

Gold Standard Verification Report

**“Improved Cookstoves for Social Impact in Ugandan
Communities”**

GS Project No. 447

Monitoring Period: 01/01/2014 – 31/03/2014

For
Impact Carbon

Report Ref No. GS.VER.15.30 (MP08) version 2

Executive Summary:

A) Basic information			
Project title	Improved Cookstoves for Social Impact in Ugandan Communities		
GS registration number	447		
UNFCCC ref number	N/A		
Date of registration	26/03/2009		
Sectoral scope	3: Energy Demand		
Methodology/ies applied	Improved Cook-stoves and Kitchen Regimes, Version 01 ("Methodology v.01")		
Project participant	Impact Carbon		
B) Verification			
Start date of crediting period	01/01/2006		
Monitoring Period	01/01/2014 – 31/03/2014		
Emission Reductions verified	139,689 tCO₂e		
C) Monitoring report	Version	Date	
Submitted to Earthhood	1.0	07/07/2015	
Final	5	20/11/2015	
D) Verification report	Version	Date	
Draft	1.0	28/09/2015	
Final	3.0	23/11/2015	
E) Verification Team			
Team Leader	Shreya Garg		
Verifier	Shreya Garg		
Technical Expert (TA 3.1)	Ashok Kumar Gautam		
F) Approvals			
Technical Reviewer	Abhishek Mahawar	Date	23/11/2015
Technical Expert (TA 3.1)	Ashu Sharma		
G) Final opinion			
<p>Earthhood has performed the verification of the GS Project "Improved Cookstoves for Social Impact in Ugandan Communities" GS Ref. Number 447. The verification includes confirming the implementation of the monitoring plan of the registered PDD version 9 and the application of the monitoring methodology 'Improved Cook-stoves and Kitchen Regimes, Version 01 ("Methodology v.01")'. Earthhood confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the above referred GS project activity during the period 01/01/2014 – 31/03/2014 (including both days) amount to 139.689 tonnes of CO₂e.</p>			
H) Authorization			
Managing Director	Kaviraj Singh		
Date	23/11/2015		
I) Distribution			
No public distribution without written confirmation from client.			

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
GS	Gold Standard
EB	Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
RMP	Revised Monitoring Plan
UNFCCC	United Nations Framework Convention on Climate Change

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1. INTRODUCTION

1.1 Objective

Impact Carbon has contracted Earthood Services Private Limited (Earthood) to conduct the verification and certification of emission reductions reported for the GS Project GS 447 “Improved Cookstoves for Social Impact in Ugandan Communities” for the monitoring period 01/01/2014 – 31/03/2014. This report contains the findings of the verification process and a certification statement for the certified emission reductions.

The verification is the periodic independent review and *ex post* determination by Earthood of the monitored reductions in GHG emissions that have occurred as a result of the registered GS Project activity during a defined monitoring period. Certification is the written assurance by Earthood that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the project activity “Improved Cookstoves for Social Impact in Ugandan Communities” for the period 01/01/2014 – 31/03/2014.

1.2 Scope

The scope of the verification is to establish and verify that;

- a) The project activity has been implemented and operated as per the registered PDD and all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place.
- b) The monitoring report and other supporting documents provided are complete in accordance with the latest applicable version of the completeness checklist for requests for issuance of VERs, verifiable, and in accordance with applicable GS requirements.
- c) The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan, any revised approved monitoring plan, the approved methodology including applicable tool(s) and/or, where applicable, the approved standardized baseline;
- d) The data recorded and stored as per the monitoring methodology including applicable tool(s).

The verification report includes the following;

- a) Emission reduction
- b) Leakages
- c) Changes to the key sustainable development indicators
- d) Achievement and implementation of mitigation/compensation measures, according to the success indicators established in the monitoring plan of registered PDD and passport
- e) Response by project participants to the grievances raised by local stakeholders

2. METHODOLOGY

2.1 Desk Review

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols/checklists. The assessment team cross checks the information provided in the documents (PDD, MR) and

information from sources other than those used, if available, and also conducts independent background investigations. Earthhood conducted a desk review as under;

- a) A review of the data and information presented to verify their completeness;
- b) A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- c) An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

The complete list of documents reviewed is included under Section 5.

2.2 Site Visits

The assessment involved a desk review of relevant documentation as well as an on-site visit(s). The site visit for the project location, by the assessment team, was conducted from 18/08/2015 to 20/08/2015. The role of each member of assessment team is mentioned below and their CVs are included in Section 7 of the report.

Table 1: Details of assessment team

Role	Name	Nature of involvement					
		Desk Review	On Site Visit	Reporting	Supervision	Technical Review	TA Expert
Team Leader	Shreya Garg	Y	Y	Y	Y		-
Technical Expert	Ashok Kumar Gautam	Y	N	Y	Y		Y
Technical Reviewer (TR)	Abhishek Mahawar					Y	N
Technical Expert at TR	Ashu Sharma					N	Y

Table 2: List of the person interviewed on site

S.No	Name	Affiliation	Topic of discussion
1	Sandeep Melana	Impact Carbon	Gold Standard procedures
2	Brendan Sullivan	Impact Carbon	Management and operation of the project
3	Kirabo Noah	Impact Carbon	Training etc.
4.	Akankunda Moreen	Impact Carbon	Baseline, project monitoring

2.3 Reporting of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and nonconformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

- a) Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient
- b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants
- c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions
- d) Change to the key sustainable development indicators
- e) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable GS requirements have been met. All CARs and CLs raised by the Earthood during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

All the findings that are raised and communicated to project participant during the verification are included under Section 6. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.4 Quality Control & Technical Review

A draft verification report that is prepared by assessment team will be reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable Gold Standard and CDM requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team. The report approved by Quality Manager is endorsed by Managing Director, who is overall responsible to ensure quality, before final release. The further details of applicable procedures and responsibilities about Earthood Quality Management System (QMS) are available on its website (www.earthood.in).

3. VERIFICATION FINDINGS

This section summarises the findings of the verification.

