

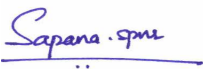


Verification and certification report form for CDM project activities

(Version 01.0)

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

VERIFICATION AND CERTIFICATION REPORT

Title of the project activity	Energy Efficient Cook Stoves for Siaya Communities, Kenya
Reference number of the project activity	GS 879
Version number of the verification and certification report	1.2
Completion date of the verification and certification report	19/05/2017
Monitoring period number and duration of this monitoring period	5 th Monitoring period Duration: 1 year from 01/01/2016 to 31/12/2016 both days included
Version number of monitoring report to which this report applies	3.0
Crediting period of the project activity corresponding to this monitoring period	First Crediting period
Project participant(s)	Myclimate Foundation and Tembea Youth Centre for Sustainable Development
Host Party	Kenya
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Sectoral scope: Energy demand (3.1) GS Methodology: Technologies and Practices to Displace Decentralized Thermal Energy Consumption
Estimated GHG emission reductions or net anthropogenic GHG removals for this monitoring period in the registered PDD	72,771 tCO ₂ e
Certified GHG emission reductions or net anthropogenic GHG removals for this monitoring period	87,353 tCO ₂ e
Name of DOE	Bureau Veritas Certification Holding SAS
Name, position and signature of the approver of the verification and certification report	 Sapana Pednekar – Global Quality Manager- Climate Change Operations

SECTION A. Executive summary

Bureau Veritas Certification has conducted the 5th periodic verification of the project “Energy Efficient Cook Stoves for Siaya Communities, Kenya”; Gold Standard registration reference number GS 879. The project is developed by MyClimate Foundation and Tembea Youth Centre for Sustainable Development, and is located in Siaya County, Kenya. The project is applying the Gold Standard methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)”.

The verification was based on:

- a) Requirements for Voluntary Offset Projects under the Gold Standard, including the applied Gold Standard methodology. The Gold Standard requirements are stipulated in the GS Requirements–version 2.2 and The Gold Standard Toolkit version 2.2.
- b) UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases:

- i) Desk review of the monitoring report, project design, the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;
- iii) Resolution of outstanding issues and the issuance of the final verification report and opinion.

The overall verification, from Contract Review to Verification Report and Opinion, was conducted using Bureau Veritas Certification internal procedures.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the validated and registered project design documents. Installed equipment (i.e. efficient cook stoves) being essential for generating emission reduction run reliably. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 87,353tCO₂e for the monitoring period.

Our opinion relates to the project’s GHG emissions and resulting GHG emission reductions reported; and related to the valid and registered project baseline, approved monitoring plan and its associated documents.

Reporting period:	01/01/2016 to 31/12/2016 (both days included)
Baseline emissions:	Integrated in ER calculation formula
Project emissions:	Integrated in ER calculation formula
Leakage emissions:	0 t CO ₂ equivalents
Emission Reductions:	87,353 t CO ₂ equivalents.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	IR	Onsongo	Samuel	Bureau Veritas Certification Holding (SAS)	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	IR	Chirchir	James	Bureau Veritas Certification Holding (SAS)
2.	Approver	IR	Pednekar	Sapana	Bureau Veritas Certification Holding (SAS)

SECTION C. Application of materiality**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	<i>Incorrect capture of the date of construction of each stove</i>	<i>High</i>	<i>Likelihood – more likely to occur due to manual data capture and transfer to excel based database. Impact - over estimation of the number of days the stove has been in use. Hence over estimation of ERs claimed</i>	<i>To randomly cross check a sample of receipts/Stove Purchase Agreement with the information in the database during onsite assessment.</i>
2.	<i>Over estimation of the stove usage rate</i>	<i>Medium</i>	<i>Likelihood – may occur due to manual transfer of survey information from handwritten questionnaires to excel sheets. However there exist internal quality controls. Impact – higher usage rate and hence over estimation of ERs claimed.</i>	<i>Randomly cross check a sample of hand-written survey records to determine whether the transfer of information was performed effectively. Visit a sample of survey respondents during on-site assessment.</i>
3.	<i>Data fudging (over estimation of number of stoves installed)</i>	<i>Medium</i>	<i>Likelihood – may occur due to manual data entry. However, controls such as financial audits exist to limit the likelihood that more stoves may be included than actually installed.</i>	<i>Randomly select and visit a sample of locations and users where there seems to be multiple stoves installed.</i>

			Impact – over estimation of ERs claimed.	
4	<i>Incorrect ERs calculation</i>	<i>Medium</i>	Likelihood – less likely to occur since the PP has used the same tools (i.e. spreadsheets), that have been verified in the 2 nd , 3 rd and 4 th cycles of verification. Impact – Over estimation of ERs claimed.	<i>Recalculate ERs using parameters reported by PP to determine if the reported ERs can be reproduced</i>

C.2. Consideration of materiality in conducting the verification

The DOE has applied the concept of materiality in this verification. Consideration of materiality began by determining the materiality threshold to be applied. The DOE used a threshold of 5% as provided for in the methodology (refer to page 34 of the methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011).

The DOE assessed the risks indicated in section C.1 above, based on sampling (refer to section D.4 below) and applying the materiality threshold of 5% as follows:

- Risk No.1 - dates from a random sample of 8 samples of receipts/ Stove Purchase Agreement was compared with the dates in the stove database. No discrepancies were observed. The data was accepted and no more samples were taken.

- Risk No.2 - a random sample of 8 hand-written survey records were compared with information in the survey database. Discrepancies were noted in 2 out of the 8 samples. The discrepancies were assessed on their effect in the value of the usage rate, and consequently the ERs calculations. It was noted that the discrepancies were not material i.e. they did not affect the usage rate and ERs calculations. The PP was however requested to make corrections on the discrepancies (refer to CAR 1 in appendix 4). The DOE further visited and had confirmation interviews the respondents of the 8 sampled questionnaires.

- Risk No.3 - was assessed together with GS Forward Action Request # 1 raised during the 4th verification cycle. The DOE filtered the sales database for data that seemed to be duplicated i.e. where multiple stoves either shared the same location (meaning multiple stoves installed in the same location), and where a single user seemed to have multiple stoves installed in the same location. This resulted in two sets of data: single-location multiple-stoves and single-user multiple-stoves. The DOE then randomly selected 8 samples from each of the sets, resulting in a total sample of 16. The DOE then visited 11 samples during the onsite assessment to determine whether or not the stoves were installed and are traceable. The DOE further visited 5 more samples where the PP has begun addressing the FAR raised. All these resulted in a total of 40 stoves being assessed. From the onsite assessment it was established that all the stoves were traceable. Out of the 40 stoves, 4 had been demolished and the DOE was shown the demolished stoves. No material error from omission or commission was observed. However, the following was noted in the onsite assessment:

- i. Users who seemed to have multiple entries in the sales database acquired extra stoves for their family members (in-laws and co-wives) and/or their neighbours. (Refer to Appendix 5 for Images of sample homesteads with multiple stoves)
- ii. Some coordinates in the sales database indicate stoves to be in the same location e.g. stove no. TEMBEA13/13612 and TEMBEA13/13614, however the stoves were found to be more than half a kilometre apart. The PP indicated that the coordinates were not recorded accurately by the artisans and are thus not used to locate stoves. The PP relies on the artisans' knowledge of the local area where they work.
- iii. It was noted that the unique identifier inscribed on stoves was not durable and was vulnerable to erasure whenever the user redecorates the kitchen. A clarification request was raised and has been closed (refer to CL 1 in Appendix 4).

- Risk No.4 - using the data and parameters reported by the PP, the DOE has been able to reproduce the same amount of ERs being claimed by the PP, by following the formulae provided in the methodology. The ER calculations by the PP are accepted.

SECTION D. Means of verification

D.1. Desk review

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 03 dated 19/05/2017 (refer to doc 1 in Appendix 3) and emission reduction calculation spreadsheet version 2 dated 18/05/2017 (refer to doc 2 in Appendix 3). Qualitative information comprises information on internal management controls, calculation procedures, and data transfer procedures, frequency of emissions reports; and review of calculations. The monitoring report version 1 submitted by the project participant has been made available to Gold Standard.

Information reviewed included documents and records supporting the number of ER calculations claimed by the project participants, as well as documents and records to support the assertions on the sustainable development indicators. These included:

Documents and records for ER calculations:

- Monitoring Report version 1 (ref to doc 8 in Appendix 3)
- Project Design Documents (refer to doc 6 in Appendix 3)
- Emission reduction (ER) Calculations spreadsheets (refer to doc 2 in Appendix 3)
- Project database (refer to doc 2 in Appendix 3)
- FAR raised during previous verification (refer to doc 4 in Appendix 3)
- Email communication between PP and GS (refer to doc 5 in Appendix 3)
- Monitoring and Usage survey report version 1 (refer to doc 3 in Appendix 3)
- Sales records (refer doc 18 in Appendix 3) and
- Financial Audit report (refer to doc 9 in Appendix 3)

Documents and records for sustainable development indicators:

- Monitoring Report version 1 (ref to doc 8 in Appendix 3)
- Employment records (ref to doc 10 in Appendix 3)
- Monitoring and usage survey version 1 (refer to doc 3 in Appendix 3)
- Project Design Documents with GS passport (refer to doc 6 in Appendix 3)
- Training records (refer to doc 11 in Appendix 3)
- Financial Audit report (refer to doc 9 in Appendix 3)

NOTE: Some of the above documents and records were reviewed off site, while others were reviewed onsite. The full list of the documents and records reviewed is provided in Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: 13/02/2017 to 16/02/2017				
No.	Activity performed on-site	Site location	Date	Team member
1.	Introduction meeting	Tembea Offices, Siaya	13/02/2017	Samuel Onsongo
2.	Field visit (Sites with multiple stoves installed)	Various locations in Siaya	13/02/2017	Samuel Onsongo
3.	Field visit (Owners with multiple stoves installed)	Various locations in Siaya	14/02/2017	Samuel Onsongo
4.	Field visit (Usage/Monitoring Survey participants)	Various locations in Siaya	15/02/2017	Samuel Onsongo
5.	Records review and closing meeting	Tembea Offices, Siaya	16/02/2017	Samuel Onsongo

