which is utilized for calculation of emission reductions (lit)	Fuel Refills to KPs (Ltrs) utilized for Project emissions of fuel transport	% difference from the monitored value
186,438.6	135,083	= (186,438.6-135,083)/ 186,438.6 =28 % This departure is over estimation of CERs.

CME response

Date: 13/05/2020

1. We reduced prices from KES 95/L to KES 70/L on 7th February, as an experiment to understand the impact on customer acquisition rates. Note that all cooking fuel prices fluctuate from time to time. The survey was conducted prior to the revision of the prices, and there was no forward notice provided to customers that prices would be revised - so the price change did not influence the survey. The prices applicable at the time of the survey itself should be applicable for any survey-based calculation.
2. Cooking fuel is a basic need product which is relatively price inelastic. As per above, the purpose of the price drop experiment (which was successful) was to assist in new customer acquisition - to target new categories of potential customers who need major fuel cost savings in addition to improvements in their quality of life (clean air, modern cooking experience, 2-burner cooking etc). The price for the 70 days of the monitoring period was a constant KES 95/L, and the price applicable at the time of the survey was also KES 95/L.

The difference between the survey values and actual values probably relates to the difficulty customers have in estimating monthly expenditures - when asked how much they spend per month on KOKO's ethanol fuel, and whether that amount has changed in recent months. Many customers budget daily or weekly instead of monthly, because they are not salaried workers and instead earn money in the informal markets. The consumption per customer is also not fixed and tends to vary from month to month - eg school holidays when children are home vs eating at school, during tighter income periods customers will cook/eat fewer meals at home and the proportion of meals eaten at home vs eaten from small neighbourhood restaurants also varies with income.

DOE assessment

Date: 14/05/2020

1. The monitoring covers the assessment for the month October to December. The price was stable at KES 95/L so argument is accepted.
2. The KOKO Cookers are equipped with canisters which are equipped with special arrangements such that the bio ethanol can be filled only from the KOKO Points. This means that the results of the survey need to match with the fuel dispensed from the KOKO points. Here VT would like to emphasize that though the fuel dispensed from KOKO Points is not a monitoring parameter it is still a very strong corroborative evidence from the audit perspective. Practically this arrangement due to present inclusion of only one CPA; allows to directly evaluate the most accurate value of the bio-ethanol consumption. The Verification Team also accepts that the CME has followed appropriate process as stated below:

The CME has taken appropriate value of ethanol price for the surveys and calculated sufficient sampling size and subsequent surveys were undertaken to determine the bio ethanol consumption

Considering the above appropriate process, justification with respect to the difference between sale of ethanol from KOKO Points from KOKO Points compared to survey results is requested/ needed.

Furthermore, 28 % difference between KOKO Point Sale of ethanol and value achieved from survey results noticed during the applied monitoring period is on higher side. Mass Balance of the ethanol replenished to the KOKO points and the ethanol consumption by the stoves disseminated under CPA-DD) is still not justified. Response to Issue 2 is pending. Further response is requested.

CME response**Date:** 18/05/2020**2. Extract of the Letter to the Team Leader from KOKO Networks Limited**

Demographic Background of Nairobi - In recent times, Kenya has witnessed tremendous urban migration with a large rural population moving to capital city Nairobi and other urban areas (<https://earthobservatory.nasa.gov/images/88822/nairobi-swells-withurban-growth>). Nairobi has the largest share of in-migrants in Kenya with 31% of the people living in the capital were migrants in 2009. More than 50% of these migrants coming from rural Kenya have not complete their secondary education and hence employed in low skill jobs in Nairobi (Pg 12-13/22, http://migrationpolicycentre.eu/docs/2019_MPC_Annual_Conference/Cities-of-Migration-Oucho.pdf).

As most of these migrants have their extended family, relatives and friends residing outside of Nairobi, communication is of paramount importance and they prefer to spend extended time at their native place at least once a year bringing money, household items, or gifts for their loved ones. The frequency of visits to hometowns or village is usually cyclical over the course of the year, according to customarily observed holidays. As Kenyans predominantly follow the Christian religion, the most important festive season for Kenyan is the Christmas season. It shall be noted that there are 4 public holidays during this season – the Jamhuri Day (Kenyan Independence Day) on 12th December, Christmas on 25th December, Boxing Day on 26th December and New Year Day on 1st of January. As a result, most of the offices are closed by 20th December every year for Christmas holidays (<http://www.msafirimag.com/featured-article/holiday-season/>) and generally re-open after the first week of January.

Impact on ER Calculations It was observed that the monitoring period (23rd October 2019 – 31st December 2019), used for emission reduction calculation, was noticeably short as the programme has started its operations recently and was overlapping with the Christmas season witnessing a huge exodus of migrants from the city. As a result, there is a reasonable likelihood that many users were not able to operate their project cookstoves during this holiday period as they have moved to their village outside of Nairobi.

Hence, as a conservative approach, CME decided to adjust the operational period of all cookstoves (Stove years) during the monitoring period by introducing a non-operational days fraction out of total monitoring days (70) during this monitoring period. The total Stove years calculated for each user type are multiplied by the Stove Year correction Factor which is determined by deducting the number of non-operational days due to festive season from the total number of monitoring days and dividing it by the number of monitoring days (please refer to “DB Summary Sheet” in ER Calculation Workbook).