3.1 Remaining Issues (FAR(s) from validation or previous verification)

There were four FAR(s) raised during the sixth verification of the project activity; out of which three FARs were closed out during the seventh verification but one FAR has been sustained for the complete crediting period. The monitoring period for the current verification falls under the first crediting period and therefore the FAR has to be analysed. The unresolved FAR raised during sixth verification was "The PP is requested to continue with the existing incentive mechanism and evaluate

the performance in the end of the next monitoring period.” The PP has included a description of the continuation of the incentive mechanism. The verification team was also provided the posters, fliers and warranty cards. Therefore the team is of the opinion that admissible steps were adopted by the PP to ensure widespread knowledge and benefits of the improved cook stoves and discouragement of the traditional stoves. The benefits from the disseminated stoves on the health of the users was also assessed and has been included in the forthcoming section of the report. The FAR is therefore adequately attended and therefore closed. In addition there were 3 FARs highlighted during the GS review for the previous verification period.

FAR -1 (From Issuance 6)

It is recommended that the PP shall increase the sample size during Kitchen Surveys so as to ensure that a representative sample group for commercial charcoal stove users is reached.

Justification: A larger sample size to include a minimum sample of 100 had already been adopted (compared to earlier sample size of 30) which is in conformance to the version 3 of the applied methodology.

FAR – 2 (Verification report – Issuance 7)

The PP shall continue the incentive mechanism to discourage the parallel use of baseline stove.

Justification: the incentive mechanism has been discussed in detail under point (a) of CAR 05. The supporting documents have been verified and the team concluded that the information provided in the Monitoring report is accurate and relevant.

FAR - 3

The verifying DOE is requested to include the summary of discussion/interview with end users/representatives and field observations about cookstove condition in verification report.

Justification: An end user stakeholder survey was included in the section 3.5.1 of the verification report. The list of the stakeholders interviewed during physical verification, topics discussed and feedback received has been included for transparency.

3.2 Project implementation

The project has been implemented in accordance with the registered Gold Standard Project titled ‘Improved Cookstoves for Social Impact in Ugandan Communities’. Project Design Document is registered against methodology “Methodology for Improved Cook-stoves and Kitchen Regimes” V.01.

Through the implementation of this project, the improved cook stove replaces the traditional stove thereby contributing to a reduction in carbon emissions and improvement of environmental conditions of the local community as outlined in the registered design documents.

The design specifications of the cook-stoves distributed under the project were checked by the verification team and found to be conforming to the information provided in the GS-registered design documents. The implementation schedule has been adequately covered in the MR and was duly verified during the on-site assessment.

QA/QC procedures, as detailed in the registered Project Design Document have been followed during the implementation of the project. However, the discrepancies in the monitoring of parameters and monitoring approach in the monitoring report that are not consistent with the registered PDD in terms of unit and measurement procedures are discussed in the findings. The data/parameters that are monitored for the calculation of emission reductions are also discussed in the following sections.

3.3 Project Design Change (non-material), if any

There are no post registration changes that are identified during this monitoring period.

3.4 Verification of monitoring parameters (Carbon)

The sections below describe how each parameter, which is measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has thoroughly been assessed and that the calibration requirements are met.

3.4.1 Stove Sales

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Recorded on a daily basis
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	The stove sales record is maintained in a sales database includes the date of installation, beneficiary name, ID number, location, type of stove for all the households that receive a stove. The measuring and recording frequency of this parameter was found in line to the monitoring plan and methodology requirements /16,30/
Monitoring equipment	None required for monitoring.
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not applicable
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A

Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	Verified Value: 408,809 total charcoal stoves. 273 total fuel wood stoves. The verification team accessed the sales database on computers and random sampling checks done on site with the records /9/.
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in the MR was cross checked by doing on-site surveys /9/
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, The central sales database is maintained by Impact Carbon management, and quality checks are made for avoiding the possibilities of errors /9/

3.4.2 Project Fuel Consumption

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Biennial surveys were conducted /11-15, 28/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	The monitoring frequency is in line to the monitoring plan and monitoring methodology
Monitoring equipment	Manual surveys are conducted and hence no monitoring equipment are used /9/
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A

Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	Reported value: 0.069 kg per person-meal A copy of the survey conducted in 2010 and 2012 was verified, also the value was verified from the previous verification documents. /13,14/
If applicable, has the reported data been cross-checked with other available data?	The survey is conducted by a third party – Berkeley Air Monitoring Group in 2010 and aging kitchen tests for fuel performances were conducted by another party CIRCODU/11/. The report concluded that the fuel consumption is about the same and slight difference can be attributed to random cooking variations. The value was found acceptable in view of the technical expert as the value is comparable to the wood fuel consumed in regions under similar conditions.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, The values calculated by third party are used for emission reduction calculations and the study was conducted following adequate QA/QC procedures /14, 28/.

3.4.3 Clustering definitions

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	For Kitchen Surveys: Quarterly For Kitchen Tests: Biannually

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes, the value is in accordance to the registered PDD/1/ and monitoring methodology./4/
Monitoring equipment	N/A
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges? Calibration frequency /interval:	N/A N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	<p>The definitions for Cluster has been kept same as defined in the earlier verifications. The Cluster have been defined as Charcoal stoves representing stoves of sizes ranging from 1 to 5 and the project monitoring is taking place based on the fuel savings per person meal. The monitoring in the current period has been carried out following the same definition of cluster.</p> <p>The results were verified from the Kitchen Surveys, report has also been submitted to the assessment team. /12/</p>

If applicable, has the reported data been cross-checked with other available data?	N/A
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes

3.4.4 Usage Factor

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	<p>Surveys are conducted on a sample group of at least 30 households for each age category of stove by year.</p> <p>349 household surveys were conducted by third party CIRCODU which are applicable for the concerned monitoring period. The report issued by the third party was checked by Earthhood's teams. 50 households were checked by the verification team through site visits. The households comprised of stoves built since 2006 in order to confirm representativeness of the sample. The samples confirmed reported figures /9, 25/.</p>
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
Monitoring equipment	N/A
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the	N/A

manufacturer's specifications?																					
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A																				
Is (are) calibration(s) valid for the whole reporting period?	N/A																				
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A																				
How were the values in the monitoring report verified?	<p>Usage figures were updated to reflect complete and accurate calculations. The values listed in the Usage survey analysis are verified from the Usage Monitoring report, (Charcoal and Institutional Wood) as follows:</p> <table border="1"> <thead> <tr> <th>Stove Age Group</th> <th>Usage Rate</th> </tr> </thead> <tbody> <tr> <td>0, 1</td> <td>97.67%</td> </tr> <tr> <td>1, 2</td> <td>86.67%</td> </tr> <tr> <td>2, 3</td> <td>82.93%</td> </tr> <tr> <td>3, 4</td> <td>77.42%</td> </tr> <tr> <td>4, 5</td> <td>83.72%</td> </tr> <tr> <td>5, 6</td> <td>63.89%</td> </tr> <tr> <td>6, 7</td> <td>82.61%</td> </tr> <tr> <td>7, 8</td> <td>61.54%</td> </tr> <tr> <td>8,9</td> <td>40.00%</td> </tr> </tbody> </table> <p>The reported values are found okay during onsite visits and desk review /9/</p>	Stove Age Group	Usage Rate	0, 1	97.67%	1, 2	86.67%	2, 3	82.93%	3, 4	77.42%	4, 5	83.72%	5, 6	63.89%	6, 7	82.61%	7, 8	61.54%	8,9	40.00%
Stove Age Group	Usage Rate																				
0, 1	97.67%																				
1, 2	86.67%																				
2, 3	82.93%																				
3, 4	77.42%																				
4, 5	83.72%																				
5, 6	63.89%																				
6, 7	82.61%																				
7, 8	61.54%																				
8,9	40.00%																				
If applicable, has the reported data been cross-checked with other available data?	Randomly selected households were visited to cross check the information available on database /30,9/																				
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Usage surveys are conducted by third party. /9/																				

3.4.5 Age Factor

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Surveys are conducted by third party every two years
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
Monitoring equipment	N/A
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	The age factor was identified during the KPTs performed by Berkeley which concluded that baseline and project fuel consumption values remain same for full set of stove vintages for charcoal stoves. The aging stoves were re-monitored in 2012 by another agency and found insignificant change in the fuel use. Therefore no change in the values since last verification has been accepted by the assessment

	team as they deemed to be valid for the current verification./10,11/
If applicable, has the reported data been cross-checked with other available data?	The value used for calculation has been checked from the source report and also from the previous verification reports./2 ,10/
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Usage surveys are conducted by third party. /9/

3.4.6 New Stove Performance

No new stove models/clusters have been added in the current monitoring period as verified from the sales database/15/ submitted to the verification team and records verified during the onsite assessment. The manufacturers were also visited during the onsite assessment and therefore the parameter has not been assessed.

3.4.7 Market Development

The sales records/database were assessed during the physical verification by the assessment team and it can be concluded that the monitoring of the parameter has been conducted at required frequency. During the field interviews it was informed that the local team is working towards the development of markets around Kampala and rural areas upcountry. Supportive material substantiating the information was made available to the team.

3.4.8 Non- Renewable Biomass fraction

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Same as reported in previous verification/2/. Value will be assessed biennially however the CDM default value for Uganda has been used
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes, there is no reason for assessment team to believe that the value has changed significantly from the previous years because the CDM default value has not changed for Uganda.
Monitoring equipment	CDM default
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	CDM default value has been used.
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes

Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	Reported value: 0.82. The reported values was verified from the CDM website review /9/
If applicable, has the reported data been cross-checked with other available data?	Yes, literature review
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	No QA/QC procedures are applicable since the parameter is not monitored by the PP. Also, the parameter is a default value.

3.4.9 Baseline Fuel Consumption

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Biennial surveys were conducted /11-15, 28/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	The monitoring frequency is in line to the monitoring plan and monitoring methodology
Monitoring equipment	Manual surveys so no monitoring equipment in use /9/

Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	<p>A copy of the survey conducted in 2010 and 2012 was verified, also the value was verified from the previous verification documents/2/.</p> <p>The values are as follows:</p> <p>Domestic charcoal: 0.193 kg/person-meal</p> <p>Commercial charcoal: 0.245 kg/person-meal</p> <p>Institutional wood: 0.199 kg/person-meal</p>
If applicable, has the reported data been cross-checked with other available data?	<p>The survey is conducted by a third party – Berkeley Air Monitoring Group in 2010 and aging kitchen tests for fuel performances were conducted by another party CIRCODU. The report concluded that the fuel consumption is about the same and slight difference can be attributed to random cooking variations. The value was found acceptable in view of the technical expert as the value is comparable to the wood fuel consumed in regions under similar conditions./10,11/</p>

Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, The values calculated by third party are used for emission reduction calculations and the study was conducted following adequate QA/QC procedures /14, 28/.
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3.4.10 Fuel Use Records

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Continuous monitoring /11-15, 28/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	The monitoring frequency is in line to the monitoring plan and monitoring methodology
Monitoring equipment	Manual entries so no monitoring equipment in use /9/
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency /interval:	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is (are) calibration(s) valid for the whole reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A

How were the values in the monitoring report verified?	A copy of the fuel records were verified during the onsite assessment. The emissions from the fuel used during stove production was 0.0007% in comparison to the emission reductions from the project activity. Hence in opinion of the assessment team it has been found negligible and hence ignored.
If applicable, has the reported data been cross-checked with other available data?	The leakage emissions in the current monitoring period were compared to the previous verifications and were found comparable/2/.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, The values from the source sheets were checked during the onsite assessment.

3.5 Verification of Sustainability Monitoring Parameter

3.5.1 End User and Stakeholder Survey

Earthood team has physically interviewed various project cook stoves owners; it was ensured that stoves with age ranging from 0 to 7 years are visited. Also some households with more than one cookstove was visited to observe the usage pattern. The stove owners were questioned about the experience of owning the improved cookstove, the difference they find between the traditional cookstove and ICS and about their charcoal savings. If a user was dissatisfied with the improved cookstove then the response was classified as 'Concerned'; if a person was extremely happy with the product and it was proving to be beneficial to the user then it was classified as 'Positive'; if a unit was proving to be harmful to the user and if the user was extremely dissatisfied then his response was classified as 'Negative'. If the user was indifferent about the utility of cookstove, the response was classified as 'Neutral'. The list of the stove owners visited are as follows:

Table 3 End User Survey

S.No.	Name of the Cookstove Owner	Mobile numbers	Feedback (Positive/Negative/Neutral/Concerned)
1	Aidah	0782785405	Positive
2	Beti	0775598062	Positive
3	Richard	0774641016	Positive
4	Sikandi	0775624392	Positive
5	La-Onjo- Kibiraye	0782106599	Positive
6	Ida – Mupesi	0777825261	Positive
7	Amina Ari	0755666550	Positive

8	Hope Najemba	0712026341	Positive
9	Aisha Nagayi	0754686857	Positive
10	Shamim Nayaji	0774621088	Positive
11	Scovio Naswunoi	0773147090	Positive
12	Huine Nakiwa – Amina	0772674404	Positive
13	Shriafa Kasim	0777467613	Positive
14	Mama Masitula	0756487661	Positive
15	Fatuma Nakaye	0774053925	Positive
16	Jaja Ha- Ima	0772480285	Positive
17	Mama Jemiral	0782942409	Positive
18	Masembe Halima	0775547883	Positive
19	Busigye Genevieve	0712632772	Positive
20	Ntungire Mercy	0777340045	Positive
21	Ampumuza Marion	0782554783	Positive
22	Kwesiga Gerald	0712884920	Positive
23	Muzinge Lawrence	0781576151	Positive
24	Kintu Davis	0782838473	Positive
25	Sylvia Ninsiima	0782328956	Positive
26	Waweyo Patrick	0777336352	Positive
27	Mwesigye Maximo	0779356595	Positive
28	Isabirye Fred	0774022718	Positive
29	Patrick Waweyo	0712700226	Positive
30	Mwaka George Willy	0712926464	Positive
31	Amanya Isaac	0776375339	Positive
32	Marion Ampumuza	0782898949	Positive
33	Kengoma Dorothy	0772438662	Positive
34	Mrs Walusimbi	0772889518	Positive
35	Muhangi Denis	0782283238	Positive

36	Namujju Lilian	0782596383	Positive
37	Nshimiyumane John	0772974567	Positive
38	Fred Isabirye	0772307161	Positive
39	Nakazi Aminah	0712572484	Positive
40	Kilwa Livingstone	0771296391	Positive
41	Galiwango Jesca	0774655426	Positive
42	Babirye Resty	0775584587	Positive
43	Nduhukire Elizabeth	0773472881	Positive
44	Waweyo Patrick	0772611497	Positive
45	Mwesigye Maximo	0754725940	Positive
46	Mugumya Morris	0772668126	Positive
47	Royal Light secondary	0772912209	Positive
48	Bishop Seperiano Secondary school	0772830445	Positive
49	Nsambya Junior School - Nsambya Hill	0752980266	Positive
50	Seeta Church of Uganda P/S	0782156568	Positive

(P.S. Phone numbers have been used as means to determine uniqueness and keep track of double counting)

All the users shared a positive feedback in terms of monetary savings from lesser fuel consumption and were willing to pay a bit of premium to buy ICS when their stove is broken. Several users had been in possession of more than one ICS of different sizes, they were usually the one with a bigger family. Some ICS users also ran small food shops and recognised the improvement in the air quality of their sitting area which contributed a better ambiance. Overall the team is in a position to conclude that the user experience of ICS have been much appreciated by the users.

3.5.2 Indicator: Air Quality

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	The impact on air quality is assessed quarterly.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes,
How were the values in the monitoring report verified?	The value was from the source Questionnaires, and physical interviews with the users. /9,19,30/
If applicable, has the reported data been cross-checked with other available data?	Yes, through on site interviews and visual observation /9/.

Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
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3.5.3 Indicator: Employment

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Continuous
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes, The project has added manufacturing partners over time and which continue to hire and employ locals in administrative, sales, production, and management positions/18/.
How were the values in the monitoring report verified?	The employment information was verified /19/
If applicable, has the reported data been cross-checked with other available data?	Yes, through on site interviews and visual observation /9/.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.

3.5.4 Indicator: Access to Energy Services

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	It is monitored continuously and Monthly sales records are maintained.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes, monthly sales records are obtained/15/
How were the values in the monitoring report verified?	The surveys were verified and the values reported on salesforce.com were verified
If applicable, has the reported data been cross-checked with other available data?	Yes, through on site interviews and visual observation/9/
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, Questionnaires are administered by Supervisors and checked by the project manager on a regular basis

3.5.5 Indicator: Lively-hood of the poor

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	The parameter is monitored biannually. Kitchen Surveys, Ugastoves sales records, Kitchen Performance tests, CIRCODU survey
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
How were the values in the monitoring report verified?	The surveys were verified and the users were physically interviewed during the site visit. Most of the households that were interviewed acknowledged the fact that their charcoal consumption has reduced and thereby the project increases the spending power of the users. /9/
If applicable, has the reported data been cross-checked with other available data?	Yes, through document review, on site interviews and visual observation/9/
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, database is checked by the project manager on a regular basis

3.5.6 Indicator: Human and Institutional capacity

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	The monitoring is done on annual basis.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
How were the values in the monitoring report verified?	Staff training and manufacture training records were checked during the onsite assessment/9/.
If applicable, has the reported data been cross-checked with other available data?	One of the manufacturer was visited during the onsite assessment and role of the project implementer (Impact Carbon) was assessed. Also the Impact Carbon employees were interviewed during the physical verification.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the staff log/25/ have been made available to the assessment team.

3.5.7 Indicator: Technological self-reliance

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	The monitoring frequency is annual.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
How were the values in the monitoring report verified?	Technology is transferred to beneficiaries prior to stove construction, during construction and follow-up visits conducted after stove installation. Each time a follow-up visit is conducted, a maintenance survey is recorded. The manufacturers continue to innovate in order to improve the stove technology. Trainings are also provided.
If applicable, has the reported data been cross-checked with other available data?	Interviews were conducted on site during site visits and offices based in Santa Barbara /9/
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, maintenance survey data collected on handheld devices, stored in Salesforce.com monitoring system and reviewed by office staff in Honduras and U.S. offices /9/

3.6 Assessment of data and calculation of emission reductions

Emissions reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

ER_y Emission reductions in year y in tCO₂/year

PE_y Project emissions in year y in tCO₂/year

BE_y Baseline emissions in year y in tCO₂/year

LE_y Leakage emissions in year y in tCO₂/year

The project emission have been factored in the calculations as per the applied methodology.

The leakage emissions from the fossil used while fabricating the improved cook stoves have been found negligible; a detailed description about the calculation of the leakage emissions can be found under the parameter head “Fuel Use Records” and emission reduction calculation sheet.

The emission reductions have been calculated as explained below:

A value of 2.16 mtCO₂e/year per stove is used to reflect an 82% NRB ratio. This value reflects the calculation approach as per the registered PDD. The calculations are checked from “ISS8 Annex 07-Detailed Customer Database (KS Results).”

The initial emissions reduction of 2.16 mtCO₂e/year per stoves, multiplied by the average number of stoves in operation on a monthly basis is adjusted for aging and drop-off as set forth in “GS 447 Iss 8 ER Calculator.xls” for the Eighth Monitoring Period (1 January 2014 – 31 March 2014).

The emission reductions for the current monitoring period are higher than the emission reduction estimated in the registered documents. The emission reductions are considerably higher than the estimated amount resulting from the higher improved cook stove sales than anticipated. This does not impact the additionality of the project activity as the additionality was demonstrated through barrier analysis. The verification team verified the sales documents during the onsite assessment and also visited randomly selected households; therefore team is in a position to conclude that the number of stoves sold are real and quantifiable.

3.7 Quality Management

The adequacy and compliance of the monitoring plan in the MR as per the requirement laid out by the monitoring methodology and the registered GS PDD. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already discussed under respective parameter above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and the registered GS PDD. The sustainability parameters were also reviewed and the assessment team is of the opinion that the project improves the living standard of the rural population.

The verification team conducted on-site field visits to cross-check the reliability of the data captured in the project survey and conducted interviews with cook-stove users. The verification team found consistency in the response of the users and the data points of the project sample survey.

The assessment team confirms that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.

The assessment team confirms that all the emission factors and default values have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.

4. CERTIFICATION STATEMENT

Earthood Services Private Limited (Earthood), contracted by Impact Carbon, has performed the independent verification of the emission reductions for the GS Project 447 “Efficient Cooking with Ugastove’s Project” in Uganda for the monitoring period 01/01/2014 to 31/03/2014 as reported in the Monitoring Report, Version 5 dated 20/11/2015. The ‘Impact Carbon’ is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity

Earthood commenced the verification on the basis of the baseline and monitoring methodology Improved Cook-stoves and Kitchen Regimes, Version 01 (“Methodology v.01”), the monitoring plan contained in the PDD Version 9.0 dated 24/03/2009, Monitoring Report Version 5 dated 20/11/2015 as per the methodology described under Section 2 of this report.

Earthood’s verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Earthood planned and performed the verification by obtaining evidence and other information and explanations that Earthood considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 01/01/2014 to 31/03/2014 are fairly stated in the Monitoring Report (final) Version 5 dated 20/11//2015. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology referred above and the monitoring plan contained in the PDD Version 9.0 dated 24/03/2009.

Earthood Services Private Limited is able to certify that the emission reductions from the GS Project 447 “Efficient Cooking with Ugastove’s Project” in Uganda for the monitoring period 01/01/2014 to 31/03/2014 (including both days) amount to **139,689 tCO₂e**. The emission reduction per vintage year is as follows;

Monitoring Period	Emission Reductions Achieved
01/01/2014 to 31/03/2014	139,689 tCO ₂ e



Managing Director
Earthood Services Private Limited

Gurgaon, Haryana, India

5. REFERENCES

S. No.	Title of Document (Version, Date, etc.)
1	Registered PDD version 09 dated 24/03/2009, GS ref no.GS447
2	Previous verification report rev 1.1, dated 4/12/2013
3	Validation Report
4	Applied Methodology: Improved Cook-Stoves and Kitchen Regimes, Version 1
5	Validation and Verification Standard, version 9.0
6	Monitoring Report, 1.0, 07/07/2015
7	Monitoring Report (final), 5, 20/11//2015
8	ER Calculation Spreadsheet, 2.0, 17/12/2014
9	On site physical observation, surveys, interviews and review of information like records.
10	KPT Berkeley Air 2010 Phases 1-5
11	Aging KPT Monitoring Report, 2012_v2
12	KS Monitoring Report 2014-04-03
13	Usage Monitoring Report, Charcoal 2014-02-03
14	Usage Monitoring Report; Institutional Wood_v4
15	Complete Sales Record and Project Database
16	Detailed Customer Database (KS Results)
17	Charcoal Price Survey Data
18	Partner Retailer List 2014-02-03
19	Marketing Strategy; Ugastove 2014-02-03
20	Marketing Strategy; EUF 2014-02-03
21	Marketing Strategy; SESSA 2014-02-03
22	Marketing Strategy; AES 2014-02-03
23	Marketing Strategy; FOWE 2014-02-03
24	Partner Organizational Charts 2014-02-03
25	Partner Staff Lists 2014-02-03
26	Letter from Gold Standard, Inclusion
27	Letter from Gold Standard, Aging KT
28	Usage Survey Data Analysis, Charcoal 2014-02-03
29	Lag time calculation from intermediaries to end user
30	Summary Excel Calculations All Phases 1 - BA - baseline 90_10
31	Supportive information for incentive

6. AUDIT FINDINGS (CAR/CL/FAR)

Type	Date	02/09/2015
CAR # 1	Reference	Verification protocol
Description of the Non Conformance		
<p>For parameter "Stoves sales" the detailed list provided (Annex 06)</p> <p>a) PP needs to explain the flow of data from the quickbooks maintained by the manufacturers to the final value of emission reductions, as during the site visit the number of stoves sold in the database provided did not match the database at the site.</p> <p>b) The project database for sales record is not consistent in the field entries.</p>		
1stResponse from PP	Date	10/09/2015
<p>a) Quickbooks is an accounting program and is used by all manufacturers. Manufacturers export information from the Quickbooks into excel and send that excel as the primary sales database to Impact Carbon. It contains records of all the stoves from manufacturers to distributors. Impact Carbon then further takes count from retailers of each manufacturer about unsold stoves and then subtract unsold stoves to get the final numbers of stoves. Hence there is a difference between database at the site and the database provided for ER calculation. The database provided for ER calculation will always have lesser number than primary database and hence it is conservative.</p> <p>b) Kindly refer to point a) above.</p>		
1stAssessment by Audit Team	Status	Open
	Date	21/09/2015
<p>The PP has explained that there are two sets of databases; primary and the one used to compute emission reductions. From the primary database the unsold stoves are subtracted; kindly explain how it is ensured that the unsold stoves are not accounted for emission reduction calculations through all the project locations.</p>		
2ndResponse from PP	Date	24/09/2015
<p>During the monitoring period the PP tried best to collect the number of unsold stoves from various methods. PP visited retailers and called them over the phone to collect the information of unsold stoves from maximum of the project locations. But due to very large number of the project locations, it was not practical possible to collect information related to each stove. To overcome this difficulty, the PP has introduced lag time in the calculation to set off the delay between various intermediaries to end-users. To calculate this delay, the PP has done an analysis on the sales data. It is assumed that if any buyer has bought 5 or more stoves in the monitoring period then it is an intermediary which would have been further sold the stove to end-users. All of these intermediaries are analysed and it has been concluded that average lag time from intermediaries to end-users in this monitoring period was 37 days. The ER calculation has been revised considering that 50% of the stoves from 'x' month were sold to end-users in 'x+1' month and rest 50% were sold in 'x+2' month. The lag time calculation sheet has been submitted along with these responses as Annex 18.</p> <p>The ER calculation sheet and MR has been revised accordingly.</p>		
2ndAssessment by Audit Team	Status	Closed
	Date	28/09/2015
<p>The revised monitoring report and emission reduction calculation sheet was reviewed along with the analysis of the sales data presented. The assessment team is of the opinion that the project proponent has taken measures to avoid the inclusion of the cookstoves which are not in use. The explanation provided was found acceptable, hence the finding is closed.</p>		

Type	Date	02/09/2015
CAR # 02	Reference	Verification protocol
Description of the Non Conformance		
<p>For data variable "Project Fuel consumption" PP needs to clarify how Berkeley's report is applicable for the concerned monitoring period, as the recording frequency has been defined every two years.</p>		
1stResponse from PP	Date	10/09/2015
<p>For data variable "Project Fuel Consumption", PP applied "Aging-Stove KT". The latest "Aging-Stove KT" was completed in October 2012. As per methodology requirement the minimum frequency of KT is bi-annually. The monitoring period for this verification is 01-Jan2014 to 31-Mar-2014. Hence this "Aging-Stove KT" is applicable for this monitoring period. The detailed description is as mentioned</p>		

here below:

An independent third party monitoring firm, Berkeley Air Monitoring Group, conducted the 2010 monitoring KT to determine the effect of improved cooking stoves on fuel consumption in households and institutions. This KT evaluated baseline fuel consumption and project-scenario fuel savings for new stoves as well as aging stoves up to age 6 for both charcoal and institutional wood clusters. These KT results were included and verified in previous monitoring periods.

Additional Aging-Stove KTs were performed in 2012, per the requirements of the methodology for on-going KTs. This KT evaluated Aging-Stove fuel performance for Ugastove charcoal stoves with an average age of six years, as well as Aging-Stove fuel performance for EUF charcoal stoves with an average age of two years. The Aging-Stove fuel performance assessment for EUF charcoal stoves was conducted per GS requirements to include new project stoves from companies other than Ugastove in future KTs (ref: Annex 15) by comparing stove performance for aging devices manufactured by companies other than Ugastove to aging stove performance data previously collected for existing technology in the cluster (ref: Annex 16). The KT confirms that Aging EUF stoves perform the same as the Ugastoves.

1stAssessment by Audit Team	Status	Open	Date	21/09/2015
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The value of 0.69 kg per person-meal as mentioned in the monitoring report could not be traced in the report issued by CIRCODU performed for the year 2012. Also it is not clear in the monitoring report the amount of fuel wood used per person per meal.

2ndResponse from PP	Date	24/09/2015
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The value of 0.69 kg per person-meal comes from KPT Report, Table 5, pg. 19 (ISS8 Annex 01A). Aging Stove KTs in 2012 (ISS8 Annex 01B) shows that there was slight difference in the savings ratios of 1.09 for 2010 and 1.00 (Ugastove) and 0.99 (EUF) for 2012, can be attributed to random cooking variation (Section 1.2 of Annex 01B). Thus, the savings estimate was not adjusted. All these documents were verified.

99.44% of the stoves included in this monitoring report are based on charcoal (domestic and commercial) and rest 0.56% stoves are institutional stoves based on wood. The amount of fuel wood and charcoal used per person per meal is mentioned in Table 1.3 at pg.11 of the MR.

2ndAssessment by Audit Team	Status	Closed	Date	28/09/2015
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The value of the fuel usage could be verified from the report mentioned which is also confirmed in the aging KT analysis. The revised monitoring report also includes the values for both charcoal and wood based stoves; hence finding is closed.

Type	Date	02/09/2015
CAR # 03	Reference	Verification protocol

Description of the Non Conformance

- Annex 07 provided for assessment is not for the relevant time frame as the monitoring period.
- For "Usage factor" the reports provided are for the year 2013, PP is requested to provide reports of the concerned period.
- Several places in the monitoring report, PP has mentioned the vintage 2013 Q3-Q4; reason for the same is not understood.

1stResponse from PP	Date	10/09/2015
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- Annex 07 has revised and now it included the assessment of monitoring kitchen survey for the relevant period.
- "Usage Factor" is calculated from the 'Usage Survey' which was conducted in December 2013. As per methodology a 'Usage Survey' should not be undertaken not less than bi-annually. The monitoring period for this monitoring is 01-Jan-2014 to 31-Mar-2014 and hence it fulfills the methodology requirement. The next Usage Survey is due no later than December 2015.
- It was typo error. The PP has checked the monitoring report and corrected vintage to 2014 Q1.

1stAssessment by Audit Team	Status	Open	Date	21/09/2015
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- The workbook submitted consists of information inconsistent from the rest of the documents. Also the source of age adjustment is not clear. OPEN
- The value of usage factor has been appropriate based on the clarification provided by the PP which is as per the applied methodology.
- The revised monitoring report submitted is consistent with the information.

2ndResponse from PP	Date	24/09/2015
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a) The workbook has been revised and is now consistent from rest of the documents. The 'age adjustment' is sourced from 'Aging Household Assessment' i.e. Aging KT Survey which is submitted as Annex 01B. Kindly refer to section 1.2 of Annex 01B for detailed understanding.			
2nd Assessment by Audit Team	Status	Closed	Date
			28/09/2015
a) The revised workbook submitted by the project proponent includes consistent information. Reference of the age adjustment factor is also clear.			

Type	Date	02/09/2015
CAR # 04	Reference	Verification protocol

Description of the Non Conformance

PP is requested to explain the following:

- The stoves are not provided any unique number, how is double counting ensured?
- The short survey sheet does not include fields where the surveyor could mention complete information about all the stoves owned by a household.
- During the site visit it was observed that single households owned more than one improved cookstoves; in such cases kindly explain
 - How person- meals per household per day is calculated for every stove?
 - How are fuel savings calculated in such cases?
 - Some stoves might be a replacement of an older stove; how is that factored in the calculations.

1st Response from PP	Date	10/09/2015
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a) The project boundary is defined as whole of Uganda. The project participant records the relevant contact information for as many people as possible who purchase cook stoves. It is mandatory to collect the contact information of all the distributors, retailers and bulk purchaser of every kind of stove technology and number of stoves sold to them. This provides the database of project stoves that can be compared to other GHG offset project in country to ensure that double-counting does not occur. Finally, crediting of emission reduction is based on sales receipts and sales records. This ensures that each sale credited is matched to an actual sale. Double counting is avoided by not relying on sampling of homes to determine sales records – instead the sales record is determined exclusively by actual sales and supported by sales records. The sales records are collected by PP (generated from software and then PP randomly screen these records through spot-visits to confirm that sales records are authentic and that no double counting occurs.

Publicly available information on GS VER and CDM stove projects confirms that technologies installed by the project are not being double counted.

- There was not short survey conducted for this monitoring period.
- Yes, there are single households owns more than one improved cookstoves. In such cases, it is very complicated to calculate person-meals per household or fuel saving to a particular stove. To factor in such cases in the final ER calculation, the PP adjusted the final sales number. The sales has been discounted being conservative. This is explained as 'Multi-ICS Usage Adjustments' in the monitoring report.

KS data from Q2-Q4 2011 and Q1-Q4 2012 showed that 21.15% of project HHs in the charcoal cluster owned more than one improved cookstoves. Thus, a 21.15% "Multi-ICS" usage adjustment is applied to all sales made between 2011 Q2 to 2012 Q4. Adjustment of 32.69% was applied for stoves sold in Q1-Q2 of 2013, adjustment of 27.42%, was applied to stoves sold in Q3-Q4 of 2013, and adjustment of 21.62% has been applied for this monitoring period i.e. Q1- 2014.

For detailed calculation kindly refer to ER calculator sheet (tab – 'HHCharcoal', row 103 to 105, cell B:552)

1st Assessment by Audit Team	Status	Open	Date	21/09/2015
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- The approach followed by the project proponent as explained above is appropriate to avoid double counting of the emission reductions from the cookstoves in case of direct buyers. PP needs to explain how the cookstoves record keeping is done in case of bulk buyers. OPEN
- PP is required to provide the sample survey sheets for the concerned period. OPEN

c) The adjustment factors in cells tab HH Charcoal B357 and B358 are not clear. OPEN Kindly explain the following: <ol style="list-style-type: none"> Usage rate has been considered constant throughout the crediting period? The usage units use-month calculations in the HH Charcoal tab is not clearly understood. The source of the value of emission factor of 2.16 for charcoal stoves is not clear. The multi ICS usage adjustment has not been applied for all the months. Kindly explain. 					
2ndResponse from PP		Date	25/09/2015		
a) Record keeping for bulk buyers is done as same as other distributors or retailers. All the necessary information to track the bulk buyers are noted in the sales database same as other retailers or distributors. This ensures better record management. b) The samples survey sheets for the concerned time period has been submitted along with these responses. c) There was typo error in cell B358. The period was mentioned as 'Jul 2013 to Mar 2014', which is now corrected to 'Jan 2014 to Mar 2014'. <ol style="list-style-type: none"> The usage rate used in the crediting period is the cumulative usage rate. This usage rate is weighted to be representative of the quantity of household stoves of each age being credited in the project scenario (i.e. weighted based on the total sales population by age). For detailed calculation please refer to Annex 04 and Annex 17. The usage unit use-month is the total unit use-month in that particular month of a particular age group of stoves. The source of value of emission factor is 'Table 1.5, Annex 07'. This is also mentioned at Cell E:297 of HH Charcoal tab in the ER Calculator sheet. Multi-ICS usage is a parameter which can vary from one individual household to another. Multi-ICS usage is completed on the stove sold in the monitoring period. It gives an indication that how many end-users to whom stoves were sold in the monitoring period are having multiple ICS and that has been adjusted for future monitoring as well. 					
2ndAssessment by Audit Team		Status	Closed	Date	28/09/2015
a) The record keeping and tracking system was clearly understood and ensures real time tracking. b) The survey sheets were submitted and found meeting the requirements. c) The revised workbook submitted consists of consistent information. <ol style="list-style-type: none"> The mentioned Annexes were reviewed and it is now clearly understood the source of usage rate and its calculation. The revised sheet includes clear information about the calculations. The source can be found and is clear now. Through documents provided the team was able to gather that the multi-ICS usage parameter was adopted when GS team requested the inclusion to capture information about multiple ICS owners and to factor it in the calculations. Therefore the CAR is closed. 					
Type		Date	02/09/2015		
CAR # 05		Reference	Verification protocol		
Description of the Non Conformance					
a) During the previous verification the DOE had suggested to continue monitoring and reassess the effectiveness of the mechanism at the end of the crediting period. PP is requested to provide its assessment. b) The monitoring report does not include a comparison of the actual GHG emission reductions from project activity to the estimated amount of emission reductions in the PDD.					
1stResponse from PP		Date	14/09/2015		
a) During the previous verification the DOE had requested to continue with the existed incentive mechanism and evaluate the performance in this monitoring period and till this crediting period also. As per suggested by DOE the PP has evaluated its performance and same is mentioned in Table 8.1 (Point 1) of the monitoring report. b) As suggested by DOE, a comparison of the actual GHG emission reductions from project activity to the estimated amount of emission reductions in the PDD has been included in section 4 of the monitoring report.					
1stAssessment by Audit Team		Status	Open	Date	21/09/2015

a) PP needs to provide supportive for the stated information. OPEN			
b) Kindly justify the substantial increase in the actual emission reductions achieved during the monitoring period in comparison to the estimated amount. OPEN			
2ndResponse from PP		Date	25/09/2015
a) In the monitoring period flyers were printed that advertised to ability to receive an extended guarantee (2-year warranty) per for bringing in the traditional stove. This monitoring period all manufacturers were also given stickers to advertise the extended warranty directly on stoves. The supporting's for the information has been submitted along with these replies as Annex-20.			
b) The emission reduction in this monitoring period is very high from the estimated reduction in the PDD. This is because the expected sale at the time of registration was 30,000 stoves per year but the stove sale grows many times from year 2012 onwards because of excellent quality of stoves, publicity and IC's expansion strategy to include new stoves. All of these factors resulted into high sales and subsequently high emission reductions from the estimated emission reductions in the PDD.			
2ndAssessment by Audit Team		Status	Closed
		Date	28/09/2015
a) The supportive provided conforms the information.			
b) By reviewing the registered PDD the team could establish that a sale of 30,000 stoves per year was envisaged however in reality the stoves sales is much higher. The emission reduction calculation is based on the fuel savings per stove and higher stove sale would imply higher fuel savings leading to higher emission reduction. The assessment team then analysed the impact of the higher emission reductions on the additionality of the project. The additionality of the project has been evaluated on grounds of barrier analysis and therefore higher emission reductions do not impact the eligibility of the project. Also the project is a large scale project which also does not interrupt with higher sales. The finding is therefore closed.			

Type		Date	06/10/2015
CAR # 06		Reference	Verification protocol
Description of the Non Conformance			
a) The monitoring parameter as per PDD is fuel wood consumption in the project scenario. However, the reported and verified parameter value in the MR is Fuel-wood savings (0.069 kg/ person-meal)			
b) Cluster definition is not mentioned in the monitoring report.			
c) In parameter "New Stove performance" it was mentioned that no new stove is installed during the monitoring period. This statement seems to be in contradiction to the above.			
d) The ERs achieved during the MP is more than thrice the amount of ERs estimated by the PDD. However, it is not discussed that which ex-ante parameters have changed from the validated value.			
1stResponse from PP		Date	07/10/2015
a) The monitoring parameter as per PDD is ' <i>Project Fuel Consumption</i> '. The reported parameter in the MR is mentioned in Table 1.3. The same has been now clearly mentioned in Table 1.1 of the MR.			
b) Cluster definition is now mentioned in the monitoring report in Table 1.1.			
c) In parameter "New Stove performance" it is mentioned that "The findings of the monitoring KPTs are reported in Annex 01A for new stove performance." No new cluster has been added in this MR.			
d) No ex-ante parameter has been changed. The increase in ERs is because of all monitored parameters which include sales, usage drop off rate and better performance of project stoves.			
1stAssessment by Audit Team		Status	Closed
		Date	07/10/2015
a) The parameter can be clearly found in the revised MR.			
b) The definitions included are consistent to the ones defined in the previous verifications.			
c) Consistent information has been included in the monitoring report.			
d) The actual sale of the improved cook stoves was much higher than the sales anticipated at the time of project registration. The number of cook stoves under the project activity was not an ex-ante fixed parameter. Therefore the assessment team can conclude that the higher emission reductions achieved during the current monitoring period are due to the higher sales of the improved cook stoves and no ex-ante parameter has changed.			

7. CV OF VERIFICATION TEAM

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	4 Years		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (1.2)	YES		
Reviewed by	Abhishek Mahawar	Date	29/12/2014
Approved by	Ashok Gautam	Date	29/12/2014

Competence Statement			
Name	Ashok Gautam		
Country	India		
Education	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)		
Experience	14 Years		
Field	Energy, Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (1.1)	YES		
TA Expert (3.1)	YES		
TA Expert (13.1)	YES		
Reviewed by	Abhishek Mahawar	Date	29/12/2014
Approved by	Kaviraj Singh	Date	29/12/2014

Competence Statement	
Name	Abhishek Mahawar
Country	India
Education	B. Tech. (Chemical Engineering) MBA (Finance)
Experience	7 Years

Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert (1.2)	YES		
Reviewed by	Ashok Gautam	Date	29/12/2014
Approved by	Kaviraj Singh	Date	29/12/2014

Competence Statement			
Name	Ashu Sharma		
Country	India		
Education	Masters (Energy Management), DAVV Indore Masters (Physics), CCS University Meerut		
Experience	12+ Years in energy audit and insulations		
Field	Energy & Insulation		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (3.1)	YES		
Reviewed by	Abhishek Mahawar	Date	30/04/2014
Approved by	Ashok K Gautam	Date	30/04/2014

History of the document (template)						
Version	Date	Nature of Revision	Prepared by		Reviewed by	
			Name	Date	Name	Date
1.0	24/11/2014	Initial adoption	Abhishek Mahawar	23/11/2014	Ashok K Gautam	23/11/2014