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.

VERICATION AND CERTIFICATION REPORT	
Title of the project activity	Improved Jikos – Better Living For Rural Population
Reference number of the project activity	GS2457
Version number of the verification and certification report	1.1
Completion date of the verification and certification report	27/06/2018
Monitoring period number and duration of this monitoring period	Second monitoring Period Duration: 2 years, from 01/01/2016 -31/12/2017, both days included
Version number of monitoring report to which this report applies	2.1
Crediting period of the project activity corresponding to this monitoring period	First crediting period
Project participant(s)	Fastenopfer
Host Party	Kenya
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Energy demand (3.1) 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	70,497 tCO_2e
Certified GHG emission reductions or net anthropogenic GHG removals for this monitoring period	13,919 tCO_2e
Name of DOE	Bureau Veritas India Pvt. Ltd
Name, position and signature of the approver of the verification and certification report	Sapana Pednekar - Quality Manager- Operations

SECTION A. Executive summary

Bureau Veritas India Pvt. Ltd has conducted the second periodic verification of the project titled "Improved Jikos – Better Living for Rural Population"; with Gold Standard registration reference number GS2457. The project is developed by Fastenopfer, is located in Kenya (the host country), and applies the 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, and
b) UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.
The Gold Standard requirements are stipulated in the GS Requirements–version 2.2 and The Gold Standard Toolkit version 2.2; 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 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 & Opinion, was conducted using Bureau Veritas India Pvt. Ltd internal procedures.

In summary, Bureau Veritas India Pvt. Ltd confirms that the project is implemented as planned and described in the validated and registered project design documents. Installed equipment (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 13,919 tCO_2e 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 - 31/12/2017 (both dates included)
Baseline emissions:	Integrated in ER calculation formula
Project emissions:	Integrated in ER calculation formula
Leakage emissions:	0 t CO_2e
Emission Reductions:	13,919 t CO_2e.

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	Chirchir	James	**Bureau Veritas India Pvt. Ltd**	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**	**Mayieko**	**Samuel**	**Bureau Veritas India Pvt. Ltd**
2.	Approver	**IR**	**Pednekar**	**Sapana**	**Bureau Veritas India Pvt. Ltd**

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.	*Incorrect capture of the date of construction of each stove*	*High*	*Likelihood – more likely to occur due to manual data capture and transfer to excel based database.* *Impact - may lead to over estimation of the number of days the stove has been in use. Hence over estimation of ERs claimed*	*Carry out a site visit and randomly cross check a sample of receipts/Stove Purchase Agreement with the information in the database*
2.	*Inadequate transfer of survey information (Usage survey)*	*High*	*Likelihood – more likely to occur due to manual transfer of survey information from handwritten questionnaires to excel sheets* *Impact – may lead to a higher usage rate and hence over estimation of ERs claimed.*	*Carry out a site visit and randomly cross check a sample of hand-written survey records to determine whether the transfer of information was performed adequately*
3.	*Unreported project and leakage emissions*	*medium*	*Likelihood – less likely to occur since the methodology includes accounting for project and leakage emissions. A Forward Action Request had been raised related to leakage emissions.* *Impact – Over estimation of ERs claimed*	*Carry out a site visit and assess possible sources of leakages*
4.	*Incorrect calculations*	*High*	*Likelihood – more likely to occur due to reliance on excel spread sheets with less controls* *Impact – Over estimation of ERs claimed.*	*Recalculate ERs using parameters reported by PP to determine if the reported ERs can be reproduced*

C.2. Consideration of materiality in conducting the verification

Consideration of materiality began by determining the materiality threshold to be applied. A threshold of 5% has been considered. Bureau Veritas assessed the risks indicated in section C.1 above, based on acceptance 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 10 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 16 hand-written survey records were compared with information in the survey database. Discrepancies were noted in 2 out of the 16 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 CL 5 in appendix 4).
- Risk No.3 was assessed together with Forward Action Request # 1. The PP has assessed emissions associated leakages. From the assessment (as detailed in appendix 4 below), there no leakages. Bureau Veritas considers that the emissions associated with leakages is not material.
- Risk No.4, using the data and parameters reported by the PP, Bureau Veritas 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 1.0 dated 18/03/2018 (refer to doc 1 in Appendix 3) and emission reduction calculation spreadsheet dated 27/02/2018 (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 and internal audit of calculations.
The monitoring report version 1 submitted by the project participant has been made available to Gold Standard. Additional monitoring documentation were provided by the project participants and reviewed by Bureau Veritas including:
- Monitoring and Usage survey report (refer to docs 3 in Appendix 3);
- KPT report and datasheets (refer to docs 5 and 6 in Appendix 3);
Bureau Veritas also reviewed other sources of information for comparison of the reported values including:
- The registered PDD and the monitoring plan (refer to doc 11 in Appendix 3);
- Previous verification report (refer to doc 7 in Appendix 3)
- The applied monitoring methodology (refer to doc 8 in Appendix 3);

D.2. On-site inspection

Duration of on-site inspection: 26/04/2016 to 27/04/2016				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening meeting & Introduction (Project representative)	Kitui	26/04/2018	James Chirchir
2.	Visit technology users/ interview artisans	Kitui	26- 27/04/2018	James Chirchir
3.	Review of records (including sales records)	Kitui	27/04/2018	James Chirchir
3.	Interview with Enumerators	Kitui	27/04/2018	James Chirchir
4.	Closing meeting	Kitui	27/04/2018	James Chirchir