Appropriateness of the value for correction factor Formally employed Nairobi residents generally wait for the offices and factories to close before leaving for their village. However, in Kenya informal employment accounts for 84% of total jobs (per Kenya Bureau of Standards Economic Survey 2019) – most of which are self-employment and so can choose their holiday commencement dates and durations.

As a result, the generally observed habit of Nairobi residents is to migrate to take a month-long vacation to their village commencing mid-December through to mid-January. For people who live in more remote villages, the journey can take several days on overcrowded mini-buses.

Traffic in Nairobi is usually very crowded throughout the year, but during the 2nd half of December and 1st half of January, traffic is very light – there are significant reductions in commuter minibuses and it is very easy to travel across the city in 20 – 30 minutes, in journeys that would typically take 1-2 hours in other times of the year due to traffic and overcrowded roads.

Based on feedback from our KOKO Agents (who are the primary touchpoints for customers), our general observations and last 5 years' market research, technology development and Network operationalization experience of KOKO Networks in Nairobi, it was found appropriate to account a 15-day non-operational factor starting from 16th December 2019 to 31st December 2019. It shall also be noted that if we assume linear outmigration from Nairobi between the 1st holiday (Jamhuri Day on 12th December 2019) and the date of closure of offices (20th December 2019), the mid-point of out-migration would fall on 16th December 2019, which further corroborates our consideration. This is also logical as people have to make a trade-off between the loss of pay and the number of days for vacations and would ideally not like to forgo more than 3-4 days of income or wages from 20th December, the date when official holiday period starts. It shall also

be noted that the considered non-operational factor (15 days) is conservative since the out-movement of migrants does not fully stop the KOKO sales but partially impact it.

Hence, the total Stove years calculated for each user type during this monitoring period are multiplied by the Stove Year correction Factor (0.7857) which is determined by deducting the 15 days of festive season from the total number of monitoring days (70 days) and dividing it by the number of monitoring days (please refer to "DB Summary Sheet" in ER Calculation Workbook).

DOE assessment**Date:** 19/05/2020

2. The verification team critically examined the applicability and impact of the applied correction factor.

The application of discount factor by deducting 15 days of ethanol usage by the end users (households/SMEs).

Based on its host country competence, the Verification Team has raised issue regarding the holiday period (on account of Christmas) and migration of the population to countryside rendering the reduced or practically zero consumption of the bio-ethanol. In response to the raised issue, the CME has demonstrated and conservatively discounted associated effective monitoring days for period of 16 December 2020 to 31 December 2020. The CME has also submitted detailed report and submitted the same addressing the letter to the Verification Team Leader. Such provision of discounting was also assessed by the Verification Team based on its host country competence as well as publicly available references

- <https://www.agincourt.co.za/wp-content/uploads/2012/10/2011-Agincourt-Research-Briefing-Document.pdf> (page 16)
- <https://nairobi.news.nation.co.ke/hustle/nairobi-streets-remain-deserted-over-christmas> (date was 26 December)
- <https://www.kenyabuzz.com/lifestyle/family-fun-in-nairobi-this-christmas-2/> (date 17 Dec 2019)

Though this is neither a requirement in the applied methodology nor the requirement in the registered monitoring plan of the PoA-DD/CPA-DD, however, verification team has introduced additional test of appropriateness as per the accuracy limit of the result of bioethanol consumption arrived from the survey compared to actual supply to KOKO points

Total Quantity of Fuel Consumed during MP (Survey) (Lit)	Fuel Refills to KPs (Lit) utilized for Project emissions of fuel transport in the MP
146,488	135,083
% difference	8.44%

Based on above, it can be concluded that the difference in value/result of bioethanol consumption using sampling survey result compared with fuel Refills to KPs KOKO points (Lit) utilized for Project emissions of fuel transport in the MP are under the required precision limit of 10% and hence, overall check between sampling result is deemed as reasonable (opening and closing stock are assumed as comparable) and hence, acceptable.

Finding has been CLOSED.

Conclusion

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

CAR ID	05	Section no.	E.2, E.3	Date:	09/06/2020
Description of CAR					
The Verification Team identified that the MR is reporting the monitoring for only 05 parameters, however as per section B.5.2 of CPA-DD, 06 sampling assessment needs to be undertaken. Appropriate explanation/update of the MR is requested.					
CME response					Date: 12/06/2020
Section E.3 of MR reports the following 6 survey parameters in accordance with the requirements of the registered PoA-DD:					
<ul style="list-style-type: none"> • Number of project devices distributed in households operating during year y, N_{HH} • Number of project devices distributed in institutions operating during year y, $N_{I,i}$ • Average annual per-capita consumption of woody biomass in households in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ,PP,y}$ (The survey parameter $BC_{PJ,HH,y}$ mentioned in the PoA-DD differs from $BC_{PJ,PP,y}$ only by a constant factor of household size, $N_{p,HH}$ and hence replaced by $BC_{PJ,PP,y}$ in order to align it with the monitoring requirement of Table I.7.1.3 of PoA-DD) • Average annual bioethanol consumption per household during the operations of the project activity, $Q_{HH,Eth}$ 					

- Average annual bioethanol consumption per SME during the operations of the project activity, $Q_{SME, Eth}$
- Average number of persons equivalent served by the institution with full-day meals, $n_{p, I}$

All the above 6 parameters are also mentioned in the CPA-DD. However, apart from the above parameters, the CPA-DD (CPA-0001) inadvertently mentions one more survey parameter –

Average annual consumption of woody biomass per institution in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ, I, Y}$. This parameter is neither referenced in any other section of CPA-DD nor in any other registered document (PoA-DD, CPA-0001 ER calculation sheet). Moreover, the emission reduction calculation for SMEs is based on the quantity of bioethanol consumption which is based on the usage of the project cookstove and is already net of the total energy requirement and the baseline cookstove usage¹¹. Hence, this parameter is considered a redundant description and is not reported in the survey results. To correct this erroneous description of survey plan, the CPA-DD will be revised under the separate Post Registration Change.