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Orina	Job	Myclimate	13/02/2017	Project implementation, Monitoring data, QA/QC, reporting	Samuel Onsongo
2.	Omondi	Victor	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
3.	Adhiambo	Caroline	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
4.	Onyango	Mercelyne	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
5.	Apel	Carren	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
6.	Migeni	Zephaniah	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
7.	Ogutu	Judith	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
8.	Atieno	Lucy	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
9.	Owino	Emilly	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
10.	Otieno	Erick	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
11.	Ngesa	Nicholas	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
12.	Omondi	Joshua	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo
13.	Nyonje	Grace	TYCS	13/02/2017	Monitoring and Data collection	Samuel Onsongo

D.4. Sampling approach

a) The DOE employed acceptance sampling (as described in CDM Standard for Sampling and surveys for CDM project activities and programme of activities version 05.0) as a means of verification; where the project participant employed sampling to determine parameters/values reported. The following conditions were applied to determine the sample size taken by the DOE:

- (i) Acceptable quality level or the Level of Assurance (AQL). AQL = 1%
- (ii) Unacceptable quality level (UQL). UQL = 20%
- (iii) Producer's risk = 10%
- (iv) Consumer's risk = 20%

b) For all other sampling efforts, the DOE employed 90/30 confidence/precision, as the criteria for reliability of sampling efforts. The sample size was determined using the 90/30 rule and an expected value of 50%, since no specific value was being sought. These values were then input into an online tool ref <http://www.raosoft.com/samplesize.html> to determine the sample size. The table below show the sample sizes for both cases a) and b) above:

Activity verified	Minimum Sample size	Actual sample size taken
Monitoring and usage survey	8	8 questionnaires assessed and 8 respondents interviewed during onsite assessment (Out of which 6 respondents participated in both the usage and monitoring survey and 2 in the usage survey only)
Sales records	8	9 receipts/stove purchase agreement
Risk of data fudging (Single location with multiple stoves	16	16 locations visited as indicated in C.2 above (40 Stove users visited)

and Single user with multiple stoves)		
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The sampling method used to select samples for verification and visit was simple random sampling. Details of the samples above are provided in Appendix 5.

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
Compliance of the monitoring report with the monitoring report form	N/A	N/A	N/A
Compliance of the project implementation with the registered PDD	1	0	0
Post-registration changes	N/A	N/A	N/A
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	0	0	0
Compliance of monitoring activities with the registered monitoring plan	0	0	0
Compliance with the calibration frequency requirements for measuring instruments	N/A	N/A	N/A
Assessment of data and calculation of emission reductions or net removals	1	1	0
Others (Action on FAR)	1	0	0
Total	3	1	0

SECTION E. Verification findings

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

Means of verification	Desk review of monitoring report
Findings	This section is not applicable, since the use of CDM forms is not a requirement of Gold Standard
Conclusion	The PP has used monitoring report template similar to previous monitoring cycles. In the report, the PP has provided all the information as required by Gold Standard.

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

The DOE raised a clarification request (refer CL 3 in Appendix 4) regarding how the PP has addressed the FAR raised during the 4th periodic verification. The DOE has established that the PP requested to address the FAR over a period and complete the correction by the 6th periodic verification, as seen in the email correspondence with GS (ref doc 5 in Appendix 3). The FAR is still open. The DOE confirms that the PP has started to implement the action proposed in the FAR. This was confirmed during onsite assessment by visiting 5 samples where corrections have been implemented (refer to Appendix 5).

E.3. Compliance of the project implementation with the registered project design document

Means of verification	Document review: Monitoring report version 1.0 (ref doc 8 Appendix 3), version 2 and version 3 (ref doc 1 Appendix 3), registered PDD (ref doc 6 Appendix 3), employment records (ref to doc 10 in Appendix 3), Financial audit report (refer to doc 9 in Appendix 3), Site visit: Interviews with PP's representative, monitoring team and stove users, and Observation of stove technology implemented
Findings	A clarification request and a Corrective action request were raised (refer to CL 1 and CAR 1 respectively in Appendix 4). They have been adequately responded to and are closed.
Conclusion	The DOE has performed a site visit and found that implementation and operation of the project activity has been in accordance with the description contained in the registered PDD. The PP has continued to install energy efficient cook stoves in

	household in Siaya County in Kenya. The stove technology installed is a fixed biomass rocket stove designed for burning woody biomass and consists of two cooking units that can be fired separately. No changes to the project design were identified during this verification. The organizational structure for project monitoring remains the same as in the registered PDD and previous monitoring periods. The project did not employ any new employees in this monitoring period. All staff involved in monitoring are trained as indicated in the previous monitoring reports. Corresponding to paragraph 385 of VVS version 09.0, the DOE can confirm that the implementation and operation of the Project is consistent with the registered PDD.
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E.4. Post-registration changes**E.4.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline**

Not applicable

E.4.2. Corrections

Not applicable

E.4.3. Changes to the start date of the crediting period

Not applicable

E.4.4. Inclusion of a monitoring plan to a registered project activity

Not applicable

E.4.5. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

Not applicable

E.4.6. Changes to the project design of a registered project activity

Not applicable

E.4.7. Types of changes specific to afforestation and reforestation project activities

Not applicable

E.5. Compliance of monitoring plan with the monitoring methodology including applicable tool and standardized baseline

Means of verification	Document review The DOE reviewed the following documents: Monitoring report version 1.0 (ref doc 8 Appendix 3), version 2 and version 3 (ref doc 1 Appendix 3), registered PDD (ref doc 6 Appendix 3), Monitoring manual (ref doc 7 Appendix 3), Applied methodology (ref doc 14 Appendix 3), to establish whether the monitoring plan was in line with the monitoring methodology.
Findings	Compliant
Conclusion	The DOE has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures and confirms compliant with the applied methodology. Corresponding to the paragraph 388 of VVS version 09.0, the DOE can confirm that the implemented monitoring plan is in accordance with the approved methodology (Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011) applied by the Project.

E.6. Compliance of monitoring activities with the registered monitoring plan**E.6.1. Data and parameters fixed ex ante or at renewal of crediting period**

Means of verification	Document review For the parameters determined and fixed ex ante, the DOE has crosschecked the values as reported in the monitoring report with values provided in the registered PDD and IPCC default values. The DOE also assessed the application of the values in calculation of emission reductions.
Findings	Values have been reported and applied correctly
Conclusion	The following parameters were determined and fixed ex ante: - EF_{b,CO_2} - CO₂ emission factor arising from use of wood-fuel in baseline scenario (1.7472 tCO₂/t wood) - $EF_{b,non-CO_2}$ - Non-CO₂ emission factor arising from use of wood-fuel in baseline scenario (0.1356 tCO₂eq/t wood from 01.01.2013 on). The PP used the GWP for CH₄ & N₂O, valid from 01/01/2013 (ref EB69 annex 3). - EF_{p,CO_2} - CO₂ emission factor arising from use of wood-fuel in project scenario (1.7472 tCO₂/t wood (=112.0 tCO₂/TJ * 0.0156 TJ/ t)). - $EF_{p,non-CO_2}$ - Non-CO₂ emission factor arising from use of wood-fuel in project scenario (0.1356 tCO₂eq/t wood from 01.01.2013 on). The PP used the GWP for CH₄ & N₂O, valid from 01/01/2013 (ref EB69 annex 3). - $f_{NRB,i,y}$ - Non-renewability status of woody biomass fuel in scenario I during year y (92%). The PP has updated the f_{NRB} with the official value approved by the DNA of Kenya (ref link). This was verified in the previous verification cycle (ref /2/) - $P_{b,y}$ - Quantity of woody biomass consumed in the baseline scenario in year y and per day in year y (2.6645 t wood/year and 0.0073 t wood/day) - $P_{p,y}$ - Quantity of woody biomass consumed in the project scenario in year y and per day in year y (1.3505 t wood/year and 0.0036t wood/day) The DOE confirms that the parameters have been correctly reported and applied in emission reductions calculation

E.6.2. Data and parameters monitored**E.6.2.1. Data and parameters monitored for GHG emission reductions calculation**

