

Verification report form for GS4GG Programme of Activity
(Gold Standard for the Global Goals)

BASIC INFORMATION

Title of the GS4GG Programme of Activity (PoA)	UpEnergy – Social and Climate Impact Programme
Reference number of the Programmes of Activity (PoA)	GS 10963
Version number of the verification and certification report	4.0
Completion date of the verification and certification report	12/10/2024
GS ID (s) of VPAs under PoA	VPA ID: GS10967 Community Carbon Efficient Cooking Programme - VPA1 VPA ID: GS12119 Community Carbon Efficient Cooking Programme – VPA 16
Version number of the monitoring report to which this report applies	6
Completion date of the monitoring report to which this report applies	06/09/2024
Monitoring period no. and duration	VPA 1: 3 rd MP - 01/01/2023 - 31/12/2023 (Inclusive of both the dates) VPA 16: 2 nd MP - 01/01/2023 - 31/12/2023 (Inclusive of both the dates)
Crediting period of the PoA corresponding to this monitoring period	07/01/2021 – 31/12/2040 (Inclusive of both the dates)
Host Party	Uganda
Applied methodologies and standardized baselines	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 03.1
Activity requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A

Product Requirements applied		☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A		
Estimated amount of annual average GHG emission reductions		VPA 1 (ICS): 616,492 tCO ₂ e VPA 16 (ICS): 621,700 tCO ₂ e EPC: 0 tCO ₂ e		
Sustainable Development Goals Targeted	SDG Impact	Total amount of certified impact (as per approved methodology) achieved in this monitoring period		Units/Products
		ICS	EPC	
SDG 13: Climate Action	Emission Reduction	VPA 1: 616,492 VPA 16: 621,700	0 ¹	tCO ₂ e
SDG 1: No Poverty	Percentage of users reporting money savings due to reduction in purchased fuel consumption in project / installed under the project	VPA 1: 90 VPA 16: 90	0	Percentage
SDG 3: Good Health and Well Being	Percentage of users reporting reduction in smoke/PM after shifting to ICS in project	VPA 1: 90 VPA 16: 90	0	Percentage
SDG 5: Gender Equality	Percentage of users reporting time saving due to reduction in collected fuel consumption/cooking time/boiling water	VPA 1: 90 VPA 16: 90	0	Percentage
SDG 7: Affordable and Clean Energy	Number of households with operational stoves	VPA 1: 138,670 VPA 16: 142,141	0	Number
SDG 8: Decent Work and Economic Growth	Total number of jobs created	VPA 1: 73 VPA 16: 73	0	Number
SDG 12: Responsible Consumption and Production	Percentage of users confirmed less use of fuel for boiling	VPA 1: 46.32 VPA 16: 47.1	0	Percentage

¹ For current Monitoring period project developer is not claiming ERs from EPCs

SDG 15: Life on Land	Fuelwood eq savings reported by users in the project	VPA 1: 1021.87 VPA 16: 1064.52	0	Tonnes-equivalent fuelwood/day
Name and UNFCCC reference number of the VVB	Earthood Services Private Limited E-0066			
Name, position and signature of the approver of the verification report	 Managing Director Dr. Kaviraj Singh			

SECTION A. Executive summary

The programme of activity “UpEnergy – Social and Climate Impact Programme” involves distribution of Improved Cookstove (ICS) to residential users in Uganda. The PoA is using carbon finance to support local partners engaged in different activities like production, distribution, and maintenance of product technology like ICS. The VPAs main target is on reduction of greenhouse gas emissions from the burning of non-renewable woody biomass and/or charcoal for cooking. Improved Cookstoves (ICS) improve heat transfer efficiency as compared to the baseline conventional stoves, Clean cooking solutions such as Electric cooktop/cooker (EPC) avoids any use of non-renewable biomass/charcoal and thereby reducing GHG emissions. Fulfilling the requirements of the applied methodologies TPDDTEC Version 3.1/08/.

The VPAs under current verification are: GS10967 and GS 12119

Total annual average emission reductions for this crediting period are 616,492 tCO₂e for VPA1 – GS10967 (ICS) and 621,700 tCO₂e for VPA 16 - GS12119 (ICS) and 0 tCO₂e from EPC for current monitoring period i.e., 01/01/2023 to 31/12/2023 (Both days inclusive).

The PoA has been registered under GS4GG (GS-ID 10963) and with the help of local partners & the VPAs Implementer community carbon & UpEnergy Group which is also the Coordinating and Managing Entity (CME). Community Carbon in collaboration with the local partners has implemented the distribution/ installation of improved cookstoves to the beneficiaries.

Scope of Verification

The verification is an independent and objective review for determination of the monitored reductions in GHG emissions by the VVB. The verification includes the implementation and operation of the PoA as set out in the registered PoA-DD/10/ & VPA-DDs/11/ for VPA 01 & VPA 16 in the current monitoring period.

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period, and it is based on the review of the following:

- (i) The approved methodology TPDDTEC – Technologies and Practices to Displace Decentralized Thermal Energy Consumptions, Version 3.1 /08/
- (ii) The registered PoA-DD/10/ & registered VPA-DDs/11/ and monitoring plan/11/
- (iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (iv) GS4GG Principles & Requirements/01/
- (v) The CDM Validation and Verification Standard (VVS) version 3.0/04/ and The CDM Project Standard (PS) version 3.0/03/
- (vi) Relevant decisions, guidance, and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity’s reported emission reductions.

The verification has considered both the quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC and GS4GG, as appropriate to the PoA. The verification is not meant to provide any consulting or recommendations to the CME/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification Process

The verification process is conducted as per internal GS4GG Requirements, which includes the following steps;

- Contract with CME and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
- Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and remote audit (including sampling approach (refer Section D.4 of this report) to be applied)
- Onsite audit (refer Section D.2 of this report) by verification team consistent of Team Leader and all Technical Experts, as a minimum
- Follow up activities e.g., interviews (refer Section D.3 of this report)

- Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)
- Independent technical review (refer Section B.2 of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
- Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
- Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance, as appropriate.

Verification Conclusion

Based on the outcome of the verification process of the GS PoA "UpEnergy – Social and Climate Impact Programme" and its corresponding VPA 01 "Community Carbon Efficient Cooking Programme - VPA1" & VPA 16 "Community Carbon Efficient Cooking Programme – VPA 16" for the monitoring period 01/01/2023 - 31/12/2023 (Inclusive of both the dates), we confirm that the implementation of referenced registered PoA and its VPA (VPA01 & VPA 16) is complying with applicable CDM and GS4GG rules and regulations as stated in the Monitoring Report (final) Version 6, dated 06/09/2024/05/. The GHG emission reductions were calculated in line with the approved baseline and monitoring methodologies TPDDTEC – "Technologies and Practices to Displace Decentralized Thermal Energy Consumptions, Version 3.1"/08/ and the monitoring plan contained in the registered PoA-DD/10/ and VPA-DDs/11/.

Earthood Services Private Limited (hereafter referred as "Earthood") is able to certify that the emission reductions from the registered PoA (GS 10963) "UpEnergy – Social and Climate Impact Programme" and its VPAs "Community Carbon Efficient Cooking Programme - VPA1" & "Community Carbon Efficient Cooking Programme – VPA 16" during the crediting period 07/01/2021 – 31/12/2040 (Inclusive of both the dates) Annual emission reduction amounts is 621,700 tCO₂e for VPA 16 and 616,492 tCO₂e for VPA 01. Therefore, this is being submitted for request for issuance, as per GS Requirements/01/ and UNFCCC procedures & Requirements/06/.

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 VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader (OLD)	IR	Patwal	Charu	Central Office	Y	Y	Y	Y
2.	Team Leader (NEW)	IR	Vashisht	Sushant	Central Office	Y	N	N	Y
3.	Technical Expert (TA 3.1) (OLD)	IR	Patwal	Charu	Central Office	Y	Y	Y	Y
4.	Technical Expert (TA 3.1) (NEW)	IR	Vashisht	Sushant	Central Office	Y	N	N	Y
5.	GS Approved Auditor	IR	Phukan	Sukanya	Central Office	Y	N	N	Y

6.	Trainee Verifier	IR	Verma	Anvesha	Central Office	Y	N	N	Y
7.	Local Expert	EI	Khaukha	Julius	Central Office	N	Y	Y	N

Technical reviewer and approver of the verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer and TA expert to TR (3.1)	IR	Guleria	Shifali	Central Office
2.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Application of materiality in conducting the verification

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Observational error by monitoring survey staff of CME/VPA implementer while recording the responses of users in relation to survey parameters	Low	The survey is conducted for representative samples of population, which may impact the population significantly. Surveyors may be unsupervised at the site.	Verification team randomly selected the samples from CME surveyed sampled ICS. The recorded survey forms by CME were checked with VVB physical audit inspection observations/28/. The verification team also interviewed the monitoring staff and checked their training records through the Training & employment records/19/33/. Hence, concluded that there were Low risk associated with the surveys.
2.	Error in transferring the recorded data to ER sheet	Medium	The procedure for transferring the recorded break-up sheet readings to the spreadsheet is manual in nature thus increasing the chances of error. However, CME has implemented internal quality checks to ensure prevention of any such potential error in the prepared ER calculation sheets /15/.	The surveying and monitoring personnel assigned for PoA implementation has been trained and certified. The interviews conducted during Physical site visit /28/ confirms the regular training as per the monitoring plan and implementation procedures to reduce the risk of oversight or data transfer. All the values in ER calculation sheet have been verified from Monitoring surveys, Baseline survey documents and supporting evidence. None of the discrepancies was reported due to transferring of data.

3.	Calculation Errors	Medium	The process is manual and therefore there is potential risk of errors / omissions/misstatements.	All calculations were checked by verification team concerning applicable requirements under various documents viz., methodologies, PoA DD/10/ and VPA-DD /11/. Hence, concluded that there was no discrepancy reported in the formula applied in the ER calculation and in compliance with the applied Methodology & Tools.
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C.2. Consideration of materiality in conducting the verification

Based on the review of ER sheet, it can be confirmed that the actual individual and aggregated material error is determined for the PoA as per GS requirements. The verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet /15/. There are no material errors, overestimation of ER, omission, or misstatement reported in the project documents.

SECTION D. Means of verification

D.1. Desk/document review

The verification of the information of the PoA was performed through the document review including review of monitoring report /05/ version 6.0, dated 06/09/2024. Additionally, cross checks were performed for information provided in the monitoring report using other source of information, the verification team's sectoral or local expertise and, if necessary, independent background investigations. Earthood conducted a desk review as under:

The desk review involves:

- A review of the data and information presented to verify their completeness.
- A review of the monitoring plan (as described in VPA-DDs) /11/, the monitoring methodologies including applicable tool(s) and, where applicable, the applied standardized baseline, paying attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.
- A review of calculations and assumptions made in determining the GHG data and emission reductions/15/.
- 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 list of documents reviewed during the verification is provided under appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 15/04/2024 to 17/04/2024			
Activity performed on-site	Site location	Date	Team member

Following activities performed during the Physical audit: • Opening Meeting: Introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit/28/ including venue for closing meeting and any concerns from PP. • Implementation and Operation of project activity (Project boundary, technology, project equipment, monitoring and metering equipment's) as per registered PDD/previous verification. • Management and monitoring procedures followed at the project site. • Physical inspection of the project activity: Site visit and interview of monitoring personnel • Management and operational system: • Documentation, allocation of responsibilities, qualification and training, data recording & archiving, internal audit and management review and emergency procedures. • Verification checklist: compliance of monitoring procedures followed at project site with registered PDD and monitoring methodology. • Review of monitored data and relevant documents in accordance with registered monitoring plan and applied monitoring methodology. • Review pf ER calculations in accordance with applied methodology and relevant tools. • Compilations of the audit finding. • Closing meeting: Submission of the audit findings to the client and agreement on the issues raised and agreement on timelines.	Republic of Uganda	15/04/2024-17/04/2024	Charu Patwal, Julius Khaukha
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On site assessment has been conducted for the current verification. The on-site visit/28/ was conducted on 15/04/2024 to 17/04/2024.

The Physical Audit were considered sufficient by the verification team for the current batch for this issuance and provide the VVB assessment team with enough evidence to arrive at a verification conclusion.

D.3. Interviews

D.3.1. Interviews with CME and VPA Implementers

Sr. No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Wanyaka	Andrew	UpEnergy	15/04/2024-17/04/2024	VPA Implementation, Operational and Management	Charu Patwal, Julius Khaukha

					Framework, sampling surveys, end-users' feedback, etc.	
2.	Matua	Luiji	UpEnergy	15/04/2024-17/04/2024	Methodology application, monitoring plan, sampling method, ER calculations	Charu Patwal, Julius Khaukha
3.	Nantongo	Shilla	UpEnergy	15/04/2024-17/04/2024	Methodology application, monitoring plan, sampling method, ER calculations	Charu Patwal, Julius Khaukha
4.	Anayo	Sheila	UpEnergy	15/04/2024-17/04/2024	Monitoring system, training sessions	Charu Patwal, Julius Khaukha

Type of questions asked by VVB to VPA Implementers:

The respondents in the Project Monitoring Survey were asked various questions as follows, in order to establish their identities stated in the survey conducted earlier by the PD/CME as mentioned in MR/5/ and survey sheets/31/26/.