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Florence	Ndeli	Director, Caritas Kitui	26/04/2018	Project implementation	James Chirchir
2.	Knecht	David	Project Officer -Fastnopfer	26-27/04/2018	- Project implementation - Monitoring Plan - Monitoring data - QA/QC - Incentive mechanism - PFT/Survey records - SDIs - ER calculations	James Chirchir
3.	Peninah	Mwende	Project Coordinator - Caritas Kitui	26-27/04/2018	- Monitoring records control (e.g. Survey records, calibration records) - sales records - SDIs (Employment, Training) - Data QC/QA - Awareness creation	James Chirchir
4.	Muyanga	Benson	Data officer Caritas Kitui	26-27/04/2018	- Project Surveys - SDIs (Employment, Training) - Data entry - Stove monitoring - Database	James Chirchir
5.	Carol	Kalekye	Assistant Data officer, Caritas Kitui	27/04/2018	- Project Surveys - SDIs (Employment, Training) - Data entry - Stove monitoring	James Chirchir
6.	Ambrose	M	Field officer Caritas Kitui	27/04/2018	- Project Surveys - SDIs (Employment, Training) - Data entry - Stove monitoring	James Chirchir
7.	Paul	Kitheka	Project officer, Caritas Kitui	26-27/04/2018	Project Surveys - SDIs Stove sales - Data entry - Stove monitoring	James Chirchir
8.	Mulatya	David	Lead Artisan/ Enumerator (Kitui)	27/04/2018	- Control of stove quality - Experience in survey - Employment -Training	James Chirchir
9.	Mulinge	Charles	Lead Artisan/ Enumerator (Kitui)	26/04/2016		
10.	Maingi	Belita	Lead Artisan/ Enumerator (Kitui)	26/04/2016		
11.	Mumbi	Mulinge	User (Kitui)	26/04/2018	- Sustainable development indicators(air quality, time/money savings; access to clean energy services) - Stove usage - Baseline stove -KPT	James Chirchir
12.	Brettah	Phillip	User (Kitui)	26/04/2018		
13.	Mwende	Safari	User (Kitui)	26/04/2018		
14.	Emmanuel	Kioko	User (Kitui)	26/04/2018		
15.	Florence	Mbuvi	User (Kitui)	26/04/2018		
16.	Kavutha	Vumbu	User (Kitui)	26/04/2018		
17.	Fredrick	Mwangangi	User (Kitui)	26/04/2018		
18	Kanii	Juma	User (Kitui)	26/04/2018		

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
19	Kathini	Masila	User (Kitui)	26/04/2018	- Participation in surveys	
20.	Muli	Judith	User (Kitui)	26/04/2018		
21.	Micheal	Mutisya	User (Kitui)	26/04/2018		
22.	Munau	Syovata	User (Kitui)	26/04/2018		
23.	Hellen	Mutiso	User (Kitui)	26/04/2018		
24.	Rose	Maingi	User (Kitui)	27/04/2018		
25.	Ndinda	Ngau	User (Kitui)	27/04/2018		
26.	Francisca	Mulwa	User (Kitui)	27/04/2018		
27.	Beth	Kitheka	User (Kitui)	27/04/2018		
28.	Ann	Kavutha	User (Kitui)	27/04/2018		
29.	Esther	David	User (Kitui)	26/04/2018		
30.	Josphat	Musyoki	User (Kitui)	27/04/2018		
23.	Stella	Kamene	User (Kitui)	27/04/2018		
24	Nduti	Maundu	User (Kitui)	27/04/2018		
25.	Winfred	Julius	User (Kitui)	27/04/2018		
26	Anastacia	Justus	User (Kitui)	27/04/2018		
27	Angeline	Kikumu	HR Officer – Catholic Diocese of Kitui	27/04/2018	- Employment contracts	James Chirchir

D.4. Sampling approach

The assessment of records was based on random sampling. Bureau Veritas employed acceptance sampling as described in CDM Standard for Sampling and surveys for CDM project activities and programme of activities version 07.0. The following conditions were applied to determine the sample size taken by Bureau Veritas:
(a) Acceptable quality level or the Level of Assurance, i.e. the proportion of discrepancies between the PP sample records and Bureau Veritas sample records (i.e. DOE field/onsite inspection results) that are acceptable (AQL). AQL = 1%
(b) The proportion of discrepancies between the PP sample record and DOE sample records that are unacceptable, (UQL). UQL = 20%
(c) A 10% Producer's risk: That is a 10% chance that Bureau Veritas will wrongly reject the PPs records (i.e. reject a set of records of acceptable quality)
(d) A 20% Consumer's risk: That is 20% chance that Bureau Veritas will wrongly accept the PPs records (i.e. accept a set of records which is unacceptable)

The table below shows the minimum sample size for based on the above conditions and the actual sample size taken during site visit:

Activity to verified	Minimum Sample size	Actual sample size taken
Monitoring and usage surveys	8	16 questionnaires sampled and all respondents were visited
Sales records	8	10 receipts/stove purchase agreement
Kitchen Performance Test	8	8 Questionnaires reviewed and all respondents were visited

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	1	1	-
Compliance of the project implementation with the registered PDD	-	-	-

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Post-registration changes	-	-	-
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	-	-	-
Compliance of monitoring activities with the registered monitoring plan	3	3	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	1	-	-
Others (please specify)	-	-	-
Total	5	4	0

SECTION E. Verification findings

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

Means of verification	**Document reviewed**: The monitoring report version 1.0 dated 18/03/2018 was reviewed for compliance with instructions for filling in monitoring report forms contained in the forms.
Findings	Compliant
Conclusion	Bureau Veritas confirms that the revised monitoring report version 2.1 dated 19/06/2018 complies with the relevant form and instructions therein and GS requirements with respect to monitoring report.

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

Bureau Veritas has reviewed the responses to the forward action requests (FARs) raised at first verification and provided its opinion with respect to how the PP has addressed each of the FARs.

Forward Action Request # 1: *"Leakage assessment for all potential sources as mentioned in the PDD shall be carried out according to TPDDTEC-methodology in time for next verification."*

The PP has assessed all the potential sources of leakages as mentioned in the PP according to TPDDDTEC-methodology, indicating the leakage from, estimated risk and justification for the estimate. Bureau Veritas proceeded to evaluate each of the justification provided based on the estimate of the risk to ascertain whether the justification is acceptable or not. This is detailed in appendix 4 below. Bureau Veritas is of the opinion that the PP has adequately addressed the FAR as requested.

Forward Action Request # 2: *"The signed attendance sheet for trainings conducted in future shall also include a column specifying the gender of the person."*

The PP submitted a revised list of artisan training participants, which included a column specifying the gender of each participant. Bureau Veritas was able to crosscheck the raw data during the verification site visit. Bureau Veritas confirms that this FAR has been adequately addressed.