Appropriate justification for the same is now provided in the MR on pg 18 (above the survey tables) and ER sheet is also revised to transparently describe the survey parameters.

Documentation provided by the CME

- MR
- ER worksheet

DOE assessment

Date: 13/06/2020

The CME has still not monitored the parameter "Average annual consumption of woody biomass per institution in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ, I, Y}$ ". How the provisions of the monitoring are met. The Verification Team will not be able to process request for issuance until the provisions of the sampling requirements are appropriately met.

CME response

Date: 15/06/2020

The CME requests the DOE to cite any UNFCCC references to the above statement and reservation for processing the request of issuance. The CME accepts that the parameter "Average annual consumption of woody biomass per institution in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ, I, Y}$ " is not part of sampling survey, however it is worthy to note that the parameter has no impact on the ER calculations. Below tabular representation is referenced by the CME as explanation:

Parameter	Is excluded parameter from sampling survey part of monitoring plan?	Can it be applied as corroborative evidence?	Has it impact on the emission reduction?	Will the exclusion cause impact on accuracy of ER calculation?
Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to SMEs consumption of woody biomass per institution in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, $BC_{PJ, I, Y}$	No	No	No	No

DOE assessment

Date: 16/06/2020

The Verification Team further compared between the two documents such as PoA-DD (section I.7.1. Data and parameters to be monitored) and CPA-DD (CPA-0001, section B.5.1. Data and parameters to be monitored) with special emphasis on consistency of monitoring parameters and found them consistent.

¹¹ The bioethanol consumption measurement does not assume full operations of cookstove and reflects net emission reductions not requiring measurement of baseline fuel consumption. In case of higher quantity of baseline fuel consumption, the bioethanol consumption would be lower and vice versa.

Based on above explanation from CME with regards to not including consumption of woody biomass per institution in the pre-project devices, the Verification Team noted that even if the provisions of para 228 a) of CDM project standard for programmes of activities Version 02.0 for temporarily unable to monitor any parameter in included CPA; still application of any type of conservative assumptions or discount factors will not impact ER calculation in any way. Thus, the exclusion is not material or it does not influence any impact (positive/ negative) on the accrual of emission reductions.

Though not openly accepted by CME, the Verification Team noted that there is inconsistency between the PoA-DD and the CPA-DD with regards to the listing/ identification of the sampling elements pertaining to monitoring parameters. It is noted that below parameters are appropriately monitored on sampling basis:

Parameter	Parameter monitored on sampling basiss as per provisions of PoA-DD section I.7.1.	Parameter monitored on sampling basiss as per provisions of CPA-DD section B.5.1.	Further action
Number of project devices in households of type i and batch j operating during year y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NA, monitored for applied verification
Number of project devices of type i and batch j operating in institutions during year y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NA, monitored for applied verification
Average annual consumption of woody biomass in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent in the households	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NA, monitored for applied verification
Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to SMEs (Kibandas)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NA, monitored for applied verification
Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NA, monitored for applied verification
The Average number of persons equivalent served by the SME with full-day meals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>The parameter is monitored during applied MP.</p> <p>However, FAR 01 is raised as the parameter is not apparent under the sampling plan / monitoring plan of the CPA-DD. A FAR is raised as the parameter does not have</p> <ul style="list-style-type: none"> any departure from monitoring

			plan or material impact or <ul style="list-style-type: none"> influence on the emission reductions.
Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to SMEs consumption of woody biomass per institution in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent, BCPJ,I,Y	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Redundant parameter with <ul style="list-style-type: none"> no departure from monitoring plan or material impact or influence on the emission reductions. FAR 01 is raised to maintain consistency between the PoADD and CPA-DD.

Thus, the non-inclusion of the consumption of woody biomass per institution in the pre-project devices under sampling survey will not impact the emission reductions. However, please refer FAR 01 raised during the current verification for addressing the typo inconsistency between the CPA-DD and PoA-DD.