Means of verification	Parameter 1 – Project technologies credited (units) MoV: The parameter was verified by reviewing the Financial Audit Report (ref doc 9 in Appendix 3), Previous monitoring report (ref doc 12 in Appendix 3, Previous verification report (ref doc 13 in Appendix 3). Further, during site visit a random samples of 8 stoves from the sales database (for the period January – December 2016) was selected and the information crosschecked with the corresponding receipts/Stove Purchase Agreements. The sampling approach is described in section D.4. above. A clarification request was raised and adequately responded to (ref CL 2). No discrepancies have been observed. The DOE considers that the PP has monitored and reported the parameter as required. The following values are reported: <table> <tr> <th>Year</th><th>number of stoves</th></tr> <tr> <td>2010</td><td>324</td></tr> <tr> <td>2011</td><td>4,662</td></tr> <tr> <td>2012</td><td>5,139</td></tr> <tr> <td>2013</td><td>5,187</td></tr> <tr> <td>2014</td><td>6,840</td></tr> <tr> <td>2015</td><td>14,186</td></tr> <tr> <td>2016</td><td>7,818</td></tr> <tr> <td>TOTAL</td><td>44,156</td></tr> </table> Parameter 2 – $P_{p,y}$ (Quantity of woody biomass consumed in the project scenario in year y and per day in year y) MoV: The DOE has reviewed the registered PDD and monitoring methodology to determine the monitoring and reporting requirement of the parameter. The	Year	number of stoves	2010	324	2011	4,662	2012	5,139	2013	5,187	2014	6,840	2015	14,186	2016	7,818	TOTAL	44,156
Year	number of stoves																		
2010	324																		
2011	4,662																		
2012	5,139																		
2013	5,187																		
2014	6,840																		
2015	14,186																		
2016	7,818																		
TOTAL	44,156																		

	parameter is required to be updated every two years through Performance Field Tests (PFT). A PFT was done in 2015 and the results were reviewed and accepted in the 4th verification cycle. No PFT was required for this monitoring period, since the results for the PFT are still valid. The DOE has assessed the application of the value reported (i.e. 1.314 t wood/year and 0.0036t wood/day) in emission reductions calculation and confirms that it has been applied correctly. Parameter 3 – U_{py} (Usage rate in project scenario during year y) MoV: According to the registered PDD and the methodology the parameter is monitored annually through usage survey. The PP has carried out a usage survey as required (ref monitoring and usage report doc 3 in Appendix 3). The DOE confirms that the PP has implemented the sampling plan described in the Monitoring manual (ref doc 7 Appendix 3). The transfer of survey information and data analysis has been reviewed (refer to assessment of risk no. 2 in section C.2. above). From the review the DOE considers that the result of the usage survey (a cumulative usage rate of 92.9%) is acceptable and the PP has correctly monitored and applied the parameter in emission reductions calculation. Parameter 5 – $N_{p,y}$ (Project technologies days) MoV: The parameter was verified by randomly selecting 8 samples from the sales database and comparing the information with the corresponding receipts/Stove Purchase Agreements during site visit (refer to assessment of Risk No. 1 in section C.2 above). The sampling approach is described in section D.4. above. The DOE considers that the PP has monitored and reported the parameter as required. The following value (15,137,132 days) is reported and applied correctly in emission reductions calculation. Parameter 6 – $LE_{p,y}$ (Leakage in project scenario p during year y) MoV: The DOE confirms that the PP has monitored the parameter as required through a monitoring survey. The monitoring survey was carried out together with the usage survey. The DOE has also assessed the monitoring survey together with the usage survey (refer to DOE's review on parameter 3 above). The DOE considers that the PP has monitored and reported the parameter as required. A value of zero (0) leakage has been applied in emission reduction. Parameter 7 – Similar cook stove project activities in the project area MoV: The DOE has reviewed project listing in the registries provided i.e. Gold Standard registry, UNEP Risoe CDM Pipeline. The DOE has also looked at the CMD registry and confirm that no project covering the same geographical area and implementing the same technology has been registered.
Findings	Compliant
Conclusion	Corresponding to the paragraph 392 of VVS version 09.0, the DOE can confirm that: - The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. - All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.

E.6.2.2. Data and parameters monitored for Sustainable Development Indicators (SDIs)

Means of verification	<u>SDI 1: Air quality</u> Parameter monitored is the number of positive comments from stove users Target: 100% (as in the registered PDD) MoV: The DOE reviewed the monitoring and usage survey report (ref doc 3 Appendix 3) and monitoring and usage survey data (ref doc 15 Appendix 3); and further held interviews with 6 stove users who participated in the Usage and Monitoring survey, during site visit (refer to section D.4 above). The result shows the parameter achieved 100%. The DOE considers that the SDI has a positive score in this monitoring period. <u>SDI 2: Quality of Employment</u>
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	Parameter monitored: Number of artisans trained and active over time Target: 60 artisans (as in the registered PDD) MoV: The DOE carried out a site visit and reviewed training records including attendance lists and training reports (ref. doc 10 in Appendix 3). The results indicate the PP (168 artisans trained) was confirmed and has surpassed the target in the PDD. The DOE considers the SDI to have a positive score in this monitoring period. <u>SDI 3: Livelihood of the poor</u> Parameter monitored: Time and money savings per year due to reduced fuel consumption, and Number of people in savings and loaning groups. Target: 215 hrs less per year spent on collecting firewood, and/or KES 5486 less per year spent on firewood and 300 CSL groups established with 4,500 persons MoV: The DOE reviewed the monitoring and usage survey report (ref doc 3 Appendix 3) monitoring and usage survey data (ref doc 4 Appendix 3), CLS database (refer to doc 16 in Appendix 3) and corresponding summary sheet (refer to doc 17 in Appendix 3). The DOE held interviews with 8 stove users, who participated in the Usage and Monitoring survey, during site visit. From this assessment the DOE confirms that PP reported figures (i.e. 8,189 KSh as amount of money saved and 273 hours' time saved per year respectively, and 44,315 people in the savings and loaning scheme). The DOE considers that this SDI has a positive score in this monitoring period. <u>SDI 4: Access to affordable and clean energy services</u> Parameter monitored: Number of households using efficient cook stoves Target: 41,700 cook stoves are constructed by the end of the monitoring period MoV: Review of sales records (ref to assessment of parameter 4 in section E.6.2.1 above). The results indicate that cumulatively 44,156 stove have been implemented since the start of the project. From the results, the PP had surpassed the target. The DOE considers that indicator has a positive score in this monitoring period. <u>SDI 5: Human/institutional capacity</u> Parameter monitored: Number of women trained and Number of people reached through awareness creation on efficient cook stoves and climate change. Target: 3,000 trained in savings and loan scheme, 9 animators trained, 4500 people reached MoV: The DOE carried out a site visit and reviewed records from training including attendance lists, list of awareness creation activities and a sample of two reports for the activities (ref doc 11 in Appendix 3). In this monitoring period the PP achieved the following figures which have been verified: 32,863 women trained for saving and loaning groups, 59 women animators trained, and 3,094 people reached through awareness creation on efficient cook stoves and climate change. The DOE considers that this SDI has a positive score in this monitoring period. <u>SDI 6: Quantitative employment and income generation</u> Parameter monitored: Number of people receiving income from project activity Target: 75 persons (15 staff and 60 artisans) MoV: The DOE reviewed list of people receiving income from the project activity and also held interviews with the PP's representative. It was indicated that the number of staff employed by the project activity was 17 (same as in the 4th monitoring period); 49 artisans and 82 animators receive income from the project activity. The DOE considers that this SDI has a positive score in this monitoring period.
Findings	Compliant
Conclusion	Corresponding to the paragraph 392 of VVS version 09.0, the DOE can confirm that: - The monitoring has been carried out in accordance with the monitoring plan

	contained in the registered PDD. - All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.
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E.6.3. Implementation of sampling plan

Means of verification	Document review The following documents were reviewed: monitoring manual (ref doc 7 Appendix 3), monitoring and usage survey report (ref doc 3 Appendix 3) and monitoring and usage survey data (ref doc 15 Appendix 3). The DOE further assessed the survey procedures, sampling method, data entry and analysis. The DOE applied acceptance sampling as described in section D.4 above to verify the PP's implementation of the sampling plan described in the registered PDD and monitoring manual. Site visit Interviews with PP's representative, monitoring team (including enumerators) and a sample of respondents to the monitoring and usage survey were held during site visit.
Findings	Compliant
Conclusion	The DOE confirms that, for the parameter monitored and determined through sampling (refer to section E.6.2 above), the sampling efforts and surveys comply with the validated sampling plan in the registered PDD and also in the monitoring manual.

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Document review: The following documents were reviewed: Monitoring report (refer to doc 1 in Appendix 3), registered PDD (refer to doc 6 in Appendix 3), previous verification report (refer to doc 13 in Appendix 3)
Findings	The project activity does not involve direct measurement of parameters using measuring equipment. Measuring equipment are when carrying out Field Performance Test (FTs). In 2015, a PFT was carried out and the results were verified and accepted. The results are still valid for this monitoring period.
Conclusion	No calibration activities were required for this monitoring period.

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document review The following documents were reviewed: applied methodology (ref doc 14 Appendix 3), registered PDD (ref doc 6 Appendix 3), monitoring report (ref doc 1 Appendix 3) and ER calculation spreadsheet (ref doc 2 Appendix 3)
Findings	Compliant
Conclusion	Baseline emissions calculations are integrated in emissions reduction calculation formula

E.8.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	Document review The following document were reviewed: applied methodology (ref doc 14 Appendix 3), registered PDD (ref doc 6 Appendix 3), monitoring report (ref doc 1 Appendix 3) and ER calculation spreadsheet (ref doc 2 Appendix 3)
Findings	Compliant
Conclusion	Project emissions calculations are integrated in emissions reduction calculation formula

E.8.3. Calculation of leakage GHG emissions

Means of verification	Document review The following document were reviewed: applied methodology (ref doc 14 Appendix
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	3), registered PDD (ref doc 6 Appendix 3), monitoring report (ref doc 1 Appendix 3) and ER calculation spreadsheet (ref doc 2 Appendix 3) and monitoring and usage survey report (ref doc 3 Appendix 3)
Findings	Compliant
Conclusion	No leakage

E.8.4. Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Document review The review involved crosschecking the values of the parameters used in ER calculations with the referenced sources. The following document were reviewed: applied methodology (ref doc 14 Appendix 3), registered PDD (ref doc 6 Appendix 3), monitoring report (ref doc 1 Appendix 3), ER calculation spreadsheet (ref doc 2 Appendix 3), Previous verification report (ref doc 13 Appendix 3)																								
Findings	Compliant																								
Conclusion	The details for emission reductions calculation during the monitoring period from 01/01/2016 to 31/12/2016 are provided in the ER calculation spreadsheet (ref doc 2 Appendix 3). The PP calculated emission reductions by first determining the number of project technology days ($\sum_{b,y} N_{p,y}$),usage rate,fuel savings in t wood/day-stove, converted the emission factors EF_{fuel,CO_2} and $EF_{fuel, nonCO_2}$ into appropriate units i.e. tCO₂e/t wood and then took a product of all these values including the $f_{NRB,b,y}$ and finally subtracting leakage as follows: $ERY = (\sum_y N_{p,y}) * U_{p,y} * P_y * (f_{NRB,b,y} * EF_{fuel,CO_2} + EF_{fuel, nonCO_2}) - \sum LE_Y$ Where: <table><tr><th>Parameter</th><th>Value</th><th>Source of value</th></tr><tr><td>$\sum_y N_{PY}$</td><td>Project Technology Days = 14,574,084 days in year 2016</td><td>Tembea Project Database 2016</td></tr><tr><td>U_{PY}</td><td>Cumulative Usage Rate = 0.929</td><td>Usage/Monitoring Survey 2016</td></tr><tr><td>P_Y</td><td>Fuel Savings = 0.0037 t wood/day-stove</td><td>calculated from PFT 2015</td></tr><tr><td>$f_{NRB,b,y}$</td><td>Non-renewable biomass fraction = 92.00%</td><td>CDM default value for Kenya</td></tr><tr><td>EF_{wood, CO_2}</td><td>Emission Factor = 1.7472 tCO₂e/t wood</td><td>IPCC 2006 default</td></tr><tr><td>$EF_{wood, nonCO_2}$</td><td>Emission Factor = 0.1356 tCO₂e/t wood</td><td>IPCC 2006 default (CH₄ + N₂O)</td></tr><tr><td>$\sum LE_Y$</td><td>Leakage LE = 0 tCO₂e/t year</td><td>Assumption (monitoring survey)</td></tr></table> The DOE confirms that the approach is the same as provided in the methodology i.e. $ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,y} * NCV_{b, fuel} * (f_{NRB,b,y} * EF_{fuel,CO_2} + EF_{fuel,nonCO_2})) - \sum LE_{p,y}$ The DOE confirms: (a) All data was available for this monitoring period (b) Crosschecks have been done on the values used in ER calculation with their respective sources of data (refer to section E.6.2 above). (c) Appropriate methods and formulae for calculating GHG emission reductions have been followed; (d) Assumptions, emission factors and default values that have been applied in the calculations have been justified; (e) A pro-rata approach was correctly applied to the calculations of GHG emission reductions; (f) The first day in which CERs are being claimed has been correctly specified.	Parameter	Value	Source of value	$\sum_y N_{PY}$	Project Technology Days = 14,574,084 days in year 2016	Tembea Project Database 2016	U_{PY}	Cumulative Usage Rate = 0.929	Usage/Monitoring Survey 2016	P_Y	Fuel Savings = 0.0037 t wood/day-stove	calculated from PFT 2015	$f_{NRB,b,y}$	Non-renewable biomass fraction = 92.00%	CDM default value for Kenya	EF_{wood, CO_2}	Emission Factor = 1.7472 tCO ₂ e/t wood	IPCC 2006 default	$EF_{wood, nonCO_2}$	Emission Factor = 0.1356 tCO ₂ e/t wood	IPCC 2006 default (CH ₄ + N ₂ O)	$\sum LE_Y$	Leakage LE = 0 tCO ₂ e/t year	Assumption (monitoring survey)
Parameter	Value	Source of value																							
$\sum_y N_{PY}$	Project Technology Days = 14,574,084 days in year 2016	Tembea Project Database 2016																							
U_{PY}	Cumulative Usage Rate = 0.929	Usage/Monitoring Survey 2016																							
P_Y	Fuel Savings = 0.0037 t wood/day-stove	calculated from PFT 2015																							
$f_{NRB,b,y}$	Non-renewable biomass fraction = 92.00%	CDM default value for Kenya																							
EF_{wood, CO_2}	Emission Factor = 1.7472 tCO ₂ e/t wood	IPCC 2006 default																							
$EF_{wood, nonCO_2}$	Emission Factor = 0.1356 tCO ₂ e/t wood	IPCC 2006 default (CH ₄ + N ₂ O)																							
$\sum LE_Y$	Leakage LE = 0 tCO ₂ e/t year	Assumption (monitoring survey)																							

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Document review
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	The following document were reviewed: registered PDD (ref doc 6 Appendix 3) and monitoring report (ref doc 1 Appendix 3)
Findings	Compliant
Conclusion	The total estimated ex ante emission reductions for this monitoring period according to the PDD is 72,771 tCO ₂ e. The corresponding actual emission reduction in the monitoring period as reported in the monitoring report and verified by the DOE is 87,353 tCO ₂ e, over the 1 year monitoring period. This indicates that the project achieved 24.7% more ERs than projected in the registered PDD.

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	Document review The following document were reviewed: registered PDD (ref doc 6 Appendix 3) and monitoring report (ref doc 1 Appendix 3)
Findings	Compliant
Conclusion	The DOE considers the reason, provided for the difference in the actual ERs achieved and the estimates in the PDD, to be justifiable. The variation is due to more stoves installed in the year 2015, than projected in the PDD.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	Document review The following document were reviewed: registered PDD (ref doc 6 Appendix 3) and monitoring report (ref doc 1 Appendix 3)
Findings	Compliant
Conclusion	All emission reductions claimed in this monitoring period fall under the period 1 January 2013 onwards. Relevant GWPs for the period were used.

SECTION F. Internal quality control

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of VERs for the project activity. The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team, by exercising utmost diligence and complete adherence to the CDM rules and requirements, as well as requirements for Voluntary Offset Projects under the Gold Standard, including the applied Gold Standard methodology.
- The review encompasses all aspects related to the project which includes: project design, baseline, monitoring plan and emission reduction calculations, internal quality assurance systems of the project participant, as well as the project activity, closure of CARs, CLs and FARs during the verification exercise, and review of sample documents.

The reviewer may raise Clarification Requests to the verification team and discusses these matters with Team Leader. After the agreement of the responses on the Clarification Requests from the verification team as well as the PP, the finalized verification report is accepted for further processing such as final approval, submission to the PP or uploading via the GS registry.

SECTION G. Verification opinion

Bureau Veritas Certification (the DOE) has performed the 5th periodic verification of the project "Energy Efficient Cook Stoves for Siaya Communities, Kenya"; Gold Standard registration reference number GS 879. The project is developed by Tembea Youth Centre for Sustainable Development, which is located in Siaya County, Kenya. The project is applying the Gold Standard

methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)”.

The verification was based on:

- a) Requirements for Voluntary Offset Projects under the Gold Standard, including the applied Gold Standard methodology. The Gold Standard requirements are stipulated in the GS Requirements–version 2.2 and The Gold Standard Toolkit version 2.2, and
- b) UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The management of Tembea Youth Centre for Sustainable Development (Kenya) and MyClimate Foundation (Switzerland) are responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the Project on the basis set out within the monitoring plan contained in the revised approved PDD. The development and maintenance of records and reporting procedures, in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 3 dated 19/05/2017 for the reporting period 01/01/2016 to 31/12/2016 (both days included). Bureau Veritas Certification confirms that the project is implemented as described in the validated and registered project design documents. Installed equipment (efficient cook stoves) being essential for generating emission reductions run reliably. The monitoring system is in place and the Project is generating GHG emission reductions as a Gold Standard VER project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements and that the project activity continues have a positive impact on the development of the community in which it is implemented. Our opinion relates to the project's GHG emissions, resulting GHG emission reductions, the validated and registered project baseline, approved monitoring plan and its associated documents. Based on the evidence and information that is considered necessary to guarantee that GHG emission reductions are appropriately calculated, and sustainable development indicators are monitored and reported; Bureau Veritas Certification confirms the following statement:

Reporting period:	01/01/2016 to 31/12/2016 (both days included)
Baseline emissions:	Integrated in ER calculation formula
Project emissions:	Integrated in ER calculation formula
Leakage emissions:	0 t CO ₂ equivalents
Emission Reductions:	87,353 t CO ₂ equivalents

SECTION H. Certification statement

Bureau Veritas Certification (the DOE) has performed the 5th periodic verification of the project “Energy Efficient Cook Stoves for Siaya Communities, Kenya”; Gold Standard registration reference number GS 879. The project is developed by Tembea Youth Centre for Sustainable Development, which is located in Siaya County, Kenya. The project is applying the Gold Standard methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)”. The verification was based on:

- a) Requirements for Voluntary Offset Projects under the Gold Standard, including the applied Gold Standard methodology. The Gold Standard requirements are stipulated in the GS Requirements–version 2.2 and The Gold Standard Toolkit version 2.2, and
- b) UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification consisted of the following three phases:

- i) Desk review of the project design, the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;

iii) Resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Tembea Youth Centre for Sustainable Development (Kenya) and MyClimate Foundation (Switzerland) are responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the Project on the basis set out within the monitoring plan contained in the revised approved PDD. The development and maintenance of records and reporting procedures, in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 3 dated 19/05/2017 for the reporting period 01/01/2016 to 31/12/2016 (both days included). Bureau Veritas Certification confirms that the project is implemented as described in the validated and registered project design documents. Installed equipment (efficient cook stoves) being essential for generating emission reductions run reliably. The monitoring system is in place and the Project is generating GHG emission reductions as a Gold Standard VER project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions, resulting GHG emission reductions, the validated and registered project baseline, approved monitoring plan and its associated documents.

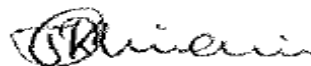
Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements and that the project activity continues have a positive impact on the development of the community in which it is implemented. Our opinion relates to the project's GHG emissions, resulting GHG emission reductions, the validated and registered project baseline, approved monitoring plan and its associated documents.

Based on the evidence and information that is considered necessary to guarantee that GHG emission reductions are appropriately calculated, and sustainable development indicators are monitored and reported; Bureau Veritas Certification confirms the following statement:

Reporting period:	01/01/2016 to 31/12/2016 (both days included)
Baseline emissions:	Integrated in ER calculation formula
Project emissions:	Integrated in ER calculation formula
Leakage emissions:	0 t CO ₂ equivalents
Emission Reductions:	87,353 t CO ₂ equivalents



Mr. Samuel Mayieko
Team Leader
27/03/2017



Mr. James Chirchir
Internal Technical Reviewer
27/03/2017

Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
EB	CDM Executive Board
FAR	Forward Action Request
FT	Field Performance Test
GHG	Green House Gas(es)
GS	Gold Standard
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
PDD	Project Design Document
PP	Project Participant
SD	Sustainable Development Indicator
TYCS	Tembea Youth Centre For Sustainable Development
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reductions
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Lead Verifier – Samuel Mayieko

He has a degree in Physics with over 9 years of experience in renewable energy, energy efficiency and climate change, out of which 6 years have been in CDM. He has been trained on CDM verification, QMS (ISO 9001) and EMS (ISO 14001), as Lead auditor. He has been involved in validation and verification of CDM and Gold Standard projects covering sectoral scope 1 and 3. Some of the GS projects he has been involved in included: Previous cycles of verification of GS 879, verification of GS 477, verification of GS 464 and verification of GS 2457. He is a resident of Kenya, the host country where the project is implemented.

Internal Reviewer – James Chirchir

He holds a Bachelor's degree in Chemical and Process Engineering and had 4 years' experience in manufacturing before joining Bureau Veritas. He is Lead Auditor in ISO 9001 and ISO 14001 and a trained CDM Verifier. He has conducted at least 5 CDM projects as validator/verifier. He has been involved in the verification of the following GS projects GS 879, GS 477 and GS 464. He is a resident of Kenya, the host country where the project is implemented.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring report, version 03	19/05/2017	PP
2	Tobias Hoeck/Job Orina/Jared Buoga	Database and ER calculation	18/02/2016	PP
3	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring/Usage Survey 2017 Report	15/01/2016	PP
4	Gold Standard	GS879 Issuance Review Round Final	19/10/2016	PP
5	Job Orina	Email communication between PP and GS	06/01/2017	PP
6	Tobias Hoeck/Job Orina/Jared Buoga	Registered PDD version 3.2	10/07/2012	PP
7	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring Manual Version 02	29/08/2012	PP
8	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring Report version 1.0	15/01/2017	PP
9	Michael Ekadel (ESINYEN & ASSOCIATS CPA (K). P.O. BOX 10117-00100 NAIROBI, TEL: 072291474/0786716709)	Tembea Financial audit report	09/03/2017	PP
10	Tembea Youth Centre for Sustainable Development	Report on training done in Southwest Alego Location on 7 th to 17 th at Udenda Chiefs Camp	17/11/2016	PP
		Report on training held in West Alego on 6 th to 16 th June 2016 at Mwer Chiefs Camp	16/06/2016	PP

11	Tembea Youth Centre for Sustainable Development	Training report for the training-south west Alego	4/11/2016	PP
		Training report for the training-west Alego	17/06/2016	PP
12	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring report (4 th verification cycle)	2016	DOE
13	James Chirchir	Verification report version 1.1 (4 th verification cycle)	04/06/2016	DOE
14	GS	Technologies and Practices to Displace Decentralized Thermal Energy Consumption	11/04/2011	PP
15	Tobias Hoeck/Job Orina/Jared Buoga	Monitoring Usage Survey analysis_V01	15/01/2017	PP
16	Tembea Youth Centre For Sustainable Development	MIS CSL	15/01/2017	PP
17	Tembea Youth Centre For Sustainable Development	CSL summary_V01	15/01/2017	PP
18	Tembea Youth Centre For Sustainable Development	Receipts number: 2848, 2853, 2297, 2291, 2125, 2111, 2105, 2100 and 3204		PP

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

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

FAR ID	xx	Section no.	E.2	Date: 20/03/2017
Description of FAR				
<i>Refer to CL 3 below</i>				
Project participant response				Date: 20/03/2017
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: : 20/03/2017
N/A				

Table 2. CL from this verification

CL ID	CL 1	Section no.	B.1	Date: 13/03/2017
Description of CL				
<i>During site visit it was observed that the unique identifier inscribed on stoves was not durable and was vulnerable to erasure whenever the user redecorates the kitchen. How will the PP ensure that the stove remain uniquely identifiable throughout the crediting period?</i>				
Project participant response				Date: DD/MM/YYYY
Tembea is at the moment designing stove number tags that will be inscribed with the stove number and permanently fixed either behind the door to the house where the stove is fixed or the wall as advised by the owner. This will hopefully affect stoves constructed during 2017-2018. We are also planning to embark on a campaign involving the stove owners, community mobilizers, artisans and field officers to motivate households to retrace the stove numbers whenever they improve their households, this is a measured aimed at addressing the existing stoves.				
Documentation provided by project participant				
None				
DOE assessment				Date: 20/03/2017
The response has been reviewed and is acceptable. CL 1 is closed.				

CL ID	CL 2	Section no.	C	Date: 13/03/2017
Description of CL				

<i>The PP is requested to clarify the discrepancy in the date of sale of stove in the sales database and the date indicated in the 9 sampled receipts i.e. receipts number. 2848, 2853, 2297, 2291, 2125, 2111, 2105, 2100 and 3204</i>	
Project participant response	Date: 20/03/2017
The receipts presented were cash sale receipts that indicate when payment for particular stove was done keeping in mind the stoves are constructed on credit this would imply they are paid for months later. We have provided the sampled stove purchase agreement and Stove passport they capture the right date of construction.	
Documentation provided by project participant	
Stove purchase agreements	
DOE assessment	Date: 20/03/2017
The response has been reviewed together with the Stove purchase agreements (no. 36188, 36327, 30861, 41502, 41504, 41501, 41503, 41505). No discrepancies were observed between the dates on the Sampled Stove purchase agreements and the dates in the database. CL2 is closed.	

CL ID	CL 3	Section no.	B.2	Date: 13/03/2017
Description of CL				
The PP is requested to clarify how the FAR raised in the 4 th verification cycle has been addressed				
Project participant response				Date: 20/03/2017
Based on consultation with GS it was agreed that the FAR be closed by the 6 th verification. In this arrangement the PP was allowed to address the FAR gradually, by the 5 th verification the PP has traced and changed details of 338 households as per the suggestion in the FAR. The process involved tracing the specific stove, and separating between the stove owners and stove users. The list has been uploaded for your perusal.				
Documentation provided by project participant				
Revised Monitoring report				
DOE assessment				Date: 20/03/2017
The revised monitoring report has been reviewed. The PP has provided additional information on the progress of the FAR. The DOE finds the response acceptable. The CL 3 is closed.				

Table 3. CAR from this verification

CAR ID	CAR 1	Section no.	Monitoring/Usage Survey	Date: 13/03/2017
Description of CAR				
<i>From the 8 questionnaires sampled during onsite assessment, it was observed that the information transferred, from 2 of the questionnaires (questionnaires number 1 and 37), to the excel datasheet 170115_Monitoring_Usage_Survey_analysis_V01, was not entirely consistent. In the two questionnaires, question number 20 was not responded to, however in the database it is indicated as 3, meaning the respondent cooks 3 times a day.</i>				
Project participant response				Date: 20/03/2017
<i>This was caused by an omission during data collection, and entry, to correct the same all questionnaires were checked for any omission and corrections undertaken. Going forward we are improving our mechanisms since we shall have big sample by ensuring we have team leaders who check the questionnaires at the field level.</i>				
Documentation provided by project participant				
None				
DOE assessment				Date: 20/03/2017
The response has been reviewed and found acceptable. CAR 1 is closed.				

Table 4. FAR from this verification

FAR ID	xx	Section No.		Date: 20/03/2017
Description of FAR				
N/A				
Project participant response				Date: 20/03/2017
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 20/03/2017
N/A				

Appendix 5. Samples verified

Samples for Risk 1

Receipts no. : 2848, 2853, 2297, 2291, 2125, 2111, 2105, 2100 and 3204

Samples for Risk 2 – Monitoring and usage survey

Questionnaire #	Interviewer	Survey Date	Respondent	Gender	Location	Stove ID	Comment
1	Erick Otieno	11/18/2016	Fredrick Odhiambo Otieno	Male	Hono	TEMBEA15/34703	Confirmed participation in survey Question 20 not correctly entered in database
32	Erick Otieno	12/5/2016	Penina Adhiambo	Female	Gangu	TEMBEA16/41724	Confirmed participation in survey
37	Erick Otieno	12/6/2016	Vivian Awino Ongala	Female	Kaugagi Udenda	TEMBEA16/42518	Confirmed participation in survey Question 20 not correctly entered in database
98	Nicholaus Ngesa	11/25/2016	Clariss Adhiambo	Female	Tingare West	TEMBEA14/19708	Confirmed participation in survey
113	Robert Odallo	11/21/2016	Filgona Owuor	Female	Siwar A	TEMBEA13/10445	Confirmed participation in survey
145	Judithy Atieno	11/21/2016	Mercy Owuor	Female	Rawa	TEMBEA11/4759	Confirmed participation in survey
225	Joshua Amollo		Alice Adhiambo	Female	Nyangera Village	TEMBEA10/0037	Confirmed participation in survey
246	Joshua Amollo	12/6/2016	Millicent Atieno	Female	Sigul Village	TEMBEA10/0163	Confirmed participation in survey

Samples for Risk 3 – Single user/ same location multiples stoves

Year of sale	Name of stove user	Monitoring Region	Monitoring Sector	GPS coordinates of household: Latitude	GPS coordinates of household: Longitude	Stove identification number	Comment
2007	Adelight Achieng Othieno	Sihay	U1	00 14.001	034 16.429	TEMBEA11/2004 TEMBEA11/3633	Extra stove acquired for family member

CDM-VCR-FORM

2010		Kathieno C	U1			TEMBEA14/17338	Extra stove acquired for co-wife. Stoves not exactly in the same location
2011	Agneta Ochogo Oyamo	Yiro West	U2	00 17.106	034 22.450	TEMBEA15/24114	
2007	Anjelina Akongo Ogutu	Nyamsenda	U1	00 16.373	034 15.304	TEMBEA11/1819	Extra stoves acquired for neighbours and co-wife
						TEMBEA11/3448	
						TEMBEA11/3812	
						TEMBEA11/4418	
2007	Calara Akoth	Nyamsenda	U1	00 ⁰ 16.625	034 14.498	TEMBEA11/2124	Extra stove acquired for co-wife. However user of stove TEMBEA11/2124 is deceased
						TEMBEA11/4017	
2007	Domtilah Otieno	Nyamsenda	U1	00 16. 452	034 14.595	TEMBEA11/1938	FAR sample, user has been traced as indicated below
						TEMBEA11/3567	Herenia Oloo
2007	Dorcas Akoth Nyamane	Nyamsenda	U1	00 15.410	034 15.282	TEMBEA11/1965	FAR sample, user has been traced as indicated below
						TEMBEA11/3594	Mary Adhiambo Ogolla
2010	Elijah Okoth	Kathieno C	U1	00 16.098	034 19.351	TEMBEA14/17224	Extra stove acquired for 2 nd wife. However user of stove TEMBEA15/24947 is deceased
2011		Yiro West	U2			TEMBEA15/24947	
2007	Esther Atieno Otieno	Nyamsenda	U1	00 15.556	034 15.580	TEMBEA11/1860	FAR sample, users have been traced as listed below;
						TEMBEA11/3489	Gladys Atieno Otieno
						TEMBEA11/3853	Rosa Opondo Ochieng
						TEMBEA11/4459	Margret Nyaoro Osodo
2007	Jane Awino Awili	Sihay	U1	00 14.486	034 17.033	TEMBEA11/2029	FAR sample, user has been traced as indicated below
						TEMBEA11/3922	Prisca Atieno

CDM-VCR-FORM

2009	Jennifer Achieng	Kathieno B	U1	00 16.343	034 20.136	TEMBEA13/15052	Stoves are traced to the same homestead However Stove TEMBEA13/15052 was demolished
2011		Yiro West	U2			TEMBEA15/25091	
2011		Simenya	U2			TEMBEA15/25116	
2009	Leah Oluoch	Ligingo	U1	00 17.471	034 10.387	TEMBEA13/11656	Extra stove acquired for family member. Stoves are installed in the same homestead
						TEMBEA13/12015	
2007	Margaret Atieno	Sihay	U1	00 14.997	034 17.082	TEMBEA11/2125	FAR sample user has been traced TEMBEA11/4018 to Fostine Namalwa Omondi
						TEMBEA11/4018	
2009	Monica Atieno	Kagonya	U1	00 15.661	034 10.493	TEMBEA13/11584	Stove no exactly in the same location
2009	Evanson Jaleny	Ligingo	U1			TEMBEA13/12127	
2007	Monica Atieno Onyango	Ligala	U1	00 15.176	034 14.644	TEMBEA11/0997	Stoves are in three different homesteads with 2 stoves per homestead. Stoves not in the same location but homesteads are nearby each other
2007	Monica Owino	Ligala	U1			TEMBEA11/0998	
2007	Magret Nyaoro Ochieng	Ligala	U1			TEMBEA11/0999	
2007	Henry Oduor Owuor	Kopondi D	U1			TEMBEA11/2642	
2007	Joseph Otieno	Kopondi D	U1			TEMBEA11/2643	
2007	Paul Oloo	Kosema	U1			TEMBEA11/2644	
2009	Nehemiah odilo	Kagonya	U1	00 16.746	034 13.176	TEMBEA13/13612	Stoves are not in the same location. Stove TEMBEA13/13612 is almost a kilometre away from stove TEMBEA13/13614 Stove TEMBEA13/13613 has been demolished
2009	George Ooko	Kagonya	U1			TEMBEA13/13613	
2009	Chrispine owino	Kagonya	U1			TEMBEA13/13614	

Sample Homesteads with multiple stoves



Figure 1: Two Stoves TEMBEA13/11656 and TEMBEA13/12015 found in this home stead



Figure 2: Two stoves TEMBEA11/0999 and TEMBEA11/2642 found in this homestead

APPENDIX 6. CDM PROJECT VERIFICATION PROTOCOL (Rev 08.2)

Table 1 Verification requirements based on VVS version 09.0 (EB 79 Annex 3), PS version 09.0 (EB 79 Annex 4), PCP version 07.0 (EB 79 Annex 5), and Guidelines for completing the Monitoring Report Form version 03.2 (EB 70 Annex 11)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	MR		Provided as: Energy Efficient Cook Stoves for Siaya Communities, Kenya	OK	OK
(b) Is the reference number of the project activity provided?	MR		Provided as: GS 879	OK	OK
(c) Is the version number of the monitoring report indicated?	MR		Indicated as: version 1.0 later updated to 2.0 then to 3.0	OK	OK
(d) Is the completion date of the monitoring report provided in DD/MM/YYYY format?	MR		The completion date of the monitoring report has been clearly provided as 15/01/2017 later updated to 20/03/2017	OK	Ok
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR		Not Applicable	OK	OK
(f) Are the monitoring period number and duration of this monitoring period (first and last days included in DD/MM/YYYY format) provided?	MR		Not Applicable	OK	OK
(g) Are project participants indicated?	MR		Not Applicable	OK	OK
(h) Is the host party(ies) indicated?	MR		Not Applicable	OK	OK
(i) Are the sectoral scope(s) and applied methodology(ies) indicated?	MR		Not Applicable	OK	OK
(j) Is the estimated amount of GHG emission reductions or net anthropogenic GHG removals	MR		Not Applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
by sinks for this monitoring period in the registered PDD indicated?					
(k) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period indicated?	MR		Not Applicable	OK	OK
(l) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012 indicated (if applicable)?	MR		Not Applicable	OK	OK
(m) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards indicated (if applicable)?	MR		Not Applicable	OK	OK
Part II Monitoring Report					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section B.1 Implementation status of the project activity?	MR		Yes, A brief description of the project activity (refer to pg 2 of the MR). However this is provided in section A.1 of the MR and not in B 1. This is acceptable since the project is a GS project.	OK	OK
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks?	MR		Yes. The purpose of the project activity is to replace inefficient 3-stone fires for cooking by install approximately 48,900 efficient stoves into households in Siaya County, Kenya over a period of 7 years.	OK	OK
A.1.2.2 Brief description of the installed	MR		Yes, From the MR it is indicated that the project installs	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
technology and equipments?			fixed biomass rocket stove with two cooking units		
A.1.2.3 Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	MR		Yes, The relevant dates are indicated as follows: Start date of the project: 04 October 2010 Start date of crediting period: 01 January 2011 Date of first stove sale: 04 October 2010 First monitoring period: 01 January 2011 – 02 July 2012 Second monitoring period: 03 July 2012 to 31 Dec 2013 Third monitoring period: 01 Jan 2014 to 31 Dec 2014 Fourth monitoring period: 01 Jan 2015 to 31 Dec 2015 Fifty monitoring period: 01 Jan 2016 to 31 Dec 2016 Date of registration: 03 July 2012	OK	OK
A.1.2.4 Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period?	MR		Yes, In this monitoring period it is indicated that the project achieved 87,353 tCO ₂ e of emission reductions.	OK	OK
A.2 Location of project activity					
A.2.1 Is the information on the location of the project activity provided, including Host Party(ies), Region/State/Province, City/Town/Community, Physical/Geographical location etc.?	MR		Yes, the information is provided in pg 2 & 3 of the MR. Under section A.3 the location is provided as Siaya county, Nyanza province, Kenya. A map and geographic coordinates for the project activity are also provided. This information is consistent with the information in the registered PDD version 3.2 dated 10/06/2012	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.3 Parties and project participant(s)					
A.3.1 Is the Party(ies) and project participant(s) involved in the project activity listed in the provided table?	MR		Yes. The parties and PP are provided as: Parties: Kenya (host) and Switzerland (Annex 1) PPs: Tembea Youth Centre for Sustainable Development and Myclimate Foundation This information is consistent with the information in the registered PDD version 3.2 dated 10/06/2012	OK	OK
A.4 Reference of applied methodology					
A.4.1 Is the exact reference (number, title, version) of the methodology(ies) indicated?	MR		Yes. The methodology is indicated as “Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)”	OK	OK
A.4.2 Is the exact reference (number, title, version) of any tools and other methodologies to which the applied methodology(ies) refers indicated?	MR		N/A. No tools or methodologies are referenced	OK	OK
A.5 Crediting period of project activity					
A.5.1 Are the type, start date and length of the crediting period corresponding to this monitoring period provided?	MR		Yes. The start date of the crediting period is indicated as 01 January 2011, the length of crediting period as 7 years and the type of crediting period as renewable.	OK	OK
B. Implementation of project activity					
B.1 Description of implemented registered project activity					
B.1.1 Is the description of the installed technology, technical processes and equipments	MR		Yes, a brief description of the technology with photos of the installed technology is provided. The PP has not	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided, include diagrams where appropriate?	PS	244(a)	included a description of technical process and any accompanying diagram. However, this is not a requirement of GS, in addition, from the photos provided the verification team is able to understand the technology being installed in the project activity		
B.1.2 Is the information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, continued operation periods, etc.) provided?	PS	244(b)	Yes, the PP has provided the information in section B.1 of the monitoring report. In this section of the monitoring report, the PP has indicated the start date of the project activity as: 04 October, 2010 and that the project activity is in continuous operation. The following information provided in the monitoring report shall be assessed further during on-site assessment. Total number of stoves installed (indicated as 44,156 in the monitoring report) Number of people accessing clean and efficient cooking (indicated as 205,105 in the monitoring report) Number of established groups and participants (indicated as 1503 groups with 44,315 participants in the monitoring report) Training (in the monitoring report it is indicated that project trained 168 persons in efficient stove construction) Awareness creation activities	OK	OK
B.1.3 Is the description of: (i) the events or situations that occurred during the monitoring period that may impact the applicability of the methodology (ii) how the issues resulting from these events or situations have been addressed provided?	PS	244(c)	It is indicated in section B.1 of the monitoring report that there are no events that occurred during this monitoring period that impacted on the applicability of the applied methodology. No such events were reported during site visit	OK	OK
B.1.4 Have the project participants addressed the FARs identified during validation or previous	VVS	354	CL 3: The PP is requested to clarify how the FAR raised in the 4th verification cycle has been addressed	Refer to CL	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
verification(s)?				3 in annex 4	
B.1.5 Have the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	383	The description provided under section B1 of the MR, on the implementation status of the project activity. It is indicated that the project has been implemented according to the description in the registered PDD, Further assessment was carried out during on-site assessment and concluded that this had been done as per registered PDD. CL 1: During site visit it was observed that the unique identifier inscribed on stoves was not durable and was vulnerable to erasure whenever the user redecorates the kitchen. How will the PP ensure that the stove remain uniquely identifiable throughout the crediting period?	Refer to CL 1 in annex 4	OK
B.1.6 Are all physical features of the project activity in the registered PDD in place?	VVS	384	Yes. This was confirmed during site visit	OK	OK
B.1.7 Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	384	The project participant has operated the project activity as per the registered PDD.	OK	OK
B.1.8 Was an on-site visit conducted?	VVS	384	On-site assessment was scheduled and conducted on 13/02/2017 - 16/02/2017,	OK	OK
B.1.9 If an on-site visit is not conducted, is the rationale of the decision justified?	VVS	384	Not Applicable as on-site assessment was carried out	OK	OK
B.2 Post registration changes			There are no post registration changes for this project activity. Therefore section B.2 of this protocol is not applicable	OK	OK
B.2.1 Temporary deviations from registered				OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
monitoring plan or applied methodology					
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR		Not applicable	OK	OK
B.2.1.2 Is a description of the deviation(s) in accordance with applicable provisions in the Project standard provided?	MR		Not applicable	OK	OK
B.2.1.3 Are the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach included in the description?	MR		<i>Not applicable</i>	OK	OK
B.2.1.4 For deviation(s) that require prior approval by the Board, are the date of approval and reference number included in the description?	MR		Not applicable	OK	OK
B.2.2 Corrections			Not applicable	OK	
B.2.2.1 Is it indicated whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.2.2 In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD	MR		Not applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided?					
B.2.3 Permanent changes from registered monitoring plan or applied methodology			Not applicable	OK	OK
B.2.3.1 Is it indicated whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.3.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK
B.2.4 Changes to project design of registered project activity			Not applicable	OK	OK
B.2.4.1 Is it indicated whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.4.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD	MR		Not applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided?					
B.2.5 Changes to start date of crediting period			Not applicable	OK	OK
B.2.5.1 Is it indicated whether any changes to the start date of the crediting period have been approved during this monitoring period?	MR		Not applicable	OK	OK
B.2.5.2 In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided?	MR		Not applicable	OK	OK
B.2.6 Types of changes specific to afforestation or reforestation project activity			Not applicable	OK	OK
B.2.6.1 Is it indicated whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board?	MR		Not applicable	OK	OK
B.2.6.2 If changes were applied, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK
C. Description of monitoring system					
C.1 General requirements					
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all	MR PS	- 248	Section C of the MR provides a description of the monitoring system. It also refers to a Monitoring Manual, which was provided to the DOE in the previous	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
relevant monitoring points?			verification cycle. The Monitoring Manual has been reviewed. From the information provided, and the nature of the project activity which deals with many individual subsystems (cook stoves), the verification team determined that all necessary monitoring activities have been adhered to.		
C.1.2 Does this description where appropriate include data collection procedures (information flow including data generation, aggregation, recording, calculations and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system?	MR PS	- 248	A description of the roles and responsibilities, data collection procedures, organizational structure is provided in the Monitoring Manual. From the site visit assessment, the roles were observed to have been adhered well.	OK	OK
C.1.3 Is the monitoring plan of the project activity in accordance with the applied methodology including applicable tool(s)?	VVS	386	Yes, Monitoring plan is in line with the applied methodology ref. Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011). Total sales record and project database are maintained as required by the applied methodology Monitoring survey and usage survey have been carried out as required by the methodology. The monitoring/usage survey report and survey data have been provided and reviewed. The Project FT updates is carried out every 2 year and were updated in 2015, this was not necessary in this monitoring period as the result of the 2015 PFT are still valid The PP has not carried out a baseline FT update. This is	Refer to CAR 1 in annex 4	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			not required as the PP has a fixed baseline Leakage test is carried out every 2 years. Leakage test for this monitoring period was carried out, the results from Monitoring/Usage Survey showed no leakage effects CAR 1: From the 8 questionnaires sampled during onsite assessment, it was observed that the information transferred, from 2 of the questionnaires (questionnaires number 1 and 37), to the excel datasheet 170115_Monitoring_Usage_Survey_analysis_V01, was not entirely consistent. In the two questionnaires, question number 20 was not responded to, however in the database it is indicated as 3, meaning the respondent cooks 3 times a day.		
C.1.4 For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), are there any issues which may enhance the level of accuracy and completeness of the monitoring plan and should bring to the attention of the Board?	VVS	387	No applicable	OK	OK
C.1.5 Has the monitoring plan been properly implemented and followed by the project participants?	VVS	390(a)	Yes	OK	OK
C.1.6 Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	390(b)		-	-
C.1.6.1 Project emission parameters?	VVS	390(b)	The following parameters stated in the monitoring plan	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			are monitored and reported: Project technologies credited Pp,y, Usage (Up,2) Project Technology Days (Np,1) Leakage (LEp,y) Similar cook stove project activities in the project area		
C.1.6.2 Baseline emission parameters?	VVS	390(b)	A fixed baseline is applied in this project activity and therefore baseline parameters are fixed and have been verified in previous verifications. A default value of 92% for the parameter fnrb has been applied.	OK	OK
C.1.6.3 Leakage parameters?	VVS	390(b)	Leakage has been reported as zero. The results from Monitoring/Usage Survey conducted in 2016 showed no leakage effects	OK	OK
C.1.6.4 Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVS	390(b)	The responsibility and authority reported in the MR are in line with the monitoring registered plan. No deviations were observed during the site visit	OK	OK
D. Data and parameters					
D.1 Data and parameters fixed ex ante or at renewal of crediting period			The following parameters are fixed ex ante and are indicated in the MR: CO2 emission factor arising from use of wood-fuel in baseline scenario (EFb,co2)	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Non-CO2 emission factor arising from use of wood-fuel in baseline scenario (EFb,non-co2) CO2 emission factor arising from use of wood-fuel in project scenario (EFp,co2) Non-CO2 emission factor arising from use of wood-fuel in project scenario (EFp,non-co2) Non-renewability status of woody biomass fuel in scenario I during year y (fNRB,i,y) Quantity of woody biomass consumed in the baseline scenario in year y and per day in year y. (Pb,y) Quantity of woody biomass consumed in the project scenario in year y and per day in year y. (Pp,y) These parameters as reported in the MR have been cross checked with the registered PDD.		
D.1.1 For “Purpose of data”, is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Purpose of data is not stated. However this not a requirement under GS	OK	OK
D.1.2 For “Value(s) applied”, if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Yes, Values for the above parameters are indicated as follows: EFb,co2 = 1.7472 tCO2/t wood EFb,non-co2 = 0.1176 tCO2eq/t wood (until 31.12.2012)	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			and 0.1356 tCO₂eq/t wood (from 01.01.2013 on). EF_{p,co2} = 1.7472 tCO₂/t wood (=112.0 tCO₂/TJ * 0.0156 TJ/ t) EF_{p,non-co2} = 0.1176 tCO₂eq/t wood (until 31.12.2012) and 0.1356 tCO₂eq/t wood (from 01.01.2013 on) f_{NRB,i,y} = 92% P_{b,y} = 2.6645 t wood/year and 0.0073 t wood/day P_{p,y} = 1.3505 t wood/year and 0.0036t wood/day The above values have been cross checked with the registered PDD		
D.1.3 Is the source of data provide and/or identified?	PS	248(d)	Yes The source of data for each of the above parameter is indicated as follows: EF_{b,co2} - 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/2.5 EF_{b,non-co2} - 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 2.5 EF_{p,co2} - 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/2.5 EF_{p,non-co2} - 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 2.5 f_{NRB,i,y} - CDM default value:	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			http://cdm.unfccc.int/DNA/fNRB/index.html BFT 2011 Pp,y - PFT 2015 The data source for the above parameters have been cross checked with the registered PDD and previous verification reports and where applicable the relevant websites (CDM and IPCC websites)		
D.1.4 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	248(g)	Yes Information on appropriate emission factors and IPCC default values has been provided. Noteworthy is the global warming potential for N2O and CH4 where values applicable for second commitment period have been applied in line with CDM EB63 annex 3	OK	OK
D.2 Data and parameters monitored			The following monitored parameters are reported: Project technologies credited Pp,y, Usage (Up,2) Project Technology Days (Np,1) Leakage (LEp,y) Similar cook stove project activities in the project area	OK	OK
D.2.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by	MR		Purpose of data is stated for each of the respective parameters as follows:	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl																		
sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?			Project technologies credited - Calculation of technology days Pp,y, - Project emission reduction calculations Usage (Up,2) - Project emission reduction calculations Project Technology Days (Np,1) - Project emission reduction calculations Leakage (LEp,y) - Project emission reduction calculations Similar cook stove project activities in the project area - Avoid double counting																				
D.2.2 For “Value(s) of monitored parameter”, if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		The following are the reported values for each of the above parameters: Project technologies credited <table><tr><th>Year</th><th>number of stoves</th></tr><tr><td>2010</td><td>324</td></tr><tr><td>2011</td><td>4,662</td></tr><tr><td>2012</td><td>5,139</td></tr><tr><td>2013</td><td>5,187</td></tr><tr><td>2014</td><td>6,840</td></tr><tr><td>2015</td><td>14,186</td></tr><tr><td>2016</td><td>7,818</td></tr><tr><td>TOTAL</td><td>44,156</td></tr></table>	Year	number of stoves	2010	324	2011	4,662	2012	5,139	2013	5,187	2014	6,840	2015	14,186	2016	7,818	TOTAL	44,156	OK	OK
Year	number of stoves																						
2010	324																						
2011	4,662																						
2012	5,139																						
2013	5,187																						
2014	6,840																						
2015	14,186																						
2016	7,818																						
TOTAL	44,156																						

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Pp,y, = 1.314 t wood/year and 0.0036t wood/day Usage (Up,y) = 92.9% Project Technology Days (Np,y) = 14,574,084 Leakage (LEp,y) = 0 Similar cook stove project activities in the project area = 0 The values reported have been cross checked with the respective sources of data indicated below. 170118_Tembea_project_database_V01		
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG emission reductions or net GHG removals provided? Where data are measured continuously, are they presented using an appropriate time interval? For default values (such as an IPCC value), where it is ex post confirmed, is the most recent value applied?	PS	248(a)	<i>Yes, all the monitored parameters for the purpose of calculating GHG emission reductions were provided.</i>	Ok	OK
D.2.4 Is the equipment used to monitor each parameter described, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	PS	248(b)	Monitoring equipment is only used in PFT. In this monitoring period no PFT was carried out.	OK	OK
D.2.5 Is the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?	VVS	390(c)	Not Applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.6 Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	394	Not Applicable	OK	OK
D.2.7 If, during verification of a certain monitoring period, the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), is the following conservative approach adopted in the calculation of emission reductions:	VVS	395	Not applicable	OK	
D.2.7.1 Applying 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, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error?	VVS	395(a)	Not applicable	OK	OK
D.2.7.2 Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment?	VVS	395(b)	Not applicable	OK	OK
D.2.8 Has the error has been applied:	VVS	396	Not applicable	OK	-
D.2.8.1 In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	396(a)	Not applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.8.2 For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.	VVS	396(b)	Not applicable	OK	OK
D.2.9 In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item "D.2.7" above?	VVS	397	Not applicable	OK	OK
D.2.10 In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of PPs, are the requirements for post registration changes, in section 9.5 of the VVS, followed?	VVS	398	Not applicable	OK	OK
D.2.11 In cases where neither the monitoring methodology nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, are the equipments calibrated either in accordance with the specifications of the local/national standards, or as per the manufacturer's specification? If neither local/national standards nor the manufacturer's specification are available, were international standards used?	VVS	399	Not applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.12 Is it described how the parameters are measured/calculated and the measurement and recording frequency?	PS	248(c)	Yes	OK	OK
D.2.13 Are monitoring results consistently recorded as per approved frequency?	VVS	390(d)	Yes	OK	OK
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	248(d)	Yes The sources of data for the above parameters are indicated as follows: Project technologies credited - Tembea sales records Pp,y, - PFT Update 2015 Usage (Up,y) - Usage Survey 2016 (see Usage/Monitoring Survey Report) Project Technology Days (Np,y) - Sales record/Project database Leakage (LEp,y) - PDD and Monitoring/Usage Survey 2016 Similar cook stove project activities in the project area - Gold Standard registry, UNEP Risoe CDM Pipeline and other local sources.	OK	OK
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	248(e)	No applicable.	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	248 (f)	QA/QC procedures to be reviewed during on-site assessment.	Pending site visit	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.17 Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	390(e)	QA/QC procedures to be reviewed during on-site assessment.	Pending site visit	OK
D.2.18 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	248(g)	Not applicable since no monitored parameters are sourced from IPCC values.	OK	OK
D.3 Implementation of sampling plan					
D.3.1 Is a description provided on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan, Include:	MR		Yes A description of sampling efforts and survey for Monitoring and usage survey has been provided and reviewed.	OK	OK
D.3.1.1 Description of implemented sampling design?	MR		Yes, these are provided in a separate reports refer to 170115_Monitoring_Usage_Survey_Report_Tembea_V01	OK	OK
D.3.1.2 Collected data (electronic spreadsheets may be attached and referenced)?	MR		Yes, these are provided in 170115_Monitoring_Usage_Survey_analysis_V01	OK	OK
D.3.1.3 Analysis of the collected data?	MR		Yes this is provided in 170115_Monitoring_Usage_Survey_analysis_V01	OK	OK
D.3.1.4 Demonstration on whether the required confidence/precision has been met?	MR		Yes this is demonstrated in 170115_Monitoring_Usage_Survey_analysis_V01	OK	OK
E. Calculation of emission reductions or GHG removals by sinks					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
E.1 Calculation of baseline emissions or baseline net GHG removals by sinks					
E.1.1 Are the sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values?	MR PS	- 253(a)	No need for separate calculation of baseline emissions. Baseline emissions calculation formula is integrated in the ER calculation formula.	OK	OK
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes 170118_Tembea_project_database_V01	OK	OK
E.2 Calculation of project emissions or actual net GHG removals by sinks					
E.2.1 Are the sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values?	MR PS	- 253(b)	No need for separate calculation of project emissions. Project emissions calculation formula is integrated in the ER calculation formula.	OK	OK
E.2.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes 170118_Tembea_project_database_V01	OK	OK
E.3 Calculation of leakage					
E.3.1 Are the sample calculations for all formulae used and calculation of leakage provided, applying actual values?	MR PS	253(c)	No need for separate calculation of leakage emissions. Leakage emissions is integrated in the ER calculation formula.	OK	OK
E.3.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes 170118_Tembea_project_database_V01	OK	OK
E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks					

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
E.4.1 Are the results of above sections summarized and GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period presented, using the provided table?	MR PS	- 253(d)	Yes Provided as per table below		OK	OK
			Year	ER (tCO2e)		
			2016	87,353		
			Total	87,353		
E.4.2 Is a complete set of data for the specified monitoring period is available?	VVS	402(a)	Yes		OK	OK
E.4.3 Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	402(b)	Further assessment during on-site assessment. The PP is requested to clarify the discrepancy in the date of sale of stove in the sales database and the date indicated in the 9 sampled receipts i.e. receipts number. 2848, 2853, 2297, 2291, 2125, 2111, 2105, 2100 and 3204		Refer to CL 2 in annex 4	OK
E.4.4 Have calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVS	402(c)	Yes Provided as: $ER_y = \sum_{b,y} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,fuel} * (f_{NRB,b,y} * EF_{fuel,CO2} + EF_{fuel, nonCO2})) - LE_{p,y}$ $ER_{2016} = 9,996,635 * 0.919 * 0.0037 * (0.92 * 1.7472 + 0.1356) - 0$		OK	OK
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	402(d)	Yes		OK	OK
E.4.6 Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVS	402(e)	Yes		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl						
E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD											
E.5.1 Is a comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the registered PDD provided?	MR PS	- 256	Yes Provided as: <table border="1"> <thead> <tr> <th>Item</th><th>Values applied in ex-ante calculation of the registered CDM-PDD</th><th>Actual values reached during the monitoring period</th></tr> </thead> <tbody> <tr> <td>Emission reductions (tCO₂e)</td><td>2016: 72,771</td><td>2016: 87,353</td></tr> </tbody> </table>	Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period	Emission reductions (tCO ₂ e)	2016: 72,771	2016: 87,353	OK	OK
Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period									
Emission reductions (tCO ₂ e)	2016: 72,771	2016: 87,353									
E.6 Remarks on difference from estimated value in registered PDD											
E.6.1 For any registered CDM project activity, except A/R project activities, have project participants explained the cause of any increase in the actual GHG emission reductions achieved during the current monitoring period (e.g. higher water availability, higher plant load factor, etc.), including all information (i.e. data and/or parameters) that is different from that stated in the registered PDD?	MR PS	- 257	The actual emission reductions in this monitoring period are higher compared to the estimates in the registered PDD. An explanation for the difference has been provided as: 1. Increased installation in the previous year due to increased community uptake 2. Adjustment values for project technology days in use were not applied during writing the PDD. The validation team considers the reasons given as justifiable.	OK	OK						
E.7 Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and											

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the period from 1 January 2013 onwards					
E.7.1 If the monitoring period starts before 31 December 2012 and ends anytime thereafter, are actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved for the following two periods provided respectively? (a) Up to 31 December 2012 (1st commitment period); (b) From 1 January 2013 onwards.	MR		This monitoring period fall in the second commitment period.	OK	OK
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic GHG removals by sinks are calculated proportionally for each period? In cases where annual caps were applied in the calculations, is it ensured that the annual caps are pro-rated to each period?	MR		Not applicable.	OK	OK
F. GS Requirements					
F.1 Have the social and economic impact of the project been investigated biannually and an assessment made of its contribution, positive or otherwise, to sustainable development in the area as per the frequency defined in the PDD?	GS		Monitoring of the following SDs has been reported in the MR: Air Quality, Quality of employment, Livelihood of the poor, Access to affordable and clean energy services, Human/institutional capacity and Quantitative employment and income generation	Ok	OK
F.2 Are there any changes to the key sustainable development indicators?	GS		The SDs have been reported to have a positive change	Ok	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
F.3 Were mitigation/compensation measures achieved and implemented according to the success indicators as established in the monitoring plan(s)?	GS		The PP has reported positive changes in the SDs.	OK	OK

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
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