Forward Action Request # 3: *Documentation about the stakeholders project launch meeting in Machakos and/or Laikipia shall be submitted to GS once available. Bureau Veritas shall assess this documentation accordingly during validation (provided that it is available until the end of the validation process)."* And also: *"[…] to be checked at the time of first periodic verification."*

The PP has stated that the project is yet to expand. Bureau Veritas, based on documentation review and interviews conducted with PP representatives during verification site visit confirms that there is no project expansion at the moment. This FAR remains open.

It is Bureau Veritass opinion that the PP has addressed the FARs identified at verification, except FAR 3 which remains open. No FARs have been raised in this verification.

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 1 Appendix 3) and version 2.1 (ref doc 9 Appendix 3), registered PDD (ref doc 11 Appendix 3), Monitoring manual (ref doc 10 Appendix 3) **Site visit:** Interviews with PP's representative, monitoring team and stove users, and Observation of stove technology implemented
Findings	Compliant
Conclusion	Bureau Veritas has performed a site visit and found that the Project has been implemented as documented in the registered PDD. The PP has continued to install the brick-type rocket stove in Kitui. As detailed in the monitoring report section B.1 (ref doc 1 Appendix 3), the PP, due to management reasons, temporarily suspended cooperation with the regional implementing organization in Nyeri, Caritas Nyeri in early 2017. Hence, the claims for emission reductions is limited to Kitui. No changes to the project design have been identified during this verification. The implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PDD. Except for the number of stoves installed and usage rate, information (data and variables) provided in the monitoring report is the same as stated in the registered PDD. Fewer stoves were installed than projected in the registered PDD resulting to lower emission reductions as compared to the estimates in the PDD. Corresponding to the paragraph 359 of VVS for CDM PA version 01.0, Bureau Veritas can confirm that the implementation and operation of the Project is consistent with the registered PDD.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

Means of validation	Verification involved a) review of the registered PDD (ref doc 11 Appendix 3), b) Monitoring manual (ref doc 10 Appendix 3) c) Deviation request form version 2.0(ref doc 15 Appendix 3) d) Email correspondence c) Interviews (including face to face during onsite assessment and telephone, and email correspondence) with the PP; and d) on-site inspection To determine whether: - The deviations is an accurate reflection of the project implementation; - The deviations impacts the applicability of the applied methodology; and - The deviations impacts the design of the project
Findings	Non-compliant, CL 02 raised, addressed and closed out
Conclusion	Bureau Veritas has reviewed the registered PDD, monitoring manual and monitoring methodology to determine the monitoring and reporting requirement for monitored parameters. According to the monitoring plan, the parameter $\mathbf{P_{p,y}}$ (Quantity of woody biomass consumed in the project scenario in year y and per day in year y) should be updated every other year through a PFT. It was determined that the PP had delayed in conduction a PFT. The previous PFT was done in 2014 and the next PFT was done in 2017 instead of 2016. This has been raised as a temporary deviation from the registered monitoring plan. The results for the PFT (refer to the Kitchen Performance Test 2017 report and Data analysis (ref doc 5 and 6 in Appendix 3)) carried out in 2017, have been reviewed by Bureau Veritas. From the review Bureau Veritas was able to confirm that despite the one year delay, the PP has conducted the PFT in year 2017 in line with the procedures for conducting the performance tests and analyzing the results. Bureau Veritas considers the resulting values used for PFT from 2017 as acceptable based on site review assessment (refer to E.6.2.1) and would not result in material change in the estimation of emission reduction for 2016, applicability of the applied methodology and impact on the project design. Given that the PFT estimate has met the 90/30 rule, based on fuel savings, Bureau Veritas confirms that the value determined is conservative.

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** Bureau Veritas reviewed the following documents: Monitoring report version 1.0 (ref doc 1 Appendix 3) and version 2.1 (ref doc 9 Appendix 3), registered PDD (ref doc 11 Appendix 3), Monitoring manual (ref doc 10 Appendix 3), Applied methodology (ref doc 8 Appendix 3), to establish whether the monitoring plan was in line with the monitoring methodology.
Findings	Two clarification requested were raised and closed out(refer to CL 2 &, CL 4 in Appendix 4)
Conclusion	The verification team has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the registered PDD and applied methodology. Corresponding to the paragraph 362 of VVS for CDM PA version 01.0, Bureau Veritas can confirm that the 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, Bureau Veritas has crosschecked the values as reported in the monitoring report with values provided in the registered PDD and IPCC default values. Bureau Veritas 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: - $EF_{b,co2}$ - CO_2 emission factor arising from use of wood-fuel in baseline scenario (1.7472 tCO_2/t wood) - $EF_{b,non\text{-}co2}$ - Non-CO_2 emission factor arising from use of wood-fuel in baseline scenario (0.1356 tCO_2eq/t wood) - $EF_{p,co2}$ - CO_2 emission factor arising from use of wood-fuel in project scenario (1.7472 tCO_2/t wood (=112.0 tCO2/TJ * 0.0156 TJ/ t)). - $EF_{p,non\text{-}co2}$ - Non-CO_2 emission factor arising from use of wood-fuel in project scenario (0.1356 tCO_2eq/t wood). - $P_{b,y}$ - Quantity of woody biomass consumed in the baseline scenario in year y and per day in year y (2.81 t wood/year and 0.0077 t wood/day)