- Role and responsibilities of CME or VPA implementers in the implementation for PoA
- Monitoring and implementation process of the PoA
- Frequency of the training conducted for monitoring personnel.
- How institutions received training related to operation of ICS, EPC and WPS Unit?
- Any Grievance received during current monitoring period.

All the details collected were found correct and inline to the monitoring plan described in the monitoring report/05/.

D.3.2. Interviews with end-users and Stakeholders: VPA 1 (GS10967 - ICS)

No.	Interviewee		Affiliation	Date	Subject	Team member
	End-user's name	Serial Number of ICS				
1.	Doreen Natumanya	GPM87027	End-user of ICS	15/04/2024-17/04/2024	The range and extent of questions asked during the survey is presented in detail in the ensuing sections in section D.3.3	Charu Patwal, Julius Khaukha
2.	Gloria Bako	GPM61687	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
3.	Moses Moses	GPM43736	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
4.	Ajarah Namuli	GEEU11161	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha

5.	Julius Okello	GPM14911	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
6.	Lillian Oyeru	GPM27703	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
7.	Jane Ateng	GPB31061	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
8.	Isabirye Ronald	GPM76006	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha

D.3.3. Interviews with end-users and Stakeholders: VPA 16 (GS12119 - ICS)

No.	Interviewee		ICS technology	Date	Subject	Team member
	End-user's name	Serial Number of ICS				
1.	Alupo Deborah	GPM108287	End-user of ICS	15/04/2024-17/04/2024	The range and extent of questions asked during the survey is presented in detail in the ensuing sections in section D.3.3	Charu Patwal, Julius Khaukha
2.	Josephine Akello	GPM135031	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
3.	Mukungu Florance	GPM100355	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
4.	Nakigudde Sarah	GPB48126	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
5.	Nakyambadde Vicky	GPM170773	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
6.	Nambuya Juliet	GPM218808	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
7.	Namukwaya Faridah	UGCP002319	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha
8.	Hajati Nagadya	GPB75411	End-user of ICS	15/04/2024-17/04/2024		Charu Patwal, Julius Khaukha

Type of questions asked by VVB to end-user:

No.	Questions asked by Team member as part of Project Monitoring Survey	Nature of response
1.	To confirm the name of the End-user, number of family members	Details Provided & observations found consistent with monitoring data
2.	Type of product received and its unique product ID	Details Provided & observations found consistent with monitoring data
3.	Primary source of water for WPS, Number of meals cooked for ICS & EPC, Questions about Baseline devices.	Details Provided & observations found consistent with monitoring data
4.	Benefits received from ICS & EPC unit installed in the households.	Details Provided & observations found consistent with monitoring data
5.	Training received from CME team and monitoring survey confirmation	Details Provided & observations found consistent with monitoring data
6.	Confirmation of having grievance number for outreaching	Details Provided & observations found consistent with monitoring data
7.	Confirmation of the SDGs claimed by the project activity by discussion on the topics such as the money saving, reduction of smoke, fuel usage savings and reduction of time in cooking for the ICS and EPC units distributed to the end-users	Details Provided & observations found consistent with monitoring data
8.	Confirmation of the SDGs claimed by the project activity by discussion on the topics such as the money saving, access to safe water from the project filters, fuel usage savings and reduction of time in boiling of water/ collection of fuelwoods for the WPS units distributed to the end-users	Details Provided & observations found consistent with monitoring data

The end users interviewed during the on-site survey reported that they are happy with the installation of ICS system. They expressed positive feedback and listed benefits of using ICS which includes access to lesser consumption of fuel compared to the baseline usage in ICS. They also reported that they are aware of the grievance mechanism. No negative response was received during the interviews.

D.4. Sampling approach

CME's sampling approach

CME has followed the CDM guidelines for sampling and surveys for CDM project activities and programmes of activities version 9.0 /14/ which is in-line with the registered PoA-DD /10/. The CME has applied Random Sampling at PoA level for different monitoring parameters as per validated PoA DD /10/ and VPA-DDs /11/. 90/10 confidence precision was applied by CME in the sampling which is appropriate as per the single sampling covering the VPAs within the boundaries of PoA geographical location Uganda. Thus, PoA wide single sampling plan was used by the CME.

The sampling approach undertaken by CME is duly explained under section E.6 of the VPA-DDs/11/, which has been assessed by the verification team and found to be correct and in-line to the TPDDTEC v3.1/08/.

VVB's sampling plan:

The VVB has followed standard for Sampling and surveys for CDM project activities and programme of activities (Version 9.0) /14/ and applied acceptance sampling in the verification in accordance with paragraph 28 that "When the project participants or the coordinating/managing entity have applied a sampling approach, the VVB may apply acceptance sampling as described in the steps indicated below as part of validation/verification activities". The validation team has applied acceptance sampling for the baseline consumption of the fuel with the help of baseline survey in line with paragraph 30 and 31 of the sampling standard version 9.0/14/.

As per para 39 of the sampling standard version 9.0/14/, "A DOE may select a different sample size than the one indicated in paragraph 32 above either by choosing a different value for the consumer risk and producer risk (e.g., 20 per cent for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply:

- (a) The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 t CO₂eq;
- (b) The security conditions in the project region prevents inspection of many samples (eg. conflict zones); or
- (c) The project activity or the PoA is located in a least developed country or a host party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified."

The VPA 1 & 16 are located in Republic of Uganda, which is LDCs. Thus, the verification team can choose a different sample size than one indicted in para 32 of the sampling standard/14/.

The verification team selected random sample of CME's sampled records to check the acceptability (or otherwise) of the data for each such record with CME's sample records and determined if the CME's sample records meet the requirements.

The verification team selected the sample size as 08 households for the purpose of onsite inspection/28/ to check the acceptability of CME's sampling results or otherwise.

Sample Size: (Per region)

VPA Number	AQL	UQL	Producer Risk	Consumer Risk	Sample Size; Min	Acceptance No.
GS10967 (VPA 1)	0.5%	20%	10%	20%	8	0
GS12119 (VPA 16)	0.5%	20%	10%	20%	8	0

Technology	Main samples (VVB)	Back up samples (VVB)
VPA 1 (GS10967) ICS	8	3
VPA 16 (GS12119) ICS	8	3

It has now been ensured that all the data is now consistent between the project survey forms and SDG calculation sheet. There were no material errors identified that might have resulted in the overestimation of the SDG impacts.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Area of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the GS4GG monitoring report form	CL#01, CL#07	-	-

Remaining forward action requests from validation and/or previous verifications	-	-	-
VPA's considered for verification and covered under this report	-	-	-
Programme of activities	-	-	-
Compliance of the programme implementation with the registered PoA-DD		-	-
Implementation and operation of the management system	-	-	-
VPA Implementation			
Compliance of the VPA implementation with the included VPA design document	CL#02 CL#03 CL#06	-	-
Post-design certification changes	-	-	-
Compliance of the monitoring activities with the registered monitoring plan	-	-	-
Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
Data and parameters monitored	CL#04 CL#05 CL#08	CAR#01	-
Comparison of monitored parameters with last monitoring period	CL#09	-	-
Implementation of the sampling plan	-	-	-
Assessment of data and calculations of net emission reductions or removals	-	-	-
Calculations of baseline value of each SDG Impact	-	-	-
Calculations of project value of each SDG Impact	-	CAR#02	-
Calculations of leakage GHG emissions	CL#09	-	-
Calculations of net benefits for each SDG Impact	-	-	-
Comparison of actual SDG Impacts achieved during this monitoring period with estimated value	CL#06	-	-
Safeguarding principles	CL#04	CAR#03	-
Stakeholder Inputs and Legal Disputes	-	-	-
Continuous input and grievance mechanism	-	-	-
Internal quality control	-	-	-
Verification opinion	-	-	-
Others (Emission reduction calculation sheet)	CL#10	-	-
Total	10	03	00

SECTION E.Verification findings

E.1. General

E.1.1 Compliance of the monitoring report with the GS4GG monitoring report form

Means of verification	The monitoring report form used is GS4GG Monitoring report template version 1.1 /07/, which is a valid version available at the time of verification. All the sections of the aforesaid form were filled as per the Monitoring report template guide version 1.1 /07/ and all the relevant details were provided in the form.
Findings	CL#07 was raised and resolved.
Conclusion	The monitoring report version 5.0 /05/ has been found to be completed using the valid version of the monitoring report form. The information provided in the monitoring report has been assessed in accordance with the GS4GG principles & requirements version 1.2/01/ and monitoring report template guide /07/.

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

No FAR has been raised in the previous verification.

E.1.3 VPAs considered for verification and covered under this report

Title and GS reference number of the VPA included in the PoA as of the end of this monitoring period	Is the VPA considered for this verification? (yes/no)	Version of the VPA-DD
GS10967: Community Carbon Efficient Cooking Programme - VPA1	Yes	5.0
GS12119: Community Carbon Efficient Cooking Programme - VPA16	Yes	4.0

E.2. Programme of activities

E.2.1 Compliance of the programme implementation with the registered PoA-DD

Means of verification	The purpose of the VPA1 "Community Carbon Efficient Cooking Programme" and VPA16 "Community Carbon Efficient Cooking Programme" is to provide end-users with energy-efficient cookstoves (ICS) in Uganda. The monitoring period covered under this verification is 01/01/2023 - 31/12/2023 (Inclusive of both days). The implementation of the VPA has led to reduce the GHG emissions caused by using non-renewable woody biomass/ charcoal for clean cooking. Therefore, distribution of ICS under the current VPA has provided access to more efficient cookstoves with reduced use of non-renewable fuel and equivalent greenhouse gas emissions to the end-users of Uganda. The VPAs are within the boundaries of PoA location i.e., Uganda. The VPAs covered by the PoA under this monitoring period are VPA 01 & VPA 16 corresponding to the GSID GS10967 to GS12119. The PoA meets the eligibility criteria of the Gold Standard and has applied applicable methodologies for quantification of GHG emission reductions. The latest and valid versions of the methodologies TPDDTEC Version 3.1/08/. The CME for the PoA is UpEnergy Group & Community carbon, which distributed the ICS by actively engaging with the local partners. The VPA Implementer is Community carbon who is responsible for operating VPAs as per CME management system and conduct monitoring and verification. The aforesaid VPAs involve dissemination of Eight types of a. Improved Cookstoves: 1. SHS-BME 2. SHS-ILF 3. SHS-BOLD 4. TG Stove 5. Spend Smart Stove (SST) 6. EE Stove
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7. SHS – PRO

8. CS - PRO

All the deployed systems meet the eligibility requirements of the PoA DD /10/. The details of the systems were verified from the manufacturer's specification /18/ provided by the CME.

Through the Onsite audit/28/, the distribution of ICS claimed by the CME were checked and found to be in-line with the technical description provided in the registered PoA-DD/10/, VPA-DDs/11/ and monitoring report/05/.

The Verification team assessed the following information to verify the capacity and lifetime of systems under the VPAs:

1. Technical specifications of all the devices under ICS issued by technology supplier.

Also, the verification team checked the implementation status of the project activity through interviewing the CME, the VPA implementer, monitoring personnel and the End-Users as defined in the PoA DD/10/, and monitoring report /05/.

Interview of the monitoring personnel involved in the QA/QC procedures revealed that the procedures mentioned in the PoA DD/10/ are being followed and the training records/19/ regarding the trained personnel were checked during onsite visit/28/.

The project location and coordinates shared by CME were verified using the "Google Map app" and by physical site visit which is found to be in-line with the registered PoA-DD/10/ and MR/05/.

Further, based on the review of sales database (presented in ER sheet)/20/, on-site audit survey observations and interview conducted during the on-site audit survey/28/, the verification team found that:

- The VPA(s) were implemented within the boundary of the PoA as described in the revised accepted PoA-DD/10/.
- The CME is same as that mentioned in the revised accepted PoA-DD/10/
- The implementation and operation of the project activity have been conducted in accordance with the description contained in the revised accepted PoA-DD/10/ and included VPA-DDs/11/.
- All physical features of the VPA proposed in the included VPA-DDs/11/ were in place.
- The project participants/VPA implementer has operated the VPAs as per the included VPA-DDs/11/.

An on-site audit survey/28/ was conducted by the verification team; 08 units of each VPA i.e. VPA 1 & VPA 16 ICS were surveyed (Total 16). The uniqueness of the cookstoves was established by examining the UID written on each individual cookstove unit. The information of the distributed ICS was also verified from the distribution database/20/ which was cross checked for 08 samples from each VPA.

The VPAs are within the threshold limits of the applied methodologies /08/.