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

Table 6. FARs from this verification

FAR ID	01	Section No.	CAR 05 of this report, CPA-DD (section B.5.2), PoA-DD (Section I.7.2)	Date: 19/05/2020
Description of FAR				
A consolidated FAR is issued and shall be checked during MP-2 Verification by the Verifying DOE: <ul style="list-style-type: none"> Typo correction – The CPA-DD applies 95/10 confidence level and precision however the stated Z value corresponding to 90/10 confidence level is as it is reproduced from the tool in the CPA-DD. Consistency in the reporting of the parameter descriptions throughout the PoA-DD and CPA-DD between sampling and monitoring section (the sampling parameters stated under PoA -DD section I.7.2. Sampling plan and CPA-DD B.5.2. Sampling plan are not consistent). 				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY
Conclusion Tick the appropriate checkbox				
<input checked="" type="checkbox"/> Additional action should be taken (finding remains open) <input type="checkbox"/> The finding is closed				

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.
1. Di		Date of commissioning of project device i		
<p>a) Measurement / Determination method (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> <p><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. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/PoA-DD/ /CPA-DD/ /AMS-I.E/ /DB/ /WC/ /MR/ /XLS/ /NAL/	<p><i>Description:</i></p> <p>Actual date of commissioning of project device is determined from the sales records. The date of installation of the bio-ethanol stove as stated in the DB worksheet was verified onsite by the Verification Team. The Verification Team has obtained access to the cloud-based data archiving system and verified the data of installation of bio-ethanol stove. The data of installation of household as well as Kibandas was compared with the digitally captured database by the Verification Team. The parameter “Date of commissioning of project device i” is further utilized to determine the</p> <p>The Verification Team identified that this database is part of the ER calculation sheet and Customer DB Worksheet.</p> <p><i>Verifier’s action:</i></p> <p>During the onsite visit, the verifier checked and subsequently requested for submission of the ER and the sales records.</p> <p><i>Conclusion:</i></p> <p>The closure of the checklist question is subjected to the appropriate submission of the supportive documents.</p>	CAR 02, CAR 04	OK
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</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</i></p>	/PoA-DD/ /CPA-DD/ /AMS-I.E/ /DB/ /WC/ /MR/ /XLS/	<p><i>Description:</i></p> <p>No instruments are utilized. No QA/ QC procedures are required as parameter is determined based on the Installation Database.</p> <p><i>Verifier’s action:</i></p> <p>During the onsite visit, the verifier checked and subsequently</p>	CAR 02, CAR 04	OK

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.	/VAL/	requested for submission of the ER and the sales records. <i>Conclusion:</i> The closure of the checklist question is subjected to the appropriate submission of the supportive documents.		
c) Correctness (VVS, §§ 346-350) 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.	/PoA-DD/ /CPA-DD/ /AMS-I.E. I.E/ /DB/ /WC/ /MR/ /XLS/ /VAL/	<input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, the correctness of parameter could not be determined at initial assessment. <i>Verifier's action:</i> The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc. <i>Conclusion:</i> Please refer CAR 02 and CAR 04.	CAR 02, CAR 04	OK
2. N_{HH}		Number of project devices in households of type i and batch j operating during year y		
a) Measurement / Determination method (VVS, §§ 346-350) 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.	/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/	<i>Description:</i> The parameter represents the number of operational household KOKO Cooker installations within the sampled household survey. The CME has applied 95/10 confidence / margin of error and performed the sampling on annual basis which is deemed as appropriate and in line with the monitoring plan of the registered CPA-DD. The CME has gathered the sampling data by following the cloud-based system i.e. Google Forms which has an auto generated time stamp confirming the authenticity of the sampling process. The enumerators have entered sampling data into the google forms directly, the reliability checks confirm that the sample represents the population and the outcome of the sample can be considered as reliable. In addition, the Verification Team has interviewed the enumerators and verified the records during onsite visit to confirm that the CME has provided appropriate training, verified the guidelines and google form-based monitoring	CAR 02, CAR 03, CAR 04, CL 06	OK

		<p>templates to ensure that the survey was followed as per appropriate procedures.</p> <p>Due to lack of submission of appropriate documentation, the Verification Team has raised CAR 02 and CAR 04. Since the parameter is not appropriately reported in the MR with respect to the registered monitoring plan, CAR 03 has been raised. The justification for appropriateness of monitoring frequency was raised as part of CL 06.</p> <p><i>Verifier's action:</i> During onsite visit, the verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerator and subsequently requested for submission of the training records, survey outcomes.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan. CAR was raised for missing documents and inconsistent reporting of parameter with respect to established monitoring plan, please refer CAR 02, CAR 03 and CAR 04 in this regard.</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the investigation of the number of household KOKO Cooker that are operational. The KOKO Cooker installations were sampled based on the randomly selected samples. The generation of random numbers was utilized by the CME and samples were selected across the entire household KOKO Cooker population. Thus, the results are based on the unbiased samples. No instruments are utilized. However, the quality checks of the sampling data confirm 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.</p> <p><i>Conclusion:</i></p>	<p>CAR 02, CAR 04, CL 06</p>	<p>OK</p>

		The closure of the checklist question is subjected to the appropriate submission of the supportive documents.		
c) Correctness (VVS, §§ 346-350) 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.	/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/	<input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, the correctness of parameter cannot be determined. <i>Verifier's action:</i> The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc. <i>Conclusion:</i> Please refer CL 06, CAR 02, CAR 03 and CAR 04.	CAR 02, CAR 04, CAR 03, CL 06	OK
3. BC_{PJ,PP,Y}		Average annual consumption of woody biomass in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent in the households		
a) Measurement / Determination method (VVS, §§ 346-350) 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.	/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/	<i>Description:</i> The parameter represents the average annual consumption of woody biomass in the pre-project devices during the project activity within the sampled household survey. The CME has applied 95/10 confidence / margin of error and performed the sampling on annual basis which is deemed as appropriate and in line with the monitoring plan of the registered CPA-DD. The CME has gathered the sampling data by following the cloud-based system i.e. Google Forms which has an auto generated time stamp confirming the authenticity of the sampling process. The enumerators have entered sampling data into the google forms directly, the reliability checks confirm that the sample represents the population and the outcome of the sample can be considered as reliable. In addition, the Verification Team has interviewed the enumerators and verified the records during onsite visit to confirm that the CME has provided appropriate training, verified the guidelines and google form-based monitoring templates to ensure that the survey was followed as per appropriate procedures.	CAR 02, CAR 04, CL 06	OK

		<p><i>Verifier's action:</i> During onsite visit, the verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerator and subsequently requested for submission of the training records, survey outcomes.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan. CARs were raised for missing documents with respect to established monitoring plan, please refer CAR 02, CAR 04, CL 06.</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the investigation of the number of household KOKO Cooker that are operational. The KOKO Cooker installations were sampled based on the randomly selected samples. The generation of random numbers was utilized by the CME and samples were selected across the entire household KOKO Cooker population. Thus, the results are based on the unbiased samples. No instruments are utilized. However, the quality checks of the sampling data confirm 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.</p> <p><i>Conclusion:</i> The closure of the checklist question is subjected to the appropriate submission of the supportive documents.</p>	<p>CAR 02, CAR 04, CL 06</p>	<p>OK</p>
<p>c) Correctness (VVS, §§ 346-350) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./</p>	<p><input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, the correctness of parameter cannot be determined.</p> <p><i>Verifier's action:</i> The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc.</p>	<p>CAR 02, CAR 04, CL 06</p>	<p>OK</p>

	/SAMPLE/	<p><i>Conclusion:</i> Please refer CL 06, CAR 02 and CAR 04.</p>		
4. Q_{HH,Eth} and Q_{SME,Eth}		Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs		
<p>a) Measurement / Determination method (VVS, §§ 346-350) 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>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs within the sampled household and CME surveys respectively. The CME has applied 95/10 confidence / margin of error and performed the sampling on annual basis which is deemed as appropriate and in line with the monitoring plan of the registered CPA-DD. The CME has gathered the sampling data by following the cloud-based system i.e. Google Forms which has an auto generated time stamp confirming the authenticity of the sampling process. The enumerators have entered sampling data into the google forms directly, the reliability checks confirm that the sample represents the population and the outcome of the sample can be considered as reliable.</p> <p>In addition, the Verification Team has interviewed the enumerators and verified the records during onsite visit to confirm that the CME has provided appropriate training, verified the guidelines and google form-based monitoring templates to ensure that the survey was followed as per appropriate procedures.</p> <p><i>Verifier's action:</i> During onsite visit, the verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerator and subsequently requested for submission of the training records, survey outcomes.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan. CAR was raised for missing documents with respect to established monitoring plan, please refer CAR 02, CAR 04</p>	<p>CAR 02, CAR 04</p>	<p>OK</p>

<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the investigation of average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs. The KOKO Cooker installations were sampled based on the randomly selected samples. The generation of random numbers was utilized by the CME and samples were selected across the entire household KOKO Cooker population. Thus, the results are based on the unbiased samples. No instruments are utilized. However, the quality checks of the sampling data confirm that the results are within the accuracy limits.</p> <p>Due to lack of submission of appropriate documentation, the Verification Team has raised CAR 02 and CAR 04.</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 closure of the checklist question is subjected to the appropriate submission of the supportive documents.</p>	<p>CAR 02, CAR 04</p>	<p>OK</p>
<p>c) Correctness (VVS, §§ 346-350) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, the correctness of parameter cannot be determined.</p> <p><i>Verifier's action:</i> The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc.</p> <p><i>Conclusion:</i> Please refer CAR 02 and CAR 04.</p>	<p>CAR 02, CAR 04</p>	<p>OK</p>
<p>5. N_{i,i}</p>		<p>Number of project devices of type i and batch j operating in institutions during year y</p>		
<p>a) Measurement / Determination method (VVS, §§ 346-350) <i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but</i></p>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/</p>	<p><i>Description:</i> The parameter represents the number of project devices of type i and batch j operating in institutions during year y within the sampled SME (Kibanda) survey. The CME has applied</p>	<p>CAR 02, CAR</p>	<p>OK</p>

<p>also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</p> <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>/SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p>95/10 confidence / margin of error and performed the sampling on annual basis which is deemed as appropriate and in line with the monitoring plan of the registered CPA-DD. The CME has gathered the sampling data by following the cloud-based system i.e. Google Forms which has an auto generated time stamp confirming the authenticity of the sampling process. The enumerators have entered sampling data into the google forms directly, the reliability checks confirm that the sample represents the population and the outcome of the sample can be considered as reliable.</p> <p>In addition, the Verification Team has interviewed the enumerators and verified the records during onsite visit to confirm that the CME has provided appropriate training, verified the guidelines and google form-based monitoring templates to ensure that the survey was followed as per appropriate procedures.</p> <p><i>Verifier's action:</i> During onsite visit, the verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerator and subsequently requested for submission of the training records, survey outcomes.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan. CARs have been raised for missing documents with respect to established monitoring plan, please refer CAR 02, CAR 04, CL 06.</p>	<p>04, CL 06</p>	
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</p> <p>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.</p> <p>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.</p>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the investigation of number of project devices of type i and batch j operating in institutions during year y. The KOKO Cooker installations were sampled based on the randomly selected samples. The generation of random numbers was utilized by the CME and samples were selected across the entire SME (Kibanda) KOKO Cooker population. Thus, the results are based on the unbiased samples. No instruments are utilized. However, the quality checks of the sampling data confirm that the results are within the accuracy limits.</p>	<p>CAR 02, CAR 04, CL 06</p>	<p>OK</p>

<p>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</p>		<p>Due to lack of submission of appropriate documentation, the Verification Team has raised CL 06, CAR 02 and CAR 04.</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 closure of the checklist question is subjected to the appropriate submission of the supportive documents.</p>		
<p>c) Correctness (VVS, §§ 346-350) <i>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.</i></p>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i> In absence of submission of supportive documents, the correctness of parameter cannot be determined.</p> <p><i>Verifier's action:</i> The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc.</p> <p><i>Conclusion:</i> Please refer CL 06, CAR 02 and CAR 04.</p>	<p>CAR 02, CAR 04, CL 06</p>	<p>OK</p>
<p>6. N_{KP,y}</p>		<p>Number of KOKO points operating during year y.</p>		
<p>a) Measurement / Determination method (VVS, §§ 346-350) <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)). 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.</i></p>	<p>/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/</p>	<p><i>Description:</i> The number of KOKO Points are determined based on the realtime database of the installation maintained for operational KOKO Points. This data was verified during the site visit interviews; however it is still not submitted to the Verification Team. Furthermore, the number of KOKO Points are inconsistently stated under the monitoring report. Appropriate corrections and submission of operational KOKO Points summary is requested. CAR 02 and CAR 04 are raised.</p> <p><i>Verifier's action:</i> The database of operational KOKO Points was verified onsite. Submission of data to support the input data was requested.</p> <p><i>Conclusion:</i></p>	<p>CAR 02, CAR 04</p>	<p>OK</p>

		The Determination method was found in line with the established monitoring plan. CAR was raised for missing documents with respect to established monitoring plan, please refer CAR 02, CAR 04.		
b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<i>Description:</i> The parameter represents the Number of KOKO points operating during year which was based on the installation logbook. No instruments are utilized. Data quality is considered as acceptable as the logbook is basis of the distribution of the ethanol distribution. Due to lack of submission of appropriate documentation, the Verification Team has raised CAR 02 and CAR 04. <i>Verifier's action:</i> The database of operational KOKO Points was verified onsite. Submission of data to support the input data was requested. <i>Conclusion:</i> The closure of the checklist question is subjected to the appropriate submission of the supportive documents.	CAR 02, CAR 04	OK
c) Correctness (VVS, §§ 346-350) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, the correctness of parameter cannot be determined. <i>Verifier's action:</i> The database of operational KOKO Points was verified onsite. Submission of data to support the input data was requested. <i>Conclusion:</i> Please refer CAR 02 and CAR 04.	CAR 02, CAR 04	OK
7. Np,I		Average daily consumption of bioethanol in a project cookstove (KOKO cooker) distributed to Households and SMEs		
a) Measurement / Determination method (VVS, §§ 346-350) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<i>Description:</i> The parameter was assessed through sampling survey randomly selected (simple random sampling) of SME/institutions (Kibandas) using KOKO bioethanol stoves (KOKO Cookers). The SMEs (Kibandas) selected were physically visited by Survey team appointed by the CPA Implementer as verified during cross-checking the information	FAR 01	FAR 01

<p><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. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p>by interviewing survey team and owner of Kibandas/SME. During visit, the existence and functionality of the appliance was confirmed through a visual assessment of the appliance with the unique ID clearly visible.</p> <p><i>Verifier's action:</i> The database of total implemented/installed KOKO cookers were verified with the results presented in the MR, corresponding ER calculation spreadsheet and further verified during onsite visit and interview with CME/CPA implementer and Bioethanol stove users i.e. Sampled SMEs/Kibandas.</p> <p>It was further noticed that the “The Average number of persons equivalent served by the SME with full-day meals” are not a dependent parameter by which ERs are being accrued, however, the accrual of emission reductions are based on baseline biomass consumption equivalent to the bio ethanol consumption by the SMEs. Since, “the Average number of persons equivalent served by the SME with full-day meals” is not part of monitoring parameter in the CPA-01 (under verification currently) but mentioned in the registered PoA-DD, and hence a CL and later FAR 01 was issued in this regard, which shall be checked by the varying DOE during subsequent MP (MP#2) verification.</p> <p><i>Conclusion:</i> The Determination of this parameter is found established and could be verified from the survey records and onsite interview with the SMEs/Kibanda, however, the value arrived is not being used for the calculation of emission reduction. However, please refer FAR 01</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</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>/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/</p>	<p><i>Description:</i> Please refer above</p> <p><i>Verifier's action:</i> NA</p> <p><i>Conclusion:</i> FAR 01</p>	FAR 01	FAR 01

Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.				
c) Correctness (VVS, §§ 346-350) 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.	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	Description: Please refer above Verifier's action: NA Conclusion: FAR 01	FAR 01	FAR 01
8. NCV_{i,biomass}				
a) Measurement / Determination method (VVS, §§ 346-350) 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/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	Description: The CME has opted for the third party i.e. Chemical & Industrial Consultancy Unit, Department of Chemistry, University of Nairobi for determination of the NCV of the biomass. The monitored value is 0.0241 TJ/tonne. The verification Team cross verified this value with the CPA-DD and found that value is in close agreement with the publicly available literature and ex-ante determined value. The MR states inconsistent value of this parameter, appropriate corrections and submission of NCV report is requested. Verifier's action: The NCV certificate was verified onsite. Submission of data to support the input data was requested. Conclusion: CAR 02 and CAR 04 were raised.	CAR 02, CAR 04	OK
b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) 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.	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	Description: The parameter represents the net calorific value of the fuel type "i" used in project scenario including non-renewable woody biomass, charcoal or renewable bio-ethanol based on the Third party NCV Test. The NCV Test confirms the specification and the details of calibration of the Bomb Calorimeter (calibrated on date 03/06/2019 valid until 02 June 2020) was utilized. Data quality is considered as acceptable as the logbook is basis of the distribution of the ethanol distribution. Due to lack of submission of appropriate documentation, the Verification Team has raised CAR 04.	CAR 04	OK

Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.		<p><i>Verifier's action:</i> The NCV certificate was verified onsite. Submission of data to support the input data was requested.</p> <p><i>Conclusion:</i> CAR 04 was raised. The closure of the checklist question is subjected to the appropriate submission of the supportive document.</p>		
<p>c) Correctness (VVS, §§ 346-350) 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.</p>	<p>/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/</p>	<p><input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> In absence of submission of supportive documents, correction of the ER worksheet, the correctness of parameter cannot be determined.</p> <p><i>Verifier's action:</i> The NCV certificate was verified onsite. Submission of data to support the input data was requested.</p> <p><i>Conclusion:</i> Please refer CAR 02 and CAR 04.</p>	<p>CAR 02, CAR 04</p>	OK
9. HG_{SME}		Total Quantity of thermal energy generated by the new renewable energy technology in the project in year y (TJ)		
<p>a) Measurement / Determination method (VVS, §§ 346-350) 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>	<p>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the total Quantity of thermal energy generated by the new renewable energy technology in the project in year y in terms of (TJ). The parameter is derived from the within the SME (Kibanda) KOKO Cooker population. The enumerator captures the bio-ethanol quantity consumed by the CME which is subsequently converted into the thermal units by multiplying with the calorific value which is determined by external lab (for this monitoring period). The CME has applied 95/10 confidence / margin of error and performed the sampling on annual basis which is deemed as appropriate and in line with the monitoring plan of the registered CPA-DD. The CME has gathered the sampling data by following the cloud-based system i.e. Google Forms which has an auto generated time stamp confirming the authenticity of the sampling process. The enumerators have entered sampling data into the google forms directly, the reliability checks confirm that the sample represents the population and the outcome of the sample can be considered as reliable.</p>	<p>CAR 02, CAR 04</p>	OK

		<p>In addition, the Verification Team has interviewed the enumerators and verified the records during onsite visit to confirm that the CME has provided appropriate training, verified the guidelines and google form-based monitoring templates to ensure that the survey was followed as per appropriate procedures.</p> <p><i>Verifier's action:</i> During onsite visit, the verification team verified the survey results, sampling methodology, the templates/ forms utilized for monitoring and interviewed the enumerator and subsequently requested for submission of the training records, survey outcomes.</p> <p><i>Conclusion:</i> The Determination method was found in line with the established monitoring plan. CAR was raised for missing documents with respect to established monitoring plan, please refer CAR 02, & CAR 04</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/</p>	<p><i>Description:</i> The parameter represents the investigation of total Quantity of thermal energy generated by the new renewable energy technology in the project in year y in terms of (TJ). The KOKO Cooker installations were sampled based on the randomly selected samples. The generation of random numbers was utilized by the CME and samples were selected across the entire household KOKO Cooker population. Thus, the results are based on the unbiased samples. No instruments are utilized. However, the quality checks of the sampling data confirm that the results are within the accuracy limits.</p> <p>Due to lack of submission of appropriate documentation, the Verification Team has raised CAR 02 and CAR 04.</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 closure of the checklist question is subjected to the appropriate submission of the supportive documents.</p>	CAR 02, CAR 04	OK

<p>c) Correctness (VVS, §§ 346-350) 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.</p>	/IM01/ /PoA-DD/ /CPA-DD/ /USAGE/ /SSQ/ /RC/ /MR/ /XLS/ /TRG/ /AMS-I.E./ /SAMPLE/	<div> <input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) </div> <p>Description: In absence of submission of supportive documents, the correctness of parameter cannot be determined.</p> <p>Verifier's action: The values given cannot be deemed as correct. During the onsite visit, the verifier checked and subsequently requested for submission of the ER and missing documents including the training, survey records etc.</p> <p>Conclusion: Please refer CAR 02 and CAR 04.</p>	CAR 02, CAR 04	OK
10. EC_{Pj,j,y}		Quantity of electricity consumed by the project electricity consumption source j in year y		
<p>a) Measurement / Determination method (VVS, §§ 346-350) 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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /MR/ /XLS/ /VAL/ /AMS-I.E./ /PS/ /VVS/	<p>Description: This parameter is not monitored during the applied monitoring period. Deviation is applied by the CME. Detailed assessment is provided under section E.3.2.1 "Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents" of this report.</p> <p>However, CL 03 has been raised.</p> <p>Verifier's action: The provisions of the Deviations were verified against the provisions stated under the CPA-DD and provisions of Project Standard, Appendix 2. Indicative list of post-registration changes that may be suitable for approval under the issuance track and "Temporary deviations from the registered monitoring plan" and associated stipulations as per para 228 (b) (ii) of PS</p> <p>Conclusion: Please refer CL 03.</p>	CL-03	OK
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) 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</p>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /MR/ /XLS/ /VAL/	<p>Description: No monitoring was undertaken. No instruments were involved. Deviation is applied.</p> <p>Verifier's action: Provisions of deviation were verified.</p>	CL-03	OK

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.	/AMS-I.E./ /PS/ /NVS/	Conclusion: QA/ QC measures are not applicable. This check list question is not applicable.		
c) Correctness (VVS, §§ 346-350) 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.	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /MR/ /XLS/ /VAL/ /AMS-I.E./ /PS/ /NVS/	<input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) Description: CL has been raised. Closure is subjected to appropriate closure of raised CL. Verifier's action: Provisions of deviation were verified. Conclusion: The accuracy and correctness of parameter is subjected to closure of raised findings.	CL-03	OK
11. D_{f,m}		Return trip distance between the origin and destination of freight transportation activity f in monitoring period m M		
a) Measurement / Determination method (VVS, §§ 346-350) 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/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	Description: The parameter "Return trip distance between the origin and destination of freight transportation activity f in monitoring period m". The CME maintains the logbook of the return distance trip which is monitored by the odometer. The return trip distances for the entire trip is captured by the vehicle. The Verification Team found inconsistency between the ER and MR regarding the value of the parameter. The logbook for the monitoring the return trip distance is requested. CAR 04 has been raised. Verifier's action: During onsite visit, the verification team verified the logbook for monitoring and interviewed the staff and requested formal submission of the supportive documentation Conclusion: The Determination method was found in line with the established monitoring plan. CAR was raised for missing	CAR 02, CAR 04	OK

		documents with respect to established monitoring plan, please refer CAR 02, CAR 04		
b) Accuracy and QA/QC Procedure (VVS, §§ 351-357) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<i>Description:</i> The data is captured from the odometer of vehicles into Record of Vehicle Operator or Record maintained by the Project Participant. The distance is further cross verified with the fuel consumption monitored onsite. The freight vehicle is not owned by the CME thus, calibration of freight vehicle is not in the control of CME. The value is billed based on the return distance as monitored by the freight operator. <i>Verifier's action:</i> During onsite visit, the verification team verified the logbook for monitoring and interviewed the staff and requested formal submission of the supportive documentation <i>Conclusion:</i> The QA/ QC requirements are met.	OK	OK
c) Correctness (VVS, §§ 346-350) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment) <i>Description:</i> The appropriateness of data is subjected to submission of the supportive data and consistency between the ER and MR. <i>Verifier's action:</i> During onsite visit, the verification team verified the logbook for monitoring and interviewed the staff and requested formal submission of the supportive documentation <i>Conclusion:</i> Closure of this finding is subjected to the closure of CAR 02 and CAR 04.	CAR 02, CAR 04	OK
12. FR_{f,m}		Total mass of freight transported in freight transportation activity f in monitoring period m		
a) Measurement / Determination method (VVS, §§ 346-350) <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>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/	<i>Description:</i> The Verification Team has requested submission of the supportive documentation for the monitoring of this parameter. As part of the submitted MR, this parameter is determined conservatively by assuming the full load of the vehicle.	CAR 04	OK

<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>	/VAL/	<p>Verifier's action: The measures to monitor the bio-ethanol and capacity of vehicle to carry the bio-ethanol was reviewed onsite visit.</p> <p>Conclusion: Further supportive documents are requested to ascertain the appropriateness of the parameter.</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 351-357)</p> <p>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.</p> <p>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.</p>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /MR/ /XLS/ /VAL/	<p>Description: No instruments were involved directly. Mileage Reading of vehicle operator were utilized. However, supportive documents are requested to ascertain the applied values.</p> <p>Verifier's action: Supportive documents are requested.</p> <p>Conclusion: QA/ QC measures are not applicable. This check list question is not directly applicable.</p>	CAR 04	OK
<p>c) Correctness (VVS, §§ 346-350)</p> <p>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</p> <p>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.</p> <p>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</p>	/PoA-DD/ /CPA-DD/ /AMS-I.E./ /DB/ /MR/ /XLS/ /VAL/	<p><input type="checkbox"/> Correct <input checked="" type="checkbox"/> Not correct (initial assessment)</p> <p>Description: In absence of data, the appropriateness and correctness could not be confirmed.</p> <p>Verifier's action: Supportive documents are requested.</p> <p>Conclusion: As per submitted MR, the parameter is determined based conservative assumptions in such a way that project emissions are maximized and emission reductions are therefore reduced. However, the appropriateness of this approach is subjected to submission of actual data. The Verification Team has requested to submit the actual data for this parameter.</p>	CAR 04	OK

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:

- - - - -

Document information

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