	Bureau Veritas 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 – $f_{NRB,i,y}$** (Non-renewability status of woody biomass fuel in scenario i during year y) **MoV:** Bureau Veritas has reviewed the registered PDD and monitoring methodology to determine the monitoring and reporting requirement of the parameter. The PP has applied a default official value (92%) approved by the DNA of Kenya (ref link). Bureau Veritas has assessed the application of the parameter in emission reductions calculation and confirms that it has been applied correctly. **Parameter 2 – $P_{p,y}$** (Quantity of woody biomass consumed in the project scenario in year y and per day in year y) **MoV:** Bureau Veritas has reviewed the registered PDD and monitoring methodology to determine the monitoring and reporting requirement of the parameter. The parameter is required to be updated every two years through Performance Field Tests (PFT). Previous PFT was done in 2014. Bureau Veritas established that a new PFT (refer to the Kitchen Performance Test 2017 report and Data analysis (ref doc 5 and 6 in Appendix 3)) was done in 2017. A clarification request was done for this deviation (refer to CL 2) and closed out. The PP has submitted request for temporary deviation (refer to section E.4.1 above) to the GS (ref doc 15, Appendix 3). Bureau Veritas sampled 8 raw data questionnaires to check the transfer of data in to the database for analysis. No inconsistencies were observed. In addition, Bureau Veritas visited all the 8 household who participated in the PFT to crosscheck the data provided. The information collected from the interview was deemed consistent to the provided data. Bureau Veritas has assessed the application of the value reported (i.e. 1.45 t wood/year or 0.0040t 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 Appendix 3 and doc 14 Appendix 3). For emission reduction calculations for this monitoring period, the results from the 2017 usage survey has been used by the PP. Bureau Veritas confirms that the PP has implemented the sampling plan described in the monitoring manual (ref doc 10 Appendix 3). The transfer of survey information (refer to risk no. 2 in section C.2. above) and data analysis has been reviewed. From the review Bureau Veritas considers that the result of the usage survey (a cumulative usage rate of 90.3 % in 2017) is acceptable and conservative since the cumulative usage rate was 93.3%. The PP has correctly monitored and applied the parameter in emission reductions calculation. **Parameter 4 – Project technologies credited (units)** **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. The sampling approach is described in section D.4. above. Bureau Veritas considers that the PP has monitored and reported the parameter as required. The following values are reported:

Year	Number of stoves for Kitui
2013	167
2014	575
2015	173
2016	2956
2017	1843
Total	5714

	Parameter 5 – $N_{p,y}$ (Project technologies days**)** **MoV:** The parameter was verified by randomly selecting 8 samples (ref sampled stoves listed in Appendix 5) from the sales database and comparing the information with the corresponding receipts/Stove Purchase Agreements, during site visit (refer to Risk No. in section C.2 above). The sampling approach is described in section D.4. above. Bureau Veritas considers that the PP has monitored and reported the parameter as required. The following value 2,372,100 ((2016(691,757 days) & 2017(1,680,343 days)) is reported and applied correctly in emission reductions calculation. **Parameter 6 – $LE_{p,y}$** (Leakage in project scenario p during year y) **MoV:** Bureau Veritas 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 as detailed in parameter 3 above. Bureau Veritas has also assessed the monitoring survey together with the usage survey. Bureau Veritas 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:** Bureau Veritas has reviewed project listing in the registries provided i.e. Gold Standard registry, UNEP Risoe CDM Pipeline. Bureau Veritas has also looked at the CDM registry and confirm no project covering the same geographical area and implementing the same technology has been registered. **Parameter 8 – Incentive scheme to abandon baseline technology (3-stone fires)** **MoV:** Bureau Veritas confirms that the PP has monitored the parameter as required through a monitoring survey. A rate of 2.6 % has been reported.
Findings	Three corrective action request (refer to CAR 1, CAR 2 & CAR 4) and three clarification requests (refer to CL 2, CL 3 & CL 4) were raised and closed out.
Conclusion	Corresponding to the paragraph 363 of VVS for CDM PA version 01.0, Bureau Veritas can confirm that: - The monitoring has not been carried out in accordance with the monitoring plan contained in the registered PDD, hence a temporary deviation has been requested by PP. - 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	**SDI 1: Air quality** Parameter monitored**:** number of positive comments from stove users Target**: 90%** (as in the registered PDD) **MoV:** Bureau Veritas reviewed the monitoring and usage survey report (ref doc 3 Appendix 3) and monitoring and usage survey data (ref doc 4 Appendix 3); and further held interviews with 16 stove users, who participated in the monitoring survey, during site visit. The result shows the parameter achieved 100%. Bureau Veritas considers that the SDI has a positive score in this monitoring period. **SDI 2: Quality of Employment** Parameter monitored**:** Number of artisans trained and active over time Target: **60%** (as in the registered PDD) **MoV:** Bureau Veritas carried out a site visit and reviewed records from training (including attendance list, Artisans manual, training report), records from quarterly artisan meetings; and held interviews with 3 lead artisans. The results indicate the parameter attained 67%, which is above the 60% target. Bureau Veritas considers the SDI to have a positive score in this monitoring period. **SDI 3: Livelihood of the poor** Parameter monitored: Time and money savings per week due to reduced fuel

	consumption Target: **1.5hr** less per week spent on collecting firewood, and/or **50 KSh** less per week spent on firewood **MoV:** Bureau Veritas reviewed the monitoring and usage survey report (ref doc 3 Appendix 3) monitoring and usage survey data (ref doc 4 Appendix 3). Bureau Veritas held interviews with 16 stove users, who participated in the monitoring survey, during site visit. The results indicated a savings of 2.6hr per week spent on collecting firewood and/or 72 KSh savings per week spent on firewood has been achieved, due to the project activity. Bureau Veritas considers that this SDI has a positive score in this monitoring period. **SDI 4: Access to affordable and clean energy services** Parameter monitored: Number of households using efficient cook stoves at end of project Target: **41,100** cook stoves are constructed at end of project **MoV:** Review of sales records. The results indicate that 5,714(5,159 stoves if usage rate of 90.3% is applied) stove have been implemented in this monitoring period against a projection of 25,100 (refer to the registered PDD) for the same period. This has resulted in around 32,498 people accessing affordable and clean energy services. This is considered a positive score. **SDI 5: Human/institutional capacity** Parameter monitored: Number of women trained as artisans and active over time Target: **25%** of trained artisans are women and **60%** of trained women artisans are present during the quarterly artisan meeting one year after completing the training **MoV:** Bureau Veritas carried out a site visit and reviewed records from training (including attendance lists) and records from quarterly artisan meetings. The results show that 46% of artisans trained are women, and 75% still report to meetings one year after completion of their training. Bureau Veritas considers that this SDI has a positive score in this monitoring period. **SDI 6: Quantitative employment and income generation** Parameter monitored: Number of people receiving income from project activity Target: **4** project staff and **5** lead artisans **MoV:** Bureau Veritas reviewed employment contracts records for Dennis Wambua (a driver), valid up to 31/09/2018; Benson Munyanga (Data/Monitoring & evaluation officer) valid up to 31/07/2018 and Caroline Kalekye (Assistant Data Officer) valid until 31/12/2018 during site visit. Bureau Veritas also held interviews with 3 lead artisan. The results indicated that there are 6 project staff, one staff on a part time basis, and 6 lead artisans employed, as a result of the project activity. Bureau Veritas considers that this SDI has a positive score in this monitoring period.
Findings	Compliant
Conclusion	Corresponding to the paragraph 363 of VVS for CDM PA version 01.0, Bureau Veritas 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.6.3. Implementation of sampling plan

Means of verification	**Document review** The following documents were reviewed: monitoring manual (ref doc 10 Appendix 3), monitoring and usage survey report (ref doc 3 Appendix 3) and monitoring and usage survey data (ref doc 4 Appendix 3). Bureau Veritas further assessed the survey procedures, sampling method, data entry and analysis. Bureau Veritas applied acceptance sampling as described in section D.4 above to determine that the PP has implemented the sampling plan in the registered PDD and monitoring

	manual. Interviews with PP's representative, monitoring team (including enumerators) and stove users were held during site visit.
Findings	Compliant
Conclusion	Bureau Veritas 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	The project activity does not involve direct measurement of parameters using measuring equipment. Measuring equipment is only used when carrying out Kitchen Performance Tests (KPTs). In 2017, a KPT was carried out and the results (including calibration of the electronic scale) were assessed at verification site visit. The calibration records are maintained by the PP.
Findings	Compliant
Conclusion	Calibration activities required for this monitoring period were conducted as planned.

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 document were reviewed: applied methodology (ref doc 8 Appendix 3), registered PDD (ref doc 11 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 8 Appendix 3), registered PDD (ref doc 11 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 8 Appendix 3), registered PDD (ref doc 11 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 8 Appendix 3), registered PDD (ref doc 11 Appendix 3), monitoring report (ref doc 1 Appendix 3), ER calculation spreadsheet (ref doc 2 Appendix 3), Kitchen Performance Test 2017 (ref doc 5 and 6 Appendix 3)
Findings	One Clarification Request (refer to CL 3) and three Corrective Action Request (refer to CAR1, CAR2 & CAR 8) were raised.
Conclusion	The details for emission reductions calculation during the monitoring period from

01/01/2016-31/12/2017 are provided in the ER calculation spreadsheet (ref doc 2 Appendix 3). Below is a summary of the calculations:

$ERy = \Sigma_{b,y} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,fuel} * (f_{NRB,b,y} * EF_{fuel,CO2} + EF_{fuel,\ nonCO2})) - LE_{p,y}$

Where:

Parameter	Value	Source of value
N_Y	Project Technology Days = 2,372,100 (2016(691,757 days) & 2017(1,680,343 days)	Stove Database 2017
U_Y	Cumulative Usage Rate = 0.903	Usage Survey 2017
P_Y	Fuel Savings = 0.0040 t wood/day-stove	calculated from PFT 2017
$f_{NRB,b,y}$	Non-renewable biomass fraction = 92.00%	CDM default value for Kenya
NCV	Net Caloric Value	Included in EF_{wood}
$EF_{wood,\ CO2}$	Emission Factor = 1.7472 tCO_2e/t wood	IPCC 2006 default
$EF_{wood,\ nonCO2}$	Emission Factor = 0.1356 tCO_2e/t wood	IPCC 2006 default (CH_4 + N_2O)
$\Sigma\ LE_Y$	Leakage LE = 0 tCO_2e/t year	Monitoring survey 2017

Bureau Veritas 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.

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** The following document were reviewed: registered PDD (ref doc11 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 70,497 tCO2e. The corresponding actual emission reduction in the monitoring period as reported in the monitoring report and verified by Bureau Veritas is 13,919 tCO2e, over the 2 year monitoring period. The emission reductions constitutes 4,059 tCO2e for the period 01/01/2016 - 31/12/2016 and 9,860 tCO2e for the period 01/01/2017- 31/12/2017

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 11 Appendix 3) and monitoring report (ref doc 1 Appendix 3)
Findings	Compliant
Conclusion	Bureau Veritas 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 fewer stoves installed (5,714 stoves) than projected in the PDD (25,100 stoves).

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 11 Appendix 3) and monitoring report (ref doc 1 Appendix 3)
Findings	Compliant
Conclusion	All emission reductions claimed fall under the period from 1 January 2013. 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 India Pvt. Ltd 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.
- The review encompasses all aspects related to the project which includes project design, baseline, monitoring plans 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, 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 to the GS registry.

SECTION G. Verification opinion

Bureau Veritas India Pvt. Ltd has performed the second periodic verification of the project titled “Improved Jikos – Better Living for Rural Population”, Gold Standard Reference Number GS2457, which is located in Kenya, and applying the methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)”. The verification was performed based on the requirements for Voluntary Offset Projects under the Gold Standard and the requirements set by CDM and relevant guidance provided by CMP and the CDM Executive Board. 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 Fastenopfer (the project participant) is 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 registered PDD. The development and maintenance of records and reporting procedures, in accordance with the plan including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas India Pvt. Ltd has verified the project Monitoring Report version 1.0 dated 18/03/2018 for the reporting period 01/01/2016 to 31/12/2017. Bureau Veritas India Pvt. Ltd 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 India Pvt. Ltd 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.

SECTION H. Certification statement

Bureau Veritas India Pvt. Ltd (Bureau Veritas) has performed the second periodic verification of the project titled "Improved Jikos – Better Living for Rural Population", Gold Standard Reference Number GS2457, which is located in Kenya, and applying the methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)". The verification was performed based on the requirements for Voluntary Offset Projects under the Gold Standard and the requirements set by CDM and relevant guidance provided by CMP and the CDM Executive Board. 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 Fastenopfer (the project participant) is 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 registered PDD. The development and maintenance of records and reporting procedures, in accordance with the plan including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas India Pvt. Ltd has verified the project Monitoring Report version 1.0 dated 18/035/2018 for the reporting period 01/01/2016 to 31/12/2017. Bureau Veritas India Pvt. Ltd 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 India Pvt. Ltd 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.

Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas India Pvt. Ltd confirms the following statement:

Reporting period:	01/01/2016 - 31/12/2017
Baseline emissions:	Integrated in ER calculation formula
Project emissions:	Integrated in ER calculation formula
Leakage emissions:	0 t CO_2 equivalents
Emission Reductions:	13,919 tCO_2 equivalents

Mr. James Chirchir
Team Leader
27/06/2018

Mr. Samuel Mayieko
Internal Technical Reviewer
27/06/2018

Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
EB	CDM Executive Board
ERs	Emission Reductions
FAR	Forward Action Request
GHG	Green House Gas(es)
GS	Gold Standard
GWP	Global Warming Potential
KPT	Kitchen Performance Test
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
PDD	Project Design Document
PP	Project Participant
SDI	Sustainable Development Indicator
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reductions
VVS	Validation and Verification Standard
PA	Project Activity

Appendix 2. Competence of team members and technical reviewers

Mr. James Chirchir	**Bureau Veritas India Pvt. Ltd**	**Team Leader, Climate Change Lead Verifier.** 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 9001:2015 and ISO 14001:2015 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.
Mr. Samuel Mayieko	**Bureau Veritas India Pvt. Ltd**	**Technical Reviewer, Climate Change Lead Verifier,** He has a degree in Physics with over 9 years of experience in renewable energy 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: verification of GS 879, verification of GS 477 and verification of 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	David Knecht	Monitoring report, version 1.0	18/03/2018	PP
2	Fastenopfer	Database and ER calculation	27/02/2018	PP
3	David Knecht, / Peninah Mwende, Paul Kitheka, Benson Muyanga; Caroline Bridget	Monitoring/Usage Survey 2017 Report, version 1	09/02/2018	PP
4	David Knecht, / Peninah Mwende, Paul Kitheka, Benson Muyanga; Caroline Bridget	Monitoring Usage Survey datasheet, 2017	18/03/2018	
5	David Knecht	Kitchen Performance Test Update 2017 Report, Version 01	25/09/2017	PP
6	David Knecht	KPT Data file 2017	25/09/2017	PP
7	Bureau Veritas India Pvt. Ltd	Verification report version 1.1	06/07/2016	DOE
8	GS	Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011	11/04/2011	DOE
9	David Knecht	Monitoring report, version 2.1	19/06/2018	PP
10	James Mathenge, Esther Muthoni, Carolin Kagiri, Peninah Mwende, David Knecht, Benson Muyanga	QA/QC and Monitoring Manual Carbon Offset Project, Version 2	08 October 2015	PP
11	Fastenopfer	Project Design Document version 3.3	26/01/2016	PP
12	UNFCCC	VVS for CDM PA	Version 1.0	CDM
13	TUV NOD	Validation report	03/03/2015	DOE
14	David Knecht, / Peninah Mwende, Paul Kitheka, Benson Muyanga; Caroline Bridget	Monitoring/Usage Survey 2016 Report, version 1	21/02/2017	PP
15	David Knecht	Deviation Request form, ver 2.0	26/06/2018	PP

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

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

FAR ID	FAR 1	**Section no.**		**Date:** 08/05/18
Description of FAR				
"Leakage assessment for all potential sources as mentioned in the PDD shall be carried out according to TPDDTEC-methodology in time for next verification."				
Project participant response				**Date:** 08/05/18
The leakage assessment is included here below as per TPDDTEC-methodology:				
Documentation provided by project participant				
Details of assessments are included as part of monitoring report on section B.2.7				
DOE assessment				**Date:** 08/05/18
These has been assessed as detailed, FAR 1 is closed out.				

Leakage form	Estimate of risk	Justification	DOE's Comment
a) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.	No risk	The technology displaced is the 3-stone fire, which is the major cooking method in areas outside project boundary already, as well as inside the project boundary. This technology consists of 3 stones placed on the ground and if wished could be constructed by any user by just taking 3 stones. Moreover, the 3 stone fire is the least efficient technology and it is unlikely that households applying a more efficient, more convenient and lower emitting technology (such as LPG, Kerosene, electricity) would switch back to the 3 stone fire.	Based on document review of the monitoring report(ref doc 3 in appendix 3), registered PDD(ref doc 11 in appendix 3); validation report(ref doc 13 in appendix 3) and Bureau Veritas common knowledge of the cooking technologies in the project area, the use of 3-stone fire is already in place outside the project area. PPs opinion that this efficient technology is unlikely to be reused outside the project boundary is justified
b) The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources.	No risk	Almost 90% of the households in Kenya use firewood for cooking on a traditional 3-stone fire, which is the least efficient cooking technology available. Households using this technology are at the bottom of the energy pyramid. Thus, the vast majority of non-project users use a higher emitting cooking technology. Households using other	Based on document review of the monitoring report (ref doc 3 in appendix 3), registered PDD (ref doc 11 in appendix 3); validation report (ref doc 13 in appendix 3) and Bureau Veritas common knowledge of the cooking technologies (the use of inefficient 3-stone fire) in the project area, it is unlikely that the non-renewable biomass saved under the project

		energy sources and technologies such as LPG stove, electric stove or kerosene stove (which may be lower emitting) are located higher up in the energy pyramid with higher living standard and higher expenses for fuel compared to the project's target population. Such non-project users will not give up their higher cooking comfort and go back to using firewood on a less efficient cooking technology in case project households would give away the wood saved due to application of the efficient cook stove. Thus, there is no likelihood that non-renewable biomass saved under the project activity is channeled to non-project users with lower emitting energy sources.	activity are used by non-project users, who are already using the same. The PPs explanation is deemed justified.
c) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario	No risk	The fNRB value applied is the official CDM default value for Kenya, which was also approved by the Kenyan DNA. There is no known CDM or VER project activity in the project area and thus no likelihood the project will affect another CDM or VER project activity for its NRB fraction.	The PP has chosen to use a default fNRB as approved by the DNA of Kenya. Bureau Veritas has also reviewed project listing in the registries provided i.e. Gold Standard registry, UNEP Risoe CDM Pipeline. Bureau Veritas has also looked at the CMD registry and confirm no project covering the same geographical area and implementing the same technology has been registered, and therefore there is no likelihood project will significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario
d) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by	No risk	In Kitui space heating is not common. Only 29% indicate using space heating. However, for this subgroup of heating households we find that 93% indicate that their kitchen is within their main	The PP conducted sampling and carried out a monitoring and usage survey as required in the registered PDD (ref monitoring and usage report, doc 3 Appendix 3). The transfer of survey information and data analysis has been reviewed during site visit. From

retaining some use of inefficient technology		house (Monitoring Survey 2017). In other words, in the case of these households the heating occurs as a side product of the cooking process, with or without the stove. Thus, the project does not cause people to change heating patterns. Therefore, we do not incur leakage due to space heating.	the review, Bureau Veritas considers that the result of the monitoring and usage survey as acceptable. In addition, the information was crosschecked from the interviews with the stove owners during the verification site visit. Therefore, that there is no likelihood to incur leakage due to space heating is justified.
e) The project stipulates substitution within households who commonly used a technology with relatively lower emissions.	No risk	The baseline stove is the 3-stone fire, which has higher emissions than other cooking devices available. The project specifically targets households using the 3-stone fire prior to the project.	Based on document review of the monitoring report (ref doc 3 in appendix 3), registered PDD (ref doc 11 in appendix 3); validation report (ref doc 13 in appendix 3) and Bureau Veritas common knowledge of the cooking technologies (the use of inefficient 3-stone fire) in the project area, the 3-stone fire has higher emissions than other cooking devices available and therefore its substitution, and hence leakage is highly unlikely.

FAR ID	FAR 2	**Section no.**		**Date:** 08/05/18
Description of FAR				
"The signed attendance sheet for trainings conducted in future shall also include a column specifying the gender of the person."				
Project participant response				**Date:** 08/05/18
This has been done for all artisan trainings and meetings in 2016 and 2017 (see evidence file "Artisan_Participant_List_2016_2017.xlsx").				
Documentation provided by project participant				
"Artisan_Participant_List_2016_2017.xlsx").				
DOE assessment				**Date:** 08/05/18
The verification team has reviewed the provided artisan participant list and the same during verification site and concludes that the column to capture gender has been provided and data included during the trainings. FAR 2 is closed out.				

FAR ID	FAR 3	**Section no.**		**Date:** 08/05/18
Description of FAR				
Documentation about the stakeholders project launch meeting in Machakos and/or Laikipia shall be submitted to GS once available. Bureau Veritas shall assess this documentation accordingly during validation (provided that it is available until the end of the validation process)." And also: *"[…] to be checked at the time of first periodic verification."*				
Project participant response				**Date:** 08/05/18
The project has not yet expanded into the said project areas. Thus, no additional project launch meetings were held.				

Documentation provided by project participant	
None	
DOE assessment	**Date:** 08/05/18
Bureau Veritas, based on documentation review and interviews conducted with PP representatives during verification site visit confirms that there is no project expansion at the moment. FAR 3 remains open.	

Table 2. CL from this verification

CL ID	CL 1	**Section no.**	Cover page	**Date:** 08/05/18
Description of CL				
The monitoring period is indicated a: 2 years 01.01.2016-31.12.2017. The PP is requested to clarify whether the first and last days are included or not.				
Project participant response				**Date:** 08/05/18
The monitoring period includes both days. The 01.01.2016 and the 31.12.2017.				
Documentation provided by project participant				
None				
DOE assessment				**Date:** 08/05/18
The explanation is deemed satisfactory, CL 1 is closed out.				

CL ID	CL 2	**Section no.**	D.2	**Date:** 08/05/18
Description of CL				
The PFT is to be updated every two years. The first PFT was done in Jul/Aug 2014 and the second was done in June 2017. Please clarify why frequency was not observed.				
Project participant response				**Date:** 09/05/18
The frequency was not observed because of two reasons: *a) The second PFT would have been due in June 2016. However, this was only a few weeks after first project verification. Being the very first verification, the project verification in 2016 was a major exercise for the whole team and thus it was not possible to prepare an important exercise such as the PFT update in such short time.* *b) The project team decided in 2016 that next project verification would be in 2018. It was therefore decided that carrying out the PFT update in 2017 would allow us to have "fresh" PFT values when applying for verification. In other words, the project wanted to ensure that the data provided would be as recent as possible and reflecting realities on the ground.*				
Documentation provided by project participant				
Email communications between PP and the GS. *Deviation request from version 2.0 submitted to the GS on 26/06/2018* *Email communication from GS dated 26/06/2018 & 27/06/2018*				
DOE assessment				**Date:** 27/06/2018
The explanation is deemed plausible and is accepted by the verification team From the email correspondence of GS with PP (email dated 26/06/2018 & 27/06/2018), Bureau Veritas needs to approve a justifiably accurate and/or conservative value for the KPT in the missing year. If, in the opinion of Bureau Veritas, the current data does not meet this requirement, PP needs to propose a value to Bureau Veritas's satisfaction. The verification team, during the site visit, verified the parameters for PFT conducted in 2017 as detailed in section E.6.2.1 above. Since the results from the most recent PFT is used in this monitoring period, and the deviation of PFT monitoring from 2016 to 2017 had been brought to the attention of the GS as per emails reviewed, the clarification CL 2 is closed out.				

CL ID	CL 3	**Section no.**	D.2	**Date:** 08/05/18
Description of CL				

In the calculation of Project technology days Np,y, it is observed that several stoves worked for 366 days in 2016(Column V of "Database" in ER Calculations spreadsheet). Please justify the use of 366 days and not 365 days for year 2016.
Project participant response **Date:** 09/05/18
Year 2016 was a leap year. This is why stoves built before 2016 indicate 366 working days in 2016.
Documentation provided by project participant
None
DOE assessment **Date:** 15/05/18
The explanation has been reviewed and explanation is accepted. CL 3 is closed out

CL ID	CL 4	**Section no.**	C	**Date:** 08/05/18
Description of CL				
The value indicated as 5.1 %, Incentive scheme to abandon baseline technology (3-stone fires) may be incorrect. Page 7 of the monitoring/Usage survey report indicates this as value for 2016, and 2.6 % for 2017. Please clarify.				
Project participant response				**Date :** 09/05/2018
The value indicated in the monitoring report was indeed incorrect (referring to 2016) and has been updated accordingly to 2.6%, the value from the 2017 survey.				
Documentation provided by project participant				
2018_Monitoring_Report_GS2457_V2.doc				
DOE assessment				**Date:** 15/05/2018
The revised MR has been reviewed, and the corrected value has been provided. CL 4 is closed out.				

CAR ID	CL 5	**Section no.**	Production and Transport emissions	**Date:** 08/05/18
Description of CAR				
The PP is requested to clarify steps being taken to ensure human errors in the transfer of data from the questionnaires to data base are eliminated or minimized during regular surveys. The following errors were observed during site visit; *Usage Surveys:* *Form K/25 – Date of survey was indicated as 22/10/2017 while date on database was 22/11/2017. In addition, the date of construction was indicated as 19/3/17 while on database it was 17/03/17* *Monitoring surveys;* *Form K/130 – Firewood was collected by children in the form while database indicated wife*				
Project participant response				**Date:** 09/05/2018
The project has taken measures to prohibit such errors in the future. As of October 2018, the project will test a smartphone application (Kobo Collect), in which surveys such as the usage/monitoring survey will directly be entered by enumerators. Following, survey data will directly be transmitted to a cloud from where the data team will download and process (analyse) the survey data. This will make human error in data transition much less likely. In fact, there won't be any hard copies of surveys anymore, only the online accessible database fed directly with data from the field surveys.				
Documentation provided by project participant				
None				

DOE assessment	Date: 15/05/2018
The verification team was shown during this verification site visit how the new application will be used. Based on the explanation provided, the corrective steps are deemed plausible and CL 5 is closed out.	

Table 3. CAR from this verification

CAR ID	CAR 1	Section no.	Cover page, Section A.1	Date: 08/05/2018
Description of CAR				
The value of emission reductions stated in page 1 as attained for the 2 years monitoring period(13,920 tCO2e) is inconsistent with the value stated in page 2(13,922 tCO2e).				
Project participant response				**Date:** 08/05/2018
The correct value is 13,920 as indicated in the document "ER_Calculation_2nd_crediting_cycle_V3.xlsx". The value in page 2 has been corrected accordingly.				
Documentation provided by project participant				
2018_Monitoring_Report_GS2457_V2.doc				
DOE assessment				**Date:** 15/05/2018
The inconsistency has been reviewed and is found OK. However, from the spreadsheet provided, and based on the decimal points, the PP is requested to clarify why 13,920 is adopted as the overall ER attained for the period and not 13, 919 based on conservativeness rule. CAR 1 is open.				
Project participant response				**Date:** 19/06/2018
The PP was not aware that not simple mathematical rounding applies to the overall ER calculation. This has been adjusted in the Monitoring Report V2.1 and the GS Registry Issuance Request.				
Documentation provided by project participant				
2018_Monitoring_Report_GS2457_V2_1.doc				
DOE assessment				**Date:** 23/05/2018
The correction has been reviewed and found OK, CAR 1 is closed out				

CAR ID	CAR 2	Section no.	D.2	Date: 08/05/2018
Description of CAR				
The value for monitored parameter $U_{p,y}$ is indicated as 90.3 %. However, the reference spreadsheet from which the value is derived from is not in English. Please correct/provide English version of the spreadsheet.				
Project participant response				**Date:** 08/05/2018
Pivot Tables include some titles on the laptop default language (which was German). The pivot table calculating the U(p,y) has been updated to provide all headers in English language. The same is included in document "ER_Calculation_2nd_crediting_cycle_V3.xlsx" spreadsheet "analysis".				
Documentation provided by project participant				
ER_Calculation_2nd_crediting_cycle_V3.xlsx				
DOE assessment				**Date:** 15/05/2018
Corrections have been reviewed and found satisfactory, CAR 2 is closed out.				

CAR ID	CAR 3	Section no.		Date: 08/05/2018
Description of CAR				
The units of measure for the parameters provided in spreadsheet "20170925-KPT Data-File-2017" are not consistently indicated. Please indicate.				
Project participant response				**Date:** 09/05/2018
The document "20170925-KPT Data-File-2017_V2" now indicates consistently the value of measure.				
Documentation provided by project participant				
20170925-KPT Data-File-2017_V2				
DOE assessment				**Date:** 15/05/2018
The units of measure have been provided, CAR 3 is closed out.				

CAR ID	CAR 4	Section no.	E.4/E.2/E.5	Date: 08/05/2018
Description of CAR				
Inconsistencies have been noted in the values for the following parameters in the monitoring report, and ER calculations spreadsheets: *Baseline emissions for 2016 & 2017 in section E.4 of MR compared to section E.2 of MR and the ER spreadsheet* *Project emission for 2016 in section E.4 compared to section E.2 of the MR and the ER spreadsheet provided* *The actual value of actual ER achieved as indicated in section E.5 of the MR is inconsistent with the ER spreadsheet*				
Project participant response				**Date:** 08/05/2018
The inconsistencies have been corrected in the MR section E. The MR contained values for BE and PE of previous ER calculations. However, the claimed overall ER amount was not affected.				
Documentation provided by project participant				
2018_Monitoring_Report_GS2457_V2.doc				
DOE assessment				**Date:** 15/05/2018
PE for 2017 is still in conflict(10,477(Section E.2 of MR, vs 10,468 in section E.4				
Project participant response				**Date:** 19/06/2018
The inconsistency has been corrected in the MR version 2.1.				
Documentation provided by project participant				
2018_Monitoring_Report_GS2457_V2.1.doc				
DOE assessment				**Date:** 23/05/2018
The inconsistencies have been removed, CAR 04 is closed out				

Table 4. FAR from this verification

FAR ID	Not applicable	**Section No.**	N/A	**Date:** DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				**Date:** DD/MM/YYYY
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				**Date:** DD/MM/YYYY
N/A				

Appendix 5. Stoves sale/Database reviewed

1. K/MTN/00046
2. K/MBN/00035
3. K/KC/00633
4. K/KC/00819
5. K/KC/00959
6. K/KC/01090
7. K/KW/M/00038
8. K/KR/00430