The verification team has accessed the VPA 16 (GS12119 inclusion under the PoA 10963) and confirms that VPA 16 is in compliance with the requirements defined for the inclusion of VPAs in the registered PoA. Since the VPA 16 is a regular VPA of real case VPA 01 and follows the framework

	/requirements/10/11/ set out by the associated real case VPA 01, establishment of baseline scenario and baseline emission calculation/SDG estimation have already been approved by SustainCERT, and gold standard during design certification. Activity Requirements have been met and found consistent.
Findings	No findings were raised.
Conclusion	Based on the review of the monitoring report, PoA-DD, VPA-DD, distribution database and onsite visit interviews/28/ conducted with the CME, VPA Implementers and end-users, the verification team found that: a) The VPAs are implemented within the boundaries of the PoA i.e., Uganda as described in the PoA-DD b) The distribution and operation of the PoA has been done in accordance with the description reported in the PoA-DD and included VPA-DD. c) The monitoring and implementation process is in line to the VPA-DD, which is further explained under section E.4 of this verification report. d) The crediting period of the PoA is of 20 years starting form 07/01/2021 to 31/12/2040. The monitoring period covered under this verification assessment is 01/01/2023 to 31/12/2023. e) Achieved ERs are lower than the estimated ERs for all the VPAs

E.2.2 Implementation and operation of the management system

Means of verification	The monitoring plan, as explained in section C of the monitoring report, has been found in compliance with the requirements of the applied methodologies/08/. The roles & responsibility of both CME & VPA implementers are well defined. CME's role is primarily with the documentation at both PoA & VPA level, training of the Implementers confirmed during the remote interviews with the CME's team. The documentation and record maintenance for each VPA under the PoA is performed by VPA Implementer. CME is responsible for outreaching, training, and ensuring proper addressal of concerns or grievances made by the end-users related to ICS technology being distributed. Each VPA implementer collected and reported the required data as much as possible to effectively monitor the emission reductions of each VPA in accordance with the monitoring plan in the VPA-DDs. Training records/19/ is being maintained by the VPA Implementer and is also responsible for managing electronic database containing list of units installed/ distributed along with the required end user/ baseline information complied by customer engagement staff. The Distribution database/20/ of total sales records for each of the distributed ICS is maintained electronically along with the paper records and/or SMS tracking records. The verification team confirmed that the distributed ICS units have Unique product ID as confirmed during the onsite survey. This was found consistent with the information given in the distribution database /20/ and it was ensured that double counting is avoided. The management system maintained by the CME is in place with the PoA DD /10/. All relevant registries including UNFCCC, GS and VERRA have been checked by the Verification team and it is confirmed that the VPA 01 & VPA 16 has not been registered as an individual Gold Standard or CDM project and/or as a part of any other CDM PoA and/or any other
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	mechanism to avail climate change mitigation benefits. Verification team found that each cookstove distributed under this PoA has the Brand logo, PoA ID and unique serial number on the product. The cookstove photograph stamping logo and unique serial number have been shared with VVB and verified by Verification team. The measures taken ensure there is no double counting & multiple stove stacking has been reflected in the section E.3.1 of the verification report. Hence, VVB concluded that the project is free from any kind of double counting & multiple stove stacking has been reported.
Findings	No findings were raised.
Conclusion	The verification team assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system, training records /19/ as reported in the monitoring report. The verification team confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.

E.3. VPA Implementation

E.3.1. Compliance of the VPA implementation with the included VPA design document

Means of verification	The registered PoA aims in distribution/installation of the ICS and EPC in Uganda. The PoA is primarily designed to replace the existing fossil fuel / non-renewable woody biomass-based means of installing low emission to efficient cooking devices. UpEnergy Group is the implementer of the VPAs and has fully implemented the VPAs with the help of Sales and Distribution Partners (SDP). This monitoring report includes the implementation and monitoring of 02 VPAs- VPA GS 10967 & GS 12119 in Uganda. The technical specifications/18/ of the improved cookstoves installed under the VPA 1 and VPA 16 are mentioned as follows:			
	Stove Model	Dimensions	Avg. unit Weight (kg)	Thermal Efficiency (%)
	SHS-BME	(Ø 23.93 x 24.43 H) cms	8 kgs	31.00%
	SHS-ILF	(Ø 28 x 26 H) cms	11 kgs	38.00%
	SHS-BOLD	(Ø 26.30 x 24.43 H) cms	8.9 kgs	37.30%
	TG Stove	(Ø 23.90 x 24.4 H) cms	6.87 kgs	35.9%
	CS PRO	(Ø 28 x 26 H) cms	11 kgs	38%
	SpendSmart Stove (SST)	(Ø 23.9 x 24.4 H) cms	6.87 kgs	36.30%
	Energy Empire Stove	(Ø 23.93 x 24.4 H) cms	8.36 kgs	33.00%
	SHS-PRO	(Ø 28 x 26 H) cms	12 kgs	37.90%
The values for the technical details of the improved cookstove such as stove model, dimensions, average unit weight and thermal efficiency are found to be consistent with the technical specification of ICS/18/ provided by the CME as evidence. The same has been assessed				

The type of systems installed under the VPA are as follows:

Type of technology distributed (Service level)	Technology / operating concept	Technology	Implementation level (Cumulative Number of units installed)		Total (VPA 16)	Means of Verification
			VPA 1	VPA 16		
Improved Cookstoves (Households)	Aim to provide clean cooking	SHS-BME	0	0	38,823	The total number of ICS distributed by the end of the monitoring period is 38,823 which is verified from the installation database provided in the ER sheet /15/.
		SHS-ILF	0	0		
		SHS-BOLD	0	-		
		TG Stove	0	-		
		CS PRO	-	19,940		
		SpendSmart Stove (SST)	0	-		
		Energy Empire Stove	0	-		
		SHS-PRO	-	18,883		

The start date of crediting period, inclusion dates of the VPAs were checked from the GS VPA DDs /11/. The First ICS Installation date was checked from the screenshots of distribution database/20/ and sales receipts/24/.

The implementation of the VPA as mentioned above is within the geographical boundary of PoA-DD /10/, which has been verified through review of lat-long data discussed already in Section E.2.1 above. Community carbon & UpEnergy Group is the CME of the PoA and Community carbon is the VPA Implementer and has been already confirmed during validation.

Thus, all the systems have been distributed in line with the VPA DDs/11/.

The implementation of the VPAs, as defined in the monitoring report, were assessed through document reviews and Onsite survey. The VPAs covered in this PoA is within the geographical boundary of the PoA, which constitutes physical boundary as well. The ICS technology distributed under the PoA is verified as follows.

The verification team during the current verification has carried out onsite visit/28/ and interviews with the CME/ VPA Implementers to understand and verify the VPA implementation and deviations in the monitoring, if any. It was observed that each ICS units distributed was assigned a unique product ID, which ensured that there is no double counting for the technologies distributed in the VPA. The unique product ID on each unit, personal information of unit owners and installation date and supply dates of unit was cross checked with the installation database and monitoring samples data provided in ER calculation sheet /15/ and audit sample data. Conditional formatting was applied to check if there are any duplicate entries or serial number in the sales distribution sheet, after checking it was confirmed that there were no duplicate entries were found. The operation of the technology was confirmed through onsite interviews of the sampled institutions' representatives during the onsite audit.

VVB has verified the prevention of double counting in the project as follows:

- Review of End-User Sales Agreements: The VVB reviewed a sample of end-user sales agreements to confirm that each sale is documented, and the distribution

	of stoves is tracked accurately. - Unique Identification of Cookstoves: Each cookstove distributed under the project is equipped with a unique identification number (UID) that corresponds to its batch. This UID system ensures that each stove is distinct and traceable. - Cross-Project UID Verification: The VVB cross-checked all the UIDs from VPA1, and VPA16 by comparing them in a separate sheet. The conditional formatting function was applied to identify any potential duplicate IDs across these projects. This process confirmed that all UIDs were unique and not repeated across different projects managed by the same PD. - Identification Marks: All cookstoves distributed by UpEnergy bear a distinctive identification mark, differentiating them from other stoves in the market. This identification mark was verified by the VVB during the on-site visit. - Check for duplicate entries and double counting: During the desk review, the VVB applied a conditional formatting function in Excel to identify any duplicate entries or instances of double counting in the database. The VVB confirms that there were no duplicate entries or double counting in the database.
Findings	CL#02 and CL#03 were raised and resolved.
Conclusion	a) The verification team is of the opinion that physical features of the VPA have been implemented in accordance with the VPA-DD /11/. b) No specific monitoring equipment had to be installed according to the monitoring plan. c) It is also confirmed, through the onsite audit survey/28/ and review of the supporting documentation that physical features of the component VPA have been implemented in accordance with the VPA-DD /11/. d) The VPA was also found to be completely operational in line with the VPA-DD /11/. e) The information provided in the relevant sections of the monitoring report appropriately describes the implementation and operational status of the PoA

E.4. Post-design certification changes

E.4.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

Not Applicable

E.4.2. Corrections

Not Applicable

E.4.3. Changes to start date of crediting period

Not Applicable

E.4.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.4.5. Changes to project design of approved project

Not Applicable

E.5. Compliance of the monitoring activities with the registered monitoring plan

Means of verification	The monitoring plan as contained in monitoring report /05/ were reviewed against the monitoring requirements of the applied methodologies /08/ as well as PoA-DD and VPA-DD /10/11/ with reference to the technology involved. Based on this review, it was determined that the monitoring plan includes all the required parameters to be monitored in the context of the VPA design and description. Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 03.1/08/.
Findings	No findings were raised
Conclusion	The monitoring plan is in line with the approved methodologies that is included in the PoA-DD and VPA-DD /11/.

E.5.1. Data and parameters fixed ex ante or at renewal of crediting period

Cookstoves

EF_{b,CO2} - CO2 emission factor arising from use of fuels in baseline Scenario (tCO₂/TJ)

SDG Indicator	13 – Climate change
Means of verification	The parameter represents CO ₂ emission factor arising from use of fuels in baseline Scenario. CME has applied the parameter value to be 112 tCO ₂ /TJ. The value of the parameter is sourced from the IPCC default value as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories, volume 2, chapter 2 (Table 2.5)/16/. The purpose of the data is to calculate CO ₂ emission in the baseline scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /16/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

EF_{b,non-CO2} - Non-CO2 emission factor arising from use of fuels in baseline scenario (tCO₂/TJ)

SDG Indicator	13 – Climate change
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Means of verification	The parameter represents non-CO ₂ emission factor arising from use of fuels in baseline Scenario. CME has calculated the parameter value to be 9.46 tCO ₂ /TJ. The value of the parameter is sourced from the IPCC default value as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories /16/. The purpose of the data is to calculate non-CO ₂ emission in the baseline scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

EF_{p,CO₂}- CO₂ emission factor arising from use of fuels in project scenario (tCO₂/TJ)

SDG Indicator	13 – Climate change
Means of verification	The parameter represents CO ₂ emission factor arising from use of fuels project Scenario. CME has applied the parameter value to be 112 tCO ₂ /TJ. The value of the parameter is sourced from the IPCC default value as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories, volume 2, chapter 2 (Table 2.5)/16/. The purpose of the data is to calculate CO ₂ emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

EF_{p,non-CO₂}- Non-CO₂ emission factor arising from use of fuels in project scenario (tCO₂/TJ)

SDG Indicator	13 – Climate change
Means of verification	The parameter represents non-CO ₂ emission factor arising from use of fuels in Project Scenario. CME has applied the parameter value to be 9.46 tCO ₂ /TJ. The value of the parameter is sourced from the IPCC default value as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories /16/. The purpose of the data is to calculate non-CO ₂ emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DDs/11/. The value applied is correct and justified.

EF_{el,y}- Emission factor for electricity generation for source j in year y

SDG Indicator	13 – Climate change
Means of verification	The parameter represents Emission factor for electricity generation for source j in year y. CME has applied the parameter value to be 0.1158 tCO ₂ /MWh. The value of the parameter is sourced from the UNFCCC Harmonization of Standards for GHG accounting dated December 2021 /29/. The purpose of the data is to calculate project emission for Electric cooking.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /16/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

TDL_{j,y}- Average technical transmission and distribution losses for providing electricity to source j in year y

SDG Indicator	13 – Climate change
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Means of verification	The parameter represents Average technical transmission and distribution losses for providing electricity to source j in year y. CME has applied the parameter value to be 0.20 in fractions or 20%. The value of the parameter is sourced from CDM Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0/27/. The purpose of the data is to calculate CO ₂ emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /16/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

NCV_b- Net calorific value of the fuels used in the baseline

SDG Indicator	13 – Climate change
Means of verification	The parameter represents Net calorific value of the fuels used in the baseline. CME has applied the parameter value to be 0.0156 TJ/ton. The value of the parameter is sourced from IPCC default 2006, volume 2, chapter 1 (Table 1.2)/16/ and is the default IPCC value for fuelwood. The purpose of the data is to calculate emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

NCV_p- Net calorific value of the fuels used in the project

SDG Indicator	13 – Climate change
Means of verification	The parameter represents Net calorific value of the fuels used in the baseline. CME has applied the parameter value to be 0.0156 TJ/ton. The value of the parameter is sourced from IPCC default 2006, volume 2, chapter 1 (Table 1.2)/16/ and is the default IPCC value for fuelwood. The purpose of the data is to calculate emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

f_{NRB,i,y}- Non-renewability status of woody biomass fuel in scenario i during year y

SDG Indicator	13 – Climate change
Means of verification	The parameter represents non-renewability status of woody biomass fuel in scenario i during year y. CME has applied the parameter value to be 0.89. The value of the parameter is sourced from Assessment based on CDM Methodological tool 30: Calculation of the fraction of non-renewable biomass, Version 03.0/30/ and is the default IPCC value for fuelwood. The purpose of the data is to calculate CO ₂ emission in the project scenario.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

P_{b,y}- Specific fuel consumption for an individual technology in baseline scenario b during year y converted to tons/day

SDG Indicator	13 – Climate Change
Means of verification	The parameter represents Specific fuel consumption for an individual technology in baseline scenario b during year y converted to tons/day. CME has applied the parameter value to be 0.01591 tonnes/day. The

	value of the parameter is sourced from Baseline survey and KPT/26//30/ and the value is fixed ex-ante for fuelwood in subsequent issuance verified from the registered VPA-DDs/11/. The purpose of the data is to calculate baseline emission.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DDs/11/. The value applied is correct and justified.

HHS_{baseline}- Percentage of users reporting money saving due to reduced fuel consumption in baseline

SDG Indicator	1 - No Poverty
Means of verification	The parameter represents percentage of users reporting money saving due to reduced fuel consumption in baseline. CME has applied the parameter value to be 0%. The value of the parameter is fixed ex-ante for subsequent issuance verified from the registered VPA-DD /11/. The purpose of the data is to calculate SDG 1 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

HHsmoke_{baseline}- Percentage of users reporting reduction in smoke/PM emissions while cooking on improved stove in baseline.

SDG Indicator	3 - Good Health and Well Being
Means of verification	The parameter represents percentage of users reporting reduction in smoke/PM emissions while cooking on improved stove in baseline. CME has applied the parameter value to be 0%. The value of the parameter is fixed ex-ante for subsequent issuances. The purpose of the data is to calculate SDG 3 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

HHtime_{baseline}- Percentage of users reporting time savings for cooking /fuel collection in baseline.

SDG Indicator	5 – Gender Equality
Means of verification	The parameter represents percentage of users reporting time savings for cooking /fuel collection in baseline. CME has applied the parameter value to be 0%. The value of the parameter is fixed ex-ante for subsequent issuance/11/. The purpose of the data is to calculate SDG 5 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

HHclean_{baseline}- Number of users having access to clean and affordable energy (Number of ICS operating) in baseline.

SDG Indicator	7 – Affordable and clean energy
Means of verification	The parameter represents number of users having access to clean and affordable energy (Number of ICS operating) in baseline. CME has applied the parameter value to be 0. The value of the parameter is fixed ex-ante for subsequent issuance/11/. The purpose of the data is to calculate SDG 7 impact.
Findings	No findings were raised.

Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.
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EG_{baseline}- Number of quantitative employment and income generation in baseline

SDG Indicator	8 - Decent Work and Economic Growth
Means of verification	The parameter represents number of quantitative employment and income generation in baseline. CME has applied the parameter value to be 0. The value of the parameter is fixed ex-ante for subsequent issuance/11/. The purpose of the data is to calculate SDG 8 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

FC_{baseline}- Fuel consumption in baseline

SDG Indicator	12 - Responsible Consumption and Production
Means of verification	The parameter represents fuel consumption in baseline. CME has calculated the parameter through following formula: from the average fuel consumption per HH in baseline (tonnes eq. fuelwood/HH/day) i.e. $0.01591 \times 365 \text{ day} = 5.807 \text{ tonnes/year}$ where HH fuel is determined from Baseline KPT survey/30/. The value applied is 5.807 tonnes/year which is fixed ex-ante for subsequent issuance/11/. The purpose of the data is to calculate SDG 12 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

FCHH_{baseline}- Average fuel consumption per HH in baseline

SDG Indicator	15 - Life on Land
Means of verification	The parameter represents average fuel consumption per HH in baseline. CME sourced the parameter value from Baseline survey /26/and KPT/30/ and considered it to be 0.01591 tonnes-eq.fuelwood/HH/day. The value of the parameter is fixed ex-ante for subsequent issuance. The purpose of the data is to calculate SDG 15 impact.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /05/ and ER calculation sheet /15/ are consistent with the PoA-DD /10/ and VPA-DD /11/. The value applied is correct and justified.

E.5.2.Data and parameters monitored.

P_{p,y} Specific fuel consumption for an individual technology in project scenario p during year y converted to tons/days

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Every 2 years
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

	Monitoring equipment	Weighing scale, Moisture meter
	How were the values in the monitoring report verified?	VPA 1: 0.00857 VPA 16: 0.00842 The verification team confirmed the value from the Project Kitchen Performance Test/30/. KPT was carried out in accordance with Annex 4 of the applied methodology TPDDTEC/08/. database
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

U_{p,y} Usage rate in project scenario p during year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: 90% VPA 16: 90% The verification team confirmed the value from the spreadsheet Monitoring Summary_ICs/31/. The usage rate was capped at maximum 90% for both the VPAs, VPA 1 and VPA16 in accordance with the Good Practices Monitoring Requirement Version 2.0.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

N_{p,y} Technologies in the project database for project scenario p through year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Continuous
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: ICS: 1,54,078 units, EPC: 20 Units ² VPA 16: ICS: 1,57,934 units The verification team confirmed the value from the database/20/. The value is used for calculating the emission reductions. The end-users selected during through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

LE_{p,y} Leakage in project scenario p during year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Every two years
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA

² For current Monitoring period project developer is not claiming ERs from EPCs

	How were the values in the monitoring report verified?	VPA 1: 16,036 tCO₂e/ year VPA 16: 25,391 tCO₂e/ year The verification team confirmed the value from the Monitoring survey/31/. The value is used for calculating the emission reductions. The value is taken as the potential leakage reasons have been listed in the MR according to the paragraph 3.11.3 of TPDDTEC/08/. The verification team reviewed the VPA-DDs/11/ leakage arising from Source A in VPA 16 and from Source A and Source E in VPA 1. The leakage emission for VPA 1 & VPA 16 has been reflected below: <table><tr><th>VPAs</th><th>Technology</th><th>Leakage Emissions</th></tr><tr><td>VPA 1</td><td>ICS</td><td>16,036</td></tr><tr><td>VPA 16</td><td>ICS</td><td>25,391</td></tr></table> The leakage assessment has been done in line with the methodologies "Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 03.1/8/.			VPAs	Technology	Leakage Emissions	VPA 1	ICS	16,036	VPA 16	ICS	25,391
	VPAs	Technology	Leakage Emissions										
	VPA 1	ICS	16,036										
	VPA 16	ICS	25,391										
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes												
In case project participants have deviation from gold standard?	NA												
Findings	CL#09 was raised and resolved.												
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.												

μ_y : Adjustment to account for any continued use of pre-project devices (baseline stove) in the project scenario during the year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	The verification team confirmed the value can be sourced from the Monitoring survey Spreadsheet "Monitoring Summary_ICS

		and usage survey/31/. The value of the parameter is captured during project KPT which was conducted for the current monitoring period.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

EG_{P.d.y} : Quantity of electricity consumed by the project electricity consumption source j in year y³

Means of verification	Criteria/Requirements	Assessment/Observations	
	SDG Indicator	13	
	Measuring /Reading /Recording frequency	Annual	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes	
	Monitoring equipment	Not Applicable on ICS	

³ In the current monitoring period both the VPA 1 and 16 distributed only one of Clean Energy Product distributed i.e., Improved Cookstove. PP has chosen not to claim Emission Reduction for EPCs distributed in the last MP

	How were the values in the monitoring report verified?	Not Applicable on ICS	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable on ICS	
	In case project participants have deviation from gold standard?	NA	
Findings	No findings were raised.		
Conclusion	In the current monitoring period both the VPA 1 and 16 distributed only one of Clean Energy Product distributed i.e., Improved Cookstove. PP has chosen not to claim Emission Reduction for EPCs distributed in the last MP. Hence, the parameter is not applicable for the current Monitoring period.		

H_{p,y} : Project technology-hours in the project database for project scenario p through year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	NA
	Monitoring equipment	Not Applicable on ICS
	How were the values in the monitoring report verified?	Not Applicable on ICS
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable on ICS
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	In the current monitoring period both the VPA 1 and 16 distributed only one of Clean Energy Product distributed i.e., Improved Cookstove. PP has chosen not to claim Emission Reduction for EPCs distributed in the last MP. Hence, the parameter is not applicable for the current Monitoring period.	

P_{ep,y} : Quantity of fuel consumed by the baseline technology in the project scenario in year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	NA
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	NA
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	Not applicable for ICS
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	In the current monitoring period both the VPA 1 and 16 distributed only one of Clean Energy Product distributed i.e., Improved Cookstove. PP has chosen not to claim Emission Reduction for EPCs distributed in the last MP. Hence, the parameter is not applicable for the current Monitoring period.	

p_{new,i}: Efficiency of the project cookstove

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	Value applied is NA The verification team confirmed that since no WBT was conducted for this monitoring period and all the values for the technology was based on KPT reports/30/. Hence the value of the parameter is NA.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	CL#05 was raised and resolved.	
Conclusion	The parameter has been not used in the present monitoring period.	

HHS_{project}: Percentage of households confirming money saving with improved cookstove

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	1
	Measuring /Reading /Recording frequency	Continuous
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: 90% for ICS VPA 16: 90% for ICS The verification team confirmed the value from the Distribution Database/20/. The value is used for monitoring of SDG 1. The number of clean energy products distributed are recorded as part of the CME database which will be used to estimate this parameter. The end-users selected through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

HHsmoke_{project}: Percentage of households confirming less smoke with the use of improved cookstove

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	3
	Measuring /Reading /Recording frequency	Once every 2 years (biennially)
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: 90% for ICS VPA 16: 90% for ICS The verification team confirmed the value from the monitoring survey/31/. The value is used for monitoring of SDG 3 and

		monitored by asking the users if there is less smoke with the use of improved stove. The end-users selected through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey. Moreover, CME has applied the maximum cap of 90% for both the VPAs, VPA 1 and VPA 16 in accordance with the requirement of Usage Practices: Good Practices monitoring Requirements Version 2.0 and has been demonstrated through the usage surveys which is found to be appropriate and acceptable.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

HHtime_{project}: Percentage of households reporting time saving associated with cooking and fuel collection.

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	5
	Measuring /Reading /Recording frequency	Once every 2 years (biennially)
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: 90% for ICS VPA 16: 90% for ICS The verification team confirmed the value from the monitoring survey/31/. The value is used for monitoring of SDG 5 and monitored by asking the users if there have been able to save time with the use of improved stove. The end-users selected through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting	NA

	of emission reductions and are necessary QA/QC processes in place?	
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology /08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

HHclean_{project}: Access to affordable and clean energy (Number of ICS operating)

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	7
	Measuring /Reading /Recording frequency	Continuous
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: ICS: 138,670 VPA 16: ICS: 142,141 The verification team confirmed the value from the CME Database/20/. The value is used for monitoring of SDG 7 and estimated by using the number of improved cookstove recorded in the CME database. The end-users selected during through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology/08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

EG_{project}: Total no of jobs created.

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	8
	Measuring /Reading /Recording frequency	Continuous
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

	Monitoring equipment	NA
	How were the values in the monitoring report verified?	73 The verification team confirmed the value from the CME Database/20/. The value is used for monitoring of SDG 8 and CME maintains the record of job created. The end-users selected during through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey. Moreover, the assessment team has assessed of the document titled, 'UpEnergy List of employees', it has been observed that CME has provided employed 73 employees by the implementation of this project activity in the Republic of Uganda. The list of employees provided by CME is found to be appropriate and the same has been submitted along with the revised report. Hence, VVB concluded that the no. of jobs reflected in the MR are appropriate and acceptable to the VVB.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology/08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

FC_{project}: Consumption of non-renewable biomass per household

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	12
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: ICS: 3.12 tonnes/HH/annum VPA 16: ICS: 3.07 tonnes/HH/annum The verification team confirmed the value from the Monitoring survey/31/. The value is used for monitoring of SDG 12 and SDG 12. CME maintains the record during KPT conducted in HH. The end-users selected during through acceptance sampling were also checked for

		the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology/08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

FCHH_{project}: Average Fuel consumption per household in project scenario

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	15
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	VPA 1: ICS: 0.00857 tonnes eq. fuelwood/day VPA 16: ICS: 0.00842 tonnes eq. fuelwood/day The verification team confirmed the value from the Monitoring survey/31/. The value is used for monitoring of SDG 15. The end-users selected during through acceptance sampling were also checked for the details mentioned in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan/11/ and applied methodology/08/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/11/.	

E.5.3.Comparison of monitored parameters with last monitoring period

Means of verification	VPA 1: Improved Cookstove				
	Data/Parameter	Value obtained in this monitoring period		Value obtained last monitoring period	
		VPA 01	VPA 16	VPA 01	VPA 16
	P _{D.V}	0.00857	0.00842	0.00820	0.00834

	N _{p,y}	154,078	157,934	154,078	119,111
	U _{p,y}	90.00%	90.00%	89.40%	90.00%
	f _{NRB,f,y}	0.89	0.89	0.89	0.89
	CME has applied the maximum cap of 90% for both the VPAs, VPA 1 and VPA 16 in accordance with the requirement of Usage Practices: Good Practices monitoring Requirements Version 2.0 and has been demonstrated through the usage surveys which is found to be appropriate and acceptable.				
Findings	CL#09 was raised and resolved.				
Conclusion	The verification team confirms that all the values of monitoring parameters obtained in this monitoring period is accurately calculated and reported in monitoring report and ER sheet /15/.				

E.6. Implementation of sampling plan

Means of verification	The CME as per the monitoring plan has followed CDM Guidelines for sampling and surveys for CDM project activities and programmes of activities /32/ to design the sampling plan for the VPAs in line with the applied methodologies are TPDDTEC version 3.1 /08/. As per the sampling plan stated in the monitoring report /05/, a minimum 90% confidence interval and a 10% margin of error requirement is achieved for the sampled parameters.	
	For VPA 1 & VPA 16 has ICS technology.	
	Parameters determined through sampling.	
	Cookstoves	
	Data/Parameter	Description
	$U_{p,y}$	Usage rate in project scenario p during year y
	μ_y	Adjustment to account for any continued use of pre-project devices (baseline stove) in the project scenario during the year y
	$P_{p,y}$	Specific fuel consumption for an individual technology in project scenario p during year y converted to tons/day
	$P_{ep,y}$	Quantity of fuel consumed by a baseline technology in project scenario in year y
Target population:	The target population is households of Uganda. The VPAs i.e., GS10967 & GS12119 is implemented in the same physical location of Uganda with same baseline scenario and technology and therefore the CME has chosen to apply across VPA sampling.	
	The CME has applied Random sampling for determining the usage rate of units distributed based on age as project technologies age over time and/or are replaced and accordingly calculate the sample size.	
	Sample size calculation:	
	CME has 2 VPAs under current verification. Moreover, the sample size has been determined through 90/10 C/P, but the CME has applied minimum limit of 100 sample for the sample size for all the technologies (30 samples per vintage). Hence, 190 from VPA 01 & 123 samples from VPA 16, In total 313 samples were selected for ICS, all the products have been considered in the monitoring survey/31/.	
Project KPT:		

The CME has applied single sampling and calculated the sample size based on table given in TPDDTEC methodology/08/. The CME selected 97 from VPA 1 & 100 samples from VPA 16 were randomly selected considering the age group of ICS.

Survey dates:

The collection of monitoring data is done by trained personnel appointed by CME team. Usage related surveys from 02/02/2024 to 21/02/2024. The KPTs performed from 09/02/2024 to 19/02/2024/30/ for VPA 01.

Reliability check:

The sampling approach undertaken by CME is duly explained under section D.4 of the monitoring report /05/, which has been assessed by the verification team and found to be correct and in-line to the standard /14/. The reliability check confirms that confidence precision has been met by the sampling plan applied by the CME.

The PD has accounted for the continued use of baseline stoves in the project scenario through the parameter ' μ_y ,' as specified in the applied methodology 'TPDDTEC v3.1'/08/ and the monitoring plan/11/. This parameter captures the use of baseline stoves by end-users, as monitored annually, and is factored into the emission reduction calculations. Data from the Monitoring Summary and KPT analysis indicate that households still using baseline stoves have been appropriately included in the calculations/15/. The assessment team confirmed from the ER sheet that the approach applied for the calculation of the parameter ' μ_y ,' and appropriate and is in accordance with the applied Methodology Section 1.0 point 3 (p. 5). Hence, VVB concluded that the approach applied by PD is appropriate & Acceptable.

Conservativeness approach followed during the monitoring period: -

1. The PD clarifies that the baseline fuel consumption for both VPA 1 and VPA 16 was initially calculated using only the primary fuel utilized by the sampled households, excluding secondary fuels. However, the fuel consumption data for the current monitoring period for VPA 1 and VPA 16 now includes all types of fuels used by the sampled households across all their stoves, including the primary project stove and any additional stoves (e.g., stove 1, stove 2, etc.), as evidenced by the results from the monitoring survey and Kitchen Performance Tests (KPTs) conducted. This comprehensive accounting method has led to a reported decrease in Emission Reductions (ERs) by 2.28% for VPA 1 and 2.25% for VPA 16
2. The PD clarified that the 2015 National Charcoal Survey of Uganda, conducted by the Ministry of Energy and Mineral Development (MEMD), estimates an average charcoal production efficiency of 12.5% using traditional kiln methods, translating to a wood-to-charcoal conversion ratio of 1:8. However, the baseline and project fuel consumption, and consequently the emission reduction calculations, apply a wood-to-charcoal conversion ratio of 1:6. This use of a 1:6 ratio instead of 1:8 has led to a 10.88% reduction in ER for VPA 1 and an 11.64% reduction in ER for VPA 16. Additionally, the CDM information note, revised on June 20, 2024 (https://cdm.unfccc.int/Sunset_CMS_ControlledSlots/public_inputs/sunset_cms/storage/contents/stored-file-20240624161613578/Report_on_Updated_fNRB_Values_20%20June%202024.pdf), paragraph 47, supports the FAO default of using 6 units of wood to produce 1 unit of charcoal. Footnote 12 in the same document notes that *The CDM default wood to charcoal conversion ratio was recently changed from 6:1 to 4:1; however, we feel that the new value is too conservative and not supported by data*". The VVB has concluded that the approach adopted by PD regarding the references provided are based on actual conditions in Uganda, validating the use of the 6:1 conversion ratio for emission reduction calculations. This approach is deemed appropriate and acceptable.

	3. The assessment team has confirmed that the values applied in the emission reduction calculations are specific to wood, in accordance with the methodology TPDDTEC version 3.1. While the application of a 1:3 ratio could be considered appropriate if the NCV for charcoal (0.0295 TJ/tonne) were utilized, the consistent application of the NCV for fuelwood justifies the continued use of the 6:1 conversion ratio in this context. Furthermore, it has been confirmed that the emission reduction calculations are based on the fuel savings approach, specifically the KPT method, as opposed to the thermal energy savings method. This is aligned with the methodology reflected in the design-certified VPA DDs. Additionally, this approach is consistent with the guidance provided in the concept note "Analysis and options regarding caps used in AMS-I.E, AMS-II.G & TOOL30" Version01 & IPCC's "ENERGY - Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual," which indicates that, in the absence of localized data, a default value of 6 kg of wood per kg of charcoal is applicable. Therefore, VVB concluded that the values applied in the emission reduction calculations are appropriate and acceptable. It should be noted that the wood-to-charcoal conversion ratio of 6:1 has been validated through the design certification of the respective VPA DDs (GS10967 and GS12119). Both projects have successfully completed performance reviews by SustainCERT, with credits issued by the Gold Standard, using the same 6:1 conversion factor. 4. The verification from KPT results indicates higher baseline stove usage percentages compared to those identified in the usage survey (VPA1: 27% vs 29%; VPA16: 29% vs 31%), leading to conservative estimation of project fuel consumption for both VPA 1 and VPA 16. 5. The approved value of 37.25 tCO₂/TJ for EF_{b, non-CO2} & EF_{p, non-CO2} in the VPA1 DD by GS / SustainCERT has been disregarded by the PD in the emission reductions calculation for the current monitoring period. Instead, the PD opted for the IPCC value of 9.46 tCO₂/TJ to ensure conservatism, resulting in a 25.46% reduction in VPA 1 ERs for this period. 6. If the monitoring survey records less than 7 days per week of project stove usage by end users who otherwise use it regularly, those households are excluded from the usage rate determination by the PD. 7. Additionally, it should be noted that the usage survey included 90% more ICS samples than the minimum requirement for VPA 1 and 23% more for VPA 16. Similarly, for KPT, 7% more samples were considered for VPA 1 and 11% more for VPA 16 than the minimum requirement, contributing to a comprehensive representation of the project population and enhancing result accuracy. PD demonstrates their commitment towards integrity and the conservative approach adopted in the calculation of emission reductions achieved by the project activity during the monitoring period and this was verified by VVB.
Finding s	No findings were raised.
Conclusion	Sampling plan followed in the PoA and reported in monitoring report, ER sheet /16/ is in line with CDM guidelines for sampling and surveys /33/ and applied methodologies /08/.

E.7. Assessment of data and calculations of emission reductions or net removals

E.7.1. Calculations of baseline value of each SDG Impact

Means of verification	Improved Cookstoves: VPA 1 & VPA 16			
	The targeted SDG and its corresponding baseline estimate are given below:			
	Sustainable Development Goals	Sustainable Development	Parameter description	Baseline estimate

	Goals Targeted		
SDG 13	Climate Action (mandatory)	Emission Reduction	VPA 01: 1,523,393 tCO ₂ e VPA 16: 1,527,424 tCO ₂ e
SDG 1	No Poverty	Percentage of users reporting money savings due to reduction in purchased fuel consumption in project / installed under the project	0%
SDG 3	Good Health and Well being	Percentage of users reporting reduction in smoke/PM after shifting to ICS in project	0%
SDG 5	Gender Equality	Percentage of users reporting time saving due to reduction in collected fuel consumption/cooking time/boiling water	0%
SDG 7	Affordable and Clean Energy	Number of households with operational stoves	0
SDG 8	Decent Work and Economic Growth	Total number of jobs created	0
SDG 12	Responsible Consumption and Production	Average Fuel consumption per HH in baseline	VPA 01: 5.81 VPA 16: 5.81
SDG 15	Life on Land	Percentage of users confirmed less use of fuel for boiling Fuelwood eq savings reported by users in the project	VPA 01: 0.0159 tonnes equivalent fuelwood/HH/day VPA 16: 0.01591 tonnes equivalent fuelwood/HH/day

For SDG 13. Climate Action, baseline emissions are calculated as follows:

$$BE_{b,y} = B_{b,y} * ((f_{NRB,b,y} * EF_{b,fuel,CO2}) + EF_{b,fuel,non-CO2}) * NCV_{b,fuel}$$

Where:

$BE_{b,y}$	Emissions for baseline scenario b during the year y in tCO ₂ e
$B_{b,y}$	Quantity of fuel consumed in baseline scenario b during year y, in tons
$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass
$NCV_{b,fuel}$	Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton)

	EF _{b,fuel,CO2}	CO2 emission factor of the fuel that is substituted or reduced. 112 tCO ₂ /TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel									
	EF _{b,fuel,nonCO2}	Non-CO2 emission factor of the fuel that is reduced, 9.46 tCO ₂ /TJ									
	$B_{b,y} = N_{p,y} * P_{b,y}$										
	Where:										
	B _{b,y}	Quantity of fuel consumed in baseline scenario b during year y, in tons									
P _{b,y}	Specific fuel consumption for an individual technology in baseline scenario b during year y converted to tons/day 0.01591										
N _{p,y}	Project technology-days in the project database for project scenario p through year y										
	<table><tr><th>VPA</th><th>Technology</th><th>Baseline Emissions</th></tr><tr><td>VPA 1</td><td>ICS</td><td>1,523,393 tCO₂e</td></tr><tr><td>VPA 16</td><td>ICS</td><td>1,527,424 tCO₂e</td></tr></table>		VPA	Technology	Baseline Emissions	VPA 1	ICS	1,523,393 tCO ₂ e	VPA 16	ICS	1,527,424 tCO ₂ e
VPA	Technology	Baseline Emissions									
VPA 1	ICS	1,523,393 tCO ₂ e									
VPA 16	ICS	1,527,424 tCO ₂ e									
	The calculation of the baseline has been verified from the ER calculation sheet/15/ and was found correct and consistent. The calculation for baseline value of SDG Impact for Electric Pressure Cooker (EPC) has not been undertaken by CME as there were no distribution of EPC during the current monitoring period.										
Findings	No findings were raised.										
Conclusion	The verification team verified that a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under Section E.5 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /15/ of final Monitoring report /05/. b) The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.5 of this report. c) The calculations of baseline emissions as presented in the corresponding ER calculations sheet /15/ of final Monitoring report /05/ were checked and found to be consistent with the formulae and methods described in the registered monitoring plan of VPA-DDs/11/, registered PoA-DD /10/ and the applied methodologies /08/. d) All assumptions used in the emission calculations were found appropriate and therefore justified e) Appropriate emission factors, IPCC default factors and other reference values have been correctly applied. This has also been elaborated under Section E.5 of this report.										

E.7.2. Calculations of project value of each SDG Impact

Means of verification	Improved Cookstoves: VPA 1 & VPA 16		
	The targeted SDG and its corresponding project estimate are given below for VPA 1:		
	Sustainable Development Goals	Sustainable Development Goals Targeted	Parameter description
	SDG 13	Climate Action (mandatory)	Emission Reduction
			Project estimate
			VPA 01: 616,492 tCO ₂ e VPA 16: 621,700 tCO ₂ e
	SDG 1	No Poverty	Percentage of users reporting money savings due to reduction in purchased fuel consumption in project / installed under the project
			VPA 01: 90% VPA 16: 90%
	SDG 3	Good Health and Well being	Percentage of users reporting reduction in smoke/PM after shifting to ICS in project
			VPA 01: 90% VPA 16: 90%
	SDG 5	Gender Equality	Percentage of users reporting time saving due to reduction in collected fuel consumption/cooking time/boiling water
			VPA 01: 90% VPA 16: 90%
	SDG 7	Affordable and Clean Energy	Number of households with operational stoves
			VPA 01: 138,670 VPA 16: 142,141
	SDG 8	Decent Work and Economic Growth	Total number of jobs created
			VPA 01: 73 VPA 16: 73
	SDG 12	Responsible Consumption and Production	Average Fuel consumption per HH in baseline
			VPA 01: 3.12 % VPA 16: 3.07 %
	SDG 15	Life on Land	Percentage of users confirmed less use of fuel for boiling Fuelwood eq savings reported by users in the project
			VPA 01: 0.0085 tonnes equivalent fuelwood/HH/day VPA 16: 0.00842 tonnes equivalent fuelwood/HH/day
The calculation for project value of SDG Impact for Electric Pressure Cooker (EPC) has not been undertaken by CME as there were no distribution of EPC during the current monitoring period.			
For SDG 13. Climate Action,			

	Project emissions due to biomass consumption is applicable for this project.		
	$PE_{p,y} = B_{p,y} * ((f_{NRB,p,y} * EF_{p,fuel,CO2}) + EF_{p,fuel,non-CO2}) * NCV_{p,fuel}$		
	$B_{p,y} = N_{p,y} * ((P_{p,y} * U_{p,y}) + (P_{b,y} * (1 - U_{p,y})))$		
	Where:		
	$PE_{p,y}$	Emissions for project scenario p during the year y in tCO2e	
	$B_{p,y}$	Quantity of fuel consumed in project scenario p during year y, in tons	
	$f_{NRB,y}$	Fraction of biomass used in year y that can be established as non-renewable biomass	
	$NCV_{p,fuel}$	Net calorific value of the project fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton)	
	$EF_{p,fuel,CO2}$	CO2 emission factor of the fuel that is substituted or reduced. 112 tCO2/TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel	
	$EF_{p,fuel,nonCO2}$	Non-CO2 emission factor of the fuel that is reduced	
$N_{p,y}$	Project technology-days in the project database for project scenario p through year y		
$P_{p,y}$	Specific fuel consumption for an individual technology in project scenario p during year y converted to tons/day		
$U_{p,y}$	Cumulative usage rate for technologies in project scenario j during year y, based on cumulative installation rate and drop-off rate		
$P_{b,y}$	Specific fuel consumption for an individual technology in baseline scenario b during year y converted to tons/day		
	Hence,		
	VPA	Technology	Project Emissions
	VPA 1	ICS	890,865 tCO ₂ e
	VPA 16	ICS	880,333 tCO ₂ e
Findings	No findings were raised.		
Conclusion	The verification team verified that: a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under section of this verification report. Also, the monitoring has been provided for the review in the ER calculation sheet /15/. b) The information provide in the monitoring report /05/ was cross-checked with other source, wherever appropriate.		

E.7.3.Calculation of leakage GHG emissions

Means of verification	The verification team reviewed the VPA-DDs/11/ and found that the leakage arising from Source A in VPA 16 and from Source A and Source E in VPA 1. The leakage emission for VPA 1 & VPA 16 has been reflected below:		
	VPA	Technology	Leakage Emissions
	VPA 1	ICS	16,036
	VPA 16	ICS	25,391
	The leakage assessment has been done in line with the methodologies "Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 03.1. As reported, the leakage shall be		

	reassessed after the end of second year of crediting period since, the monitoring frequency for leakage is "every two years".
Findings	No findings were raised.
Conclusion	Leakage assessment was found to be done in line to the applied methodologies /08/and verified from VPA-DD /11/.

E.7.4. Calculations of net benefits for each SDG Impact

Means of verification	Improved Cookstove: VPA 1 & VPA 16				
	Net benefits achieved under each SDG Impact are tabulated below:				
	SD G	SDG Impact	Baseline estimate	Project estimate	Net benefit
	1	Percentage of users reporting money savings due to reduction in purchased fuel consumption in project / installed under the project	VPA 01: 0% VPA 16: 0%	VPA 01: 90 % VPA 16: 90 %	VPA 01: 90 % VPA 16: 90 %
	3	Percentage of users reporting reduction in smoke/PM after shifting to ICS in project	VPA 01: 0% VPA 16: 0%	VPA 01: 90 % VPA 16: 90 %	VPA 01: 90 % VPA 16: 90 %
	5	Percentage of users reporting time saving due to reduction in collected fuel consumption/cooking time/boiling water	VPA 01: 0% VPA 16: 0%	VPA 01: 90 % VPA 16: 90 %	VPA 01: 90 % VPA 16: 90 %
	7	Number of households with operational stoves	VPA 01: 0% VPA 16: 0%	VPA 01: 138,670 VPA 16: 142,141	VPA 01: 138,670 VPA 16: 142,141
	8	Total number of jobs created	VPA 01: 0% VPA 16: 0%	VPA 01: 73 VPA 16: 73	VPA 01: 73 VPA 16: 73
	12	Average Fuel consumption per HH in baseline	VPA 01: 5.81 % VPA 16: 5.81 %	VPA 01: 3.12 % VPA 16: 3.07 %	VPA 01: 46.32 % VPA 16: 47.1 %
	13	Emission Reduction	VPA 01: 0 tCO ₂ e VPA 16: 0 tCO ₂ e	VPA 01: 616,492 tCO ₂ e VPA 16: 621,700 tCO ₂ e	VPA 01: 616,492 tCO ₂ e VPA 16: 621,700 tCO ₂ e
	15	Percentage of users confirmed less use of fuel for boiling Fuelwood eq savings reported by users in the project	VPA 01: 0.0159 tonnes-equivalent fuelwood/day	VPA 01: 0.0085 tonnes-equivalent fuelwood/day	VPA 01: 1021.87 tonnes-equivalent fuelwood/day

		VPA 16: 0.01591 tonnes- equivalent fuelwood/da y	VPA 16: 0.00842 tonnes- equivalent fuelwood/da y	VPA 16: 1064.52 tonnes- equivalent fuelwood/da y
	The emission reductions are calculated as follows: $ERY = BEY - PEY - LEY$ Where: ERY = Emission reductions in year y (t CO₂e/yr) BEY = Baseline emissions in year y (t CO₂e/yr) PEY = Project emissions in year y (t CO₂e/yr) LEY = Leakage emissions in year y (t CO₂e/yr)			
Findings	CAR#02 was raised and resolved.			
Conclusion	The verification team verified that: - The complete data was available and is duly reported; - The description with regards to cross-check of reported data is included under respective parameters and its assessment has been done in section E.5 of this report - Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed - The total number of ERs achieved during the current monitoring period for VPA 1 is 616,492 tCO₂e and for VPA 16 is 621,700 tCO₂e.			

E.8. Comparison of actual SDG Impacts achieved during this monitoring period with estimated value

Means of verification	The value estimated in ex ante calculations of approved PoA-DD /10/and VPA-DD /11/ for the monitoring period and the actual values achieved during this monitoring period has been report in section E.5 of the monitoring report /05/.		
	SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period (tCO2e)	Actual values achieved during this monitoring period (tCO2e)
	SDG 13 - GS10967 (VPA 01)	838,987	616,492
	SDG 13 - GS12119 (VPA 16)	632,931	621,700
	Total	14,71,918	12,38,192
	The emission reductions have been correctly calculated in accordance with the applied methodologies /08,09/. The ER calculation sheet /15/ were reviewed and all the values report in monitoring report is consistent with the ER sheet. There is decrease in achieved SDG Impacts from estimated value in approved VPA DD, mainly due to lesser number of distributed devices.		

	Verified and certified emission reductions as per commitment period:	
	Monitoring period	Amount achieved
	01/01/2023 - 31/12/2023 (VPA 01)	616,492 tCO ₂ e
	01/01/2023 - 31/12/2023 (VPA 16)	621,700 tCO ₂ e
Findings	No findings were raised.	
Conclusion	The verification team confirms that - The actual values of achieved ERs during this monitoring period has been correctly reported in the monitoring report. - The total number of ERs achieved during the current monitoring period is 12,38,192 tCO₂e (inclusive of ERs achieved for VPA 1 and VPA 16 i.e., 616,492 tCO₂e and 621,700 tCO₂e respectively).	

E.9. Safeguarding reporting

Means of verification	There was no safeguarding principle assessed 'Yes' or 'Potentially' and added to this monitoring plan.
Findings	CAR#03 was raised and resolved.
Conclusion	There was no safeguarding principle assessed 'Yes' or 'Potentially'. Hence, safeguarding principle is not Applicable

E.10. Stakeholder Inputs and Legal Disputes

Means of verification	There were no legal disputes, and no inputs/ grievances were received for the current Grievance Expression book/35. CME collects feedback on a regular basis and during onsite audit survey with end-users it was found that none of the end-users have issues with the ICS system. No negative feedback was received during onsite audit surveys/31/.
Findings	No findings were raised.
Conclusion	The verification team confirms that the PoA receives no negative feedback on the ICS units distributed to institutions.

E.11. Continuous input and grievance mechanism

Means of verification	There was no input and grievances received during the monitoring period. As mentioned in section E.2 of VPA-DD/11/, the grievance mechanism is at place and end users are aware of the grievance mechanism. This was confirmed from the on-site visit, by checking the grievance expression book.
Findings	No findings were raised.
Conclusion	The verification team confirms that the PoA receives no negative feedback on the ICS units distributed to institutions.

SECTION F. Internal quality control

The draft verification report prepared by the verification team was reviewed by an independent technical review team 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 GS rules/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 were independent of the verification team.

The technical review process may accept or reject the verification opinion or raise additional findings in which case these must be resolved before requesting for registration. The technical review process is recorded in the internal documents of Earthood, and the additional findings gets included in the report. The final report approved by the technical reviewer is authorized by Managing Director and issued to the CME and/or submitted for request for registration, as appropriate on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

The verification of PoA "UpEnergy – Social and Climate Impact Programme" was performed based on rules and requirements defined by GS4GG Principles and Requirements/01/ and UNFCCC for the CDM program of activities. The purpose of this project activity is to provide ICS to the households, thereby reduction of greenhouse gas emissions from the burning of non-renewable woody biomass and/or charcoal for cooking and boiling of water for drinking purpose in Uganda. Earthood Services Private Limited (Earthood), contracted by UpEnergy Group & Community carbon, has performed the independent verification of the emission reductions for the GS PoA "UpEnergy – Social and Climate Impact Programme" (GSID: 10963) for the third monitoring period 01/01/2023 - 31/12/2023 (Inclusive of both days) for VPA 1 (GSID: 10967) and second monitoring period 01/01/2023 - 31/12/2023 (Inclusive of both days) for VPA 16 (GSID: 12119) as reported in the Monitoring Report, version 06, dated 06/09/2024.

Earthood confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. Project representative "UpEnergy Group" & "Community 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.

The verification activities were conducted in accordance with Earthood services private limited CDM Quality Manual System as per the steps indicated under Section A of this report. The verification process has resulted in conclusion that the monitoring report is in compliance with applicable CDM and GS rules and regulations and in accordance with applied methodologies Technologies and Practices to Displace Decentralized Thermal Energy consumption (TPDDTEC), version 03.1/8/.

As a result, it is confirmed that the emission reductions achieved from the implementation of GS PoA "UpEnergy – Social and Climate Impact Programme" are correctly reported in the GS Monitoring Report, version 06, dated 06/09/2024 and corresponding ER calculation sheets for the monitoring period 01/01/2023 - 31/12/2023 for VPA 1 (GSID: 10967) is 616,492 tCO₂e and for VPA 16 (GSID: 12119) is 621,700 tCO₂e which are amount as 12,38,192 tCO₂e.

SECTION H. Certification statement

Earthood Services Private Limited (Earthood), contracted by UpEnergy, has performed the independent verification of the emission reductions for the GS PoA "UpEnergy – Social and Climate Impact Programme" (GSID: 10963) for the third monitoring period 01/01/2023 - 31/12/2023 for VPA 1 (GSID: 10967) (Inclusive of both days) and second monitoring period 01/01/2023 - 31/12/2023 for VPA 16 (GSID: 12119) as reported in the Monitoring Report, version 06, dated 06/09/2024.

Project representatives UpEnergy Group & Community carbon is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the programme of activity. It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion, the GHG emissions reductions reported for the project activity for the period 01/01/2023 - 31/12/2023 (Inclusive of both days) are fairly stated in the Monitoring Report, version 06, dated 06/09/2024. The GHG emission reductions were calculated correctly based on the approved baseline and monitoring methodologies Technologies and Practices to Displace Decentralized Thermal Energy consumption (TPDDTEC), version 3.1 /08/ and the monitoring plan contained in the PoA-DD version 5.0 dated 12/01/2022. Earthood Services Private Limited is able to certify that the GS PoA "UpEnergy – Social and Climate Impact Programme" (GSID: 10963) during the monitoring period 01/01/2023 - 31/12/2023 has achieved emission reductions amount to 616,492 tCO₂e for VPA 1 (GSID: 10967) and 621,700 tCO₂e for VPA 16 (GSID: 12119).

Verified and certified emission reductions as per commitment period:

Monitoring period	Amount achieved (tCO ₂ e / VERs)
01/01/2023 - 31/12/2023 (GSID: 10967),(VPA 01)	616,492 tCO ₂ e

01/01/2023 - 31/12/2023 (GSID: 12119), (VPA 16)	621,700 tCO ₂ e
TOTAL	12,38,192 tCO₂e

Appendix 1. Abbreviations

Abbreviations	Full texts
General	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CME	Coordinating and Managing Entity
CL	Clarification Request
CO ₂	Carbon dioxide
CP	Crediting Period
DR	Desk Review
EB	Executive Board
EI	External Individual
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
IR	Internal Resource
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation Process
MoC	Modalities of Communication
MoV	Means of Verification
MP	Monitoring Plan
ODA	Official Development Assistance
PA	Project Activity
PCP	Project Cycle Procedure
PD	Project Developer
PDD	Project Design Document
PE	Project Emission
PoA	Programme of Activities
PoA DD	Programme of Activities Design Document
PS	Project Standard
RCP	Renewal of Crediting Period
RFR	Request for Registration
tCO ₂ e	tonnes of Carbon di Oxide equivalent
TPH	Tonnes Per Hour
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VPA	Verified Project Activity
VVB	Validation and Verification Body
VVS	Validation and Verification Standard
Project Specific	
ICS	Improved Cookstove
GS4GG	Gold Standard for Global Goals
EPC	Electric Pressure Cooker
LSC	Local Stakeholder Consultation
MoV	Means of Verification
SDG	Sustainable Development Goals

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Charu Patwal		
Education	M.Sc. Environmental Science		
Experience	2+ years		
Field	Research & Sustainability		
Approved Roles			
Team Leader	YES (VM)		
Validator	YES (VM)		
Verifier	YES (VM)		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (TA 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	Date	17/07/2023
Approved by	Deepika Mahala (Technical Manager)	Date	17/07/2023

Competence Statement			
Name	Sushant Vashisht		
Education	M.Sc. Environmental science and Technology		
Experience	1+ years		
Field	Environment science and technology		
Approved Roles			
Team Leader	YES (VM)		
Validator	YES (VM)		
Verifier	YES (VM)		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (VM 1.2, 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	Date	23/06/2023
Approved by	Deepika Mahala (Technical Manager)	Date	23/06/2023

Competence Statement	
Name	Sukanya Phukan
Education	M.Sc (Environmental Science and Technology) B.Sc (Zoology)
Experience	1+ year
Field	Environment Science
Approved Roles	
Team Leader	YES (VM only)

Validator	YES (VM only)		
Verifier	YES (VM only)		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (VM TA 1.2, 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	Date	23/06/2023
Approved by	Deepika Mahala (Technical Manager)	Date	23/06/2023

Competence Statement			
Name	Anvesha Verma		
Education	B.Tech Biotechnology		
Experience	08 Months		
Field	Climate Change		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Shifali Guleria (Quality Manager)	Date	04/01/2024
Approved by	Deepika Mahala (Technical Manager)	Date	04/01/2024

Competence Statement	
Name	Julius Sam Khaukha
Country	Uganda
Education	Bachelors in Social Administration
Experience	7 Years +
Field	Education and Social Work
Approved Roles	
Team Leader	NO
Validator	NO
Verifier	NO
Methodology Expert	NO
Local expert	YES (Uganda)
Financial Expert	NO
Technical Reviewer	NO
TA Expert	NO

Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Kumar Gautam	Date	01/03/2018

Competence Statement			
Name	Shifali Guleria		
Education	M.Sc. (Environmental Studies and Resource Management), TERI University		
Experience	3+ year		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I.D, ACM0002)		
Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	Date	18/02/2022
Approved by	Ashok Gautam	Date	18/02/2022

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	GS	GS Principle & Requirements	Version 1.2	Others
2.	GS	GS Validation & Verification Body Requirements	Version 2.0	Others
3.	UNFCCC	Standard: CDM PS for PoA	Version 3.0	Others
4.	UNFCCC	Standard: CDM VVS for PoA	Version 3.0	Others
5.	CME	Monitoring report	Version 06, dated 06/09/2024	CME
6.	UNFCCC	UNFCCC Procedures & Requirements	-	Others
7.	GS	Template Guide Monitoring report	Version 1.1	Others
8.	GS	Technologies And Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC)	Version 3.1	Others
9.	GS	Emission Reductions from	Version 1.0	Others
10.	CME	PoA-DD	Version 5.0 Dated 12/01/2022	CME
11.	CME	VPA-DDs GS10967- VPA01 & GS12119- VPA16	VPA01- Version 05 VPA16- Version 04	CME
12.	GS	GS Programme of Activities requirements	Version 1.2	Others
13.	GS	Community Services Activity requirements	Version 1.2	Others
14.	UNFCCC	Standard for Sampling and surveys for CDM project activities and programmes of activities	Version 9.0	Others
15.	CME	ER calculation sheet	VPA01: version 3 VPA16: version 5	CME
16.	IPCC	IPCC default value for wood and charcoal: IPCC 2006 Guidelines for National Greenhouse gas inventories	2006	Others
17.	GS	GS Design Review	21/12/2022	Others
18.	CME	Manufacturer's / Technical specifications of ICS	-	Others
19.	CME	Training records	12/11/2021	CME
20.	CME	Distribution database	-	CME
21.	CME	Stakeholder consultation report	Version 2 Dated 15/12/2021	CME
22.	CME	Sample carbon transfer agreement between UpEnergy (CME) and end-users	Dated 01/01//2021	CME
23.	CME	Double counting Declaration	-	CME
24.	CME	Sales receipts	-	CME
25.	UNFCCC	TOOL 05: Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	Version 3	Others
26.	CME	Baseline survey	-	CME

27	UNFCCC	CDM Methodological tool 30: Calculation of the fraction of non-renewable biomass	Version 03	Others
28	Others	Onsite audit details (Checklist, Attendance list, End-user list)	15/04/2024-17/04/2024	Others
29	UNFCCC	UNFCCC Harmonization of Standards for GHG accounting (2021). List of Grid Emission Factors	Dated December 2021	Others
30	CME	Kitchen Performance Test documents	09/02/2024-19/02/2024	CME
31	CME	Monitoring survey Spreadsheet "Monitoring Summary_ICS & "Usage survey" Spreadsheet	-	CME
32	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programmes of activities	Version 04.0	Others
33	CME	Evidence of contracts/ employee list	-	CME
34	Others	Hygiene Awareness Campaign Report	-	CME
35	CME	Grievance Expression Book and Grievance helpline number	-	CME
36	CME	LSC Feedback form	-	CME
37	CME	Purchase agreement Upenergy Group and Re-Renewable Hub (U) Ltd.	Dated 28/02/2020	Others

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

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

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
X				
Project developer response				Date: DD/MM/YYYY
X				
Documentation provided by project developer				
X				
VVB assessment				Date: DD/MM/YYYY
X				

Table 2. CL from this verification

CL ID	01	Section no.	E.1.1.	Date: 22/04/2024
Description of CL				
As per the GS template guidelines, PD shall mention FARs from the previous performance certification in section B.1.1. Since the current MP is undergoing verification, PD shall clarify the reason for stating no FARs raised for the current MP.				
Project developer response				Date: 22/04/2024
The PD has now mentioned "There are no FARs raised in the previous performance review to be addressed in the current monitoring period of VPA 1 and VPA 16" in the section B1.1 of the updated MR.				
Documentation provided by project developer				
Updated MR v2				
VVB assessment				Date: 29/04/2024
The assessment team has assessed the revised MR version 02. There was no FAR raised during the last verification. VVB has crosschecked the same with the previous verification report. Hence, concluded that the statements reported in the MR is found to appropriate. CL#01 Closed.				

CL ID	02	Section no.	E.3.1.	Date: 22/04/2024
Description of CL				

1. In Key project information, version of VPA-DD is mentioned as "3" for VPA 16, However, the latest version available on the project webpage is Version 4. PD is requested to clarify.
2. In Key project information, Duration of Monitoring period is reflected as "01/01/2021 – 31/12/2022", However, as per the signed contract the duration of the MP is "01/01/2023 – 31/12/2023". PD shall clarify the inconsistency reported.
3. In table 1, The values for SDGs 13, 07, 08 & SDG 15 are reflected higher than the Ex-ante estimates mentioned in the registered VPA-DDs. PD is requested to clarify.
4. In the section A of the MR, under para two of section A.1., The information regarding the CME/implementer is found to be inconsistent with the registered VPA-DDs, As per the VPA-DDs the "VPA is implemented by Community Carbon & UpEnergy Group is the Coordinating and Managing Entity (CME) of the PoA", However, In the MR it is reported as "The VPAs are implemented by Community Carbon in which UpEnergy Group is the Coordinating and Managing Entity (CME) of the PoA".
5. In section A.2 "Location of Project", The geo coordinates "latitude - 4°N, longitude - 29° E" lies outside the project boundary, PD is requested to clarify. The screenshot has been inserted as comment in the MR for your reference.

Project developer response
Date : 22/04/2024

1. The PD has now changed the version of the VPA DD for VPA 16 from 3 to 4 as in line with the GS webpage as requested.
2. The PD has now corrected the clerical error and now updated the duration of the monitoring period to 01-01-2023 to 31-12-2023 in the section 'Key project Information' of the updated MR.
3. The PD would like to clarify that the higher values reflected are only for SDG 7 and 8 which are a result of more than expected distribution and jobs created in the project implementation. The same explanation has now also been added in the updated monitoring report.
4. The PD has now reported the CME and the coordinating entity in line with the VPA DD in the updated MR section A.1.
5. The PD has now updated the geo coordinate to match the location of the project boundary i.e entire 'Republic of Uganda' in the updated MR.

Documentation provided by project developer

Updated MR v.2

VVB assessment
Date: 29/04/2024

1. The assessment team has assessed the revised the MR v2, the version of the VPA-DD has been revised as version 4 for the VPA 16 which is the latest VPA-DD as reflected in the Project webpages.
2. PD is requested to revise the monitoring period, as the per ER sheet the MP is 01/01/2023 – 31/12/2023 in the key project information. However, in the MR v2, the MP is reflected as 01/12/2023 – 31/12/2023 . Hence, the point no. 2 of CLCL#02 remains Open.
3. VVB has assessed the revised MR v2, the explanation for the higher Achieved Values then ex-ante estimated and Explanation for SDG 7 & 8 is found to be appropriate and acceptable.
4. VVB has reassessed the revised MR v2, the information regarding the VPA implementer has been revised and found to be in line with the registered VPA-DD. Hence, point no. 4 of CL#2 stands closed.
VVB has assessed the revised geo coordinates "latitude – 0.74°N, longitude - 35° E", and found that the geo coordinates reported lies withing the geographical boundaries of Kenya. Hence, PD is requested to review and clarify. #OPEN

Project developer response
Date: 07/05/2024

2. The PD has now revised the monitoring period (01/01/2023 to 31/12/2023) mentioned in the updated MR to match the ER sheet.
5. The PD has now revised the geo coordinates for the project boundary, the geo coordinates for all 4 extreme boundaries of the country 'Republic of Uganda' have now been added to the section A of the updated MR.

Documentation provided by project developer	
Updated MR v.3	
VVB assessment	Date: 08/05//2024
After assessment of current monitoring period duration under Key Project Information, the updated duration of current monitoring period for VPA 1 (GS 10967) and VPA 16 (GS 12119) is observed to be 01/01/2023 to 31/12/2023.and is found to be correct and acceptable. Therefore, CL#02 is CLOSED.	

CL ID	03	Section no.	E.3.1.	Date: 22/04/2024
Description of CL				
Following observation from section B: 1. Under table 1, section B.1.: a. There is a total of 7 models have been reported in the MR. However, in the VPA-DD there are only 6 models available (5 in VPA 16 & 6 in VPA 1). PD is requested to clarify the additional stove. b. Product models are also different than the product models reflected in the VPA DDs.				
Project developer response				Date: 23/04/2024
1. The PD would like to clarify that as mentioned in the design certified VPA DD (" <i>Other models for all cooking technologies for residential may also be distributed in this VPA over time</i> ") there were additional model of the similar efficiency (<i>respective thermal efficiencies or specific consumptions do not differ by more than +/-5% in absolute terms</i>) which were distributed as well. Further, as evidence the PD has sent the technical specification of all the distributed stove models to VVB with this response. 2. As mentioned in the above response the PD would like to clarify that the additional models were distributed which had the similar efficiency (<i>respective thermal efficiencies or specific consumptions do not differ by more than +/-5% in absolute terms</i>) as the models declared in the design certified VPA DD. Further, as evidence the PD has sent the technical specification of all the distributed stove models to VVB with this response.				
Documentation provided by project developer				
Technical Specification of all the distributed CEPs				
VVB assessment				Date: 29/04/2024
After assessment of the revised MR, stove technical specification and VPA-DD for GS 12119 (VPA 1 and VPA 16), it has been observed that the improved cookstoves models have similar thermal efficiency. The following has been mentioned in the VPA-DD on page number 21, " <i>Other models for all cooking technologies for residential may also be distributed in this VPA over time</i> " which substantiates the doubt on the presence of stoves distributed apart from the ones mentioned in the VPA-DD. Hence, the stoves are found to be in alignment with the statement stated above. Therefore, CL#03 is Closed.				

CL ID	04	Section no.	E.5.1, E.9	Date: 22/04/2024
Description of CL				
1. In para 'Project Database' of Section C. 'Description of Monitoring System Applied by the Project', the PD is requested to clarify and mention the type of CEP pertaining to this VPA, and the frequency of the project database monitored. 2. In para 'Disposal Policy' of Section C. 'Description of Monitoring System Applied by the Project', the PD is requested to clarify how they will ensure that the end users will give back the unsalvageable parts of the technology to PD. Is there any mechanism that needs to be followed and what is the means of collecting the disposed parts from end users?				
Project developer response				Date: 23/04/2024

1. The PD has now added a footnote in the section C of the updated MR to denote what type of CEP are included in both VPA 1 and 16. The PD has also added the frequency of the project database monitoring.
2. The PD would like to clarify that The UpEnergy regional hubs and main Warehouse will be the designated collection and storage area for all the returned cookstoves. All stoves collected at regional hubs are transferred to the central warehouse for proper and coordinated management where they should be properly sorted according to model / manufacturer and clearly marked to avoid mix-up and secured to prevent unauthorized access. Further, stoves that are beyond repair or refurbishment should be recycled and disposed of. The recycling in compliance with local environmental regulations and best practices. Please see the attached disposal policy sent with this response for more details.

Documentation provided by project developer

UpEnergy Disposal Policy

VVB assessment
Date: 29/04/2024

1. VVB has assessed the revised MR v2, the footnote has been revised and added only one of Clean Energy Product distributed i.e., (Improved Cookstove). However, the frequency is still unclear, PD is requested to clarify whether the frequency is Annual/biennial/Continuous. Hence, point no 1 of the CL#04 stands OPEN.
2. To be assessed.

Project developer response
Date: 07/05/2024

The PD has now revised section C point 2 'Project Database' and has now added the frequency.

Documentation provided by project developer

Updated MR v.3

VVB assessment
Date: 08/05//2024

As per assessment of point 2 of Section C of revised MR v3, it has been observed that the frequency has been updated as 'Continuous' which is found to be appropriate and acceptable. Therefore, CL#04 is CLOSED.

CL ID	05	Section no.	E.5.1	Date:	22/04/2024
Description of CL					
Under section D.2 of the MR, data/parameter " $\eta_{new,i}$ ", This parameter is to establish design efficiency of all the stoves. Please provide supportive and confirm design efficiency of all stove especially SHS Pro included under VPA 16					
Project developer response					Date: 23/04/2024
The PD has edited the parameter table in section D.2 of the MR to make it clear that for the current monitoring period only KPT results were used to claim the emission reductions, and this approach is in line with the certified monitoring plan. Further, as evidence for the thermal efficiency of the stoves the PD has sent the technical specification of all the models to VVB with this response.					
Documentation provided by project developer					
Updated MR v2					
VVB assessment					Date: 29/04/2024
The assessment team has reviewed the revised MR v2, it is clearly reflected in the Data/Parameter " $\eta_{new,i}$ " the approach is based on KPT and not through the WBT. However, PD is requested to add the value of Thermal efficiency of each model of ICS distributed under the VPAs. #OPEN					
Project developer response					Date: 07/05/2024
The PD would like to clarify that for the current monitoring period KPT results were used to determine the project fuel consumption. Thus, the WBT approach wasn't used the thermal efficiency achieved for the deployed stoves hasn't been monitored and represented in the parameter " $\eta_{new,i}$ " of the section D.2 (Data and Parameters monitored). Further, the thermal efficiency of each model distributed has already been represented in the section B.1 of the MR.					
Documentation provided by project developer					
Monitoring Report v.3					
VVB assessment					Date: 08/05//2024

After assessment of the parameter " $p_{new,i}$ " under Section D.2 of revised MR, it has been observed that even though the KPT results were used to determine the project fuel consumption and WBT was not undertaken to determine the same. The thermal efficiency of the stoves is mentioned under Section B.2 which is found to be appropriate and acceptable. Therefore, CL#05 is CLOSED.

CL ID	06	Section no.	E.8	Date:	22/04/2024
Description of CL					
In section E.4 & E.5, The values for SDGs 13, 07, 08 & SDG 15 are reflected higher than the Ex-ante estimates mentioned in the registered VPA-DDs. Additionally, under section E.5 of the MR, the ex-ante estimated values for SDG 7, 8 & SDG 15 are inconsistent with the registered VPA-DDs. PD is requested to clarify.					
Project developer response					Date: 23/04/2024
The PD would like to clarify that the ex-ante values of all the SDGs have been updated in the section E.4 and E.5 of the MR and are now in line with the design certified VPA-DD. Further, the values for SDG,7 and 8 are higher than the ex-ante because of more than expected distribution achieved in the project.					
Documentation provided by project developer					
Updated MR v2					
VVB assessment					Date: 29/04/2024
The assessment team assessed the revised the MR v2, the explanation of higher achieved values of SDG 7 & 8 are found to be acceptable by the VVB. Hence, VVB concluded that the due to increased number of ICS distribution more jobs were generated. Moreover, the same been confirmed through the employment records shared by the CME. CL#06 is closed.					

CL ID	07	Section no.	B.1	Date:	24/05/2024
Description of CL					
It has been observed in the section B.2 of the MR that the Model CS-PRO, which is mentioned in database (GS12119_VPA16_ER_MP2_v1, tab "Sales database") as one of the models distributed in VPA 16 is missing from this list. PD to justify model's compliance with requirements of VPA-DD.					
Project developer response					Date: 29/05/2024
The PD has now updated the table of Stove models distributed in the section B.2 of the MR. The stove model CS Pro has now been added to the table. The updated MR has been shared with the auditor with this response.					
Documentation provided by project developer					
Updated MR v5					
VVB assessment					Date: 30/05/2024
The assessment team has confirmed that the Table of Stove models under section B.2 of the MR has been revised. All the models reflected in the VPA-DDs are now reflected in the MR version 5. Hence, VVB concluded that the finding stands closed.					

CL ID	08	Section no.	D.2	Date:	24/05/2024
Description of CL					
It has been observed in the section D.2 of the MR that Some of the households in the monitoring surveys mentioned that they "gave away traditional cookstove" to someone else. In most rural communities, woodstoves are mostly noted to be fixed stove made from clay/ mud or three stone fires. PD is requested to clarify what is meant by "giving stove away" in context of stoves using wood as fuel.					
Project developer response					Date: 29/05/2024
The PD would like to clarify that the in the section D.2 of the MR and in the monitoring results of the Emission Reduction sheet, "giving away traditional cookstove" to someone else is a case of leakage source A (i.e the baseline stove used by the household at the time of distribution has been handed over to someone else in the project boundary) as explained in the leakage calculation and in the MR section E.3. Further, the PD has attached the distribution receipts of the all the 4 households identified with this source of leakage to show that the replaced baseline stove at the time of distribution was a portable technology.					
Documentation provided by project developer					
VVB assessment					Date: 30/05/2024

The assessment team concluded that the explanation provided by the PD is found to be appropriate and acceptable by the VVB. Additionally, VVB crosschecked the distribution receipts of the end-users which makes VVB believe that the baseline stove were portable and hence, CL#08 stands closed.

CL ID	09	Section no.	D.3	Date: 24/05/2024
Description of CL				
It has been observed in the section D.3 of the MR that the actual usage rate for this MP is 94 and 95% respectively for 2021 and 2022 vintages, which are much higher than the values from previous monitoring period. PD is requested to clarify if it assessed the reason for increased usage rate since last monitoring period.				
Project developer response				Date: 29/05/2024
The PD would like to clarify that Usage rate has been monitored through usage survey which is being conducted on an annual basis. As such there is no relation between vintage and usage rate. Usage rate primarily depends on the continuous usage i.e. usage of the stove for number of meals prepared in a day, number of days stove being used in a week, and stove's wear & tear. When the project household experience reduced efficiency, they tend to use more than one stove for meal preparation and reduce the usage frequency of project stove in a day / week. The PD has not considered the stove usage when the stove is not being used on a daily basis, as a conservative approach. Meaning, the PD considers the usage not only based on the drop off of the stoves but also based on the number of days used in a week c. In line with this, the PD would like to highlight that in the previous MP there were only 3 households disregarded due to usage less than 7 days whereas in the current MP 6 households have been disregarded, similarly in VPA 1 it was 8 households in the current MP and 2 households in the previous MP. This shows that there have been more households removed from the usage as compared to the previous MP but the usage is high because of low drop off in the current MP.				
Documentation provided by project developer				
VVB assessment				Date: 30/05/2024
The assessment team concluded that the explanation provided by the PD is found to be acceptable by the VVB, Hence, concluded that the CL#09 stands closed.				

CL ID	10	Section no.	ER Sheet	Date: 24/05/2024
Description of CL				
Following observation in the ER sheet:				
1. It has been observed in the ER sheet "Monitoring Summary_ICS" that the Total Number of family members are reported as "661" for VPA 16 & "1069" for VPA 1. However, sum of cell AI, AJ, AK & AL in VPA 16 is "665" and "1105" for VPA 01. PD is requested to clarify how total number of family members is calculated. 2. In the ER sheet "Monitoring Summary_ICS", Column "AN" Number of stoves are reflected as 1 & 2 based on the Family size. PD is requested to clarify How did PD check is a single stove distributed to a household with 9 or 12 family members sufficient to meet cooking requirements of the household, without additional usage of traditional stoves? This is applicable for both VPAs. 3. In the ER sheet "KPT Results_ICS", column Z of VPA 16, the unit of measurement is reflected as "Kg" for Charcoal Moisture and for VPA 01 the unit of measurement is not reflected. Further, it is not clear if the value is measured or calculated, and PD is requested to clarify what is the least count of the moisture meter used. The value here is showing up with 14 decimal places, which seems to be calculated. Same comment applicable for all such entries of moisture meter measurement. 4. In the ER sheet "SDGs" the information regarding the SDG 13 is not reflected. PD is requested to clarify why the SDG 13 is not considered in the ER sheet of VPA 16.				
Project developer response				Date: 29/05/2024

1. The PP would like to clarify that the total family size calculated in the monitoring results sheet was a summation error and it has now been updated to match the total in the different age categories. The total of both the columns now stands at '665' in VPA 16 and '1105' in VPA 1. The PD would also like to highlight that they've also updated the outlier analysis to adult equivalent in the KPT results sheet of both VPA 1 and VPA 16. This change in the approach has resulted in one household being an outlier in VPA 16, but this outlier has been retained to practice conservativeness in the ER claimed. The updated ER sheet has been shared with the VVB with this response. 2. The PD would like to clarify that the PD has no direct control over the households choosing the number of cooking technologies to be used. The PD covers all the necessary questions during the monitoring survey visits to ensure that all the cooking technologies available at the household for cooking purpose are captured in the results. 3. The PD would like to clarify that the unit of measurement for moisture is in percentage (%) and the same has now been updated in the ER sheets 'KPT Results' tab of both the VPAs 1 and VPA 16. Further, the values of the moisture captured showing till 14 decimals was because it's a calculated value based on 3 different readings taken for the same piece of fuel at the time of KPTs, but the PD has now truncated these values to show only 3 decimals for better representation. The updated ER sheets have been shared with the VVB with this response 4. The PD has now added the SDG 13 information in the ER sheet of VPA 16, the updated ER sheet has been submitted to the VVB with this response.	
Documentation provided by project developer	
Update ER sheet: VPA 1 v4 and VPA 16 v2	
VVB assessment	Date: 30/05/2024
1. The assessment team has re assessed the revised ER sheet. Sum of cell AI, AJ, AK & AL in VPA 16 is "665" and "1105" for VPA 01 has been rectified and hence, found to be acceptable to the VVB. 2. The explanation provided by the PD I found to be appropriate and acceptable to the Assessment team, Hence, VVB accepts the explanation provided with respect to single stove distributed to a household with 9 or 12 family members sufficient to meet cooking requirements of the household. 3. The assessment team has re assessed the revised ER sheet. The unit of measurement for Charcoal Moisture has been rectified in the revised ER sheet. Hence, VVB concluded that the revisions is acceptable to the VVB. 4. The assessment team has reassessed the revised ER sheet. The SDG 13 has now been included in the SDGs sheet. Hence, VVB concluded that the revisions are acceptable to the VVB.	
CL#10 stands closed.	

Table 3. CAR from this verification

CAR ID	01	Section no.	E.5.1	Date: 22/04/2024
Description of CAR				
Under section B.1 of the MR, the total number of ICS is distributed under both the VPAs. However, the implementation of ICS occurred from 01/01/2021 – 30/04/2022 for VPA 01 & 01/05/2022 – 28/02/2023 which comprises of 2 vintages for each VPA. Hence, PD is requested to provide the distribution of ICS year-wise, as well as segregate them model-wise, for the current monitoring period. Moreover, kindly provide the manufacturer's specifications for all the ICS models that have been distributed.				
Project developer response				Date: 23/04/2024
The PD has now added the vintage wise and product wise distribution for both the VPA 1 and 16 in the section B.1 of the updated MR.				
Documentation provided by project developer				
Updated MR v.2				
VVB assessment				Date: 29/04/2024
The vintage wise distribution has been added in the section B.1. of the revised MR v2. The data has been crosschecked with the distribution database, which is found to consistent with the ER sheet, Hence, the VVB concluded that revisions are found to be okay and acceptable. CAR#01 Closed				

CAR ID	02	Section no.	E.7.2	Date: 22/04/2024
Description of CAR				
In section E.6, PD shall explain the cause of increase in the actual impacts achieved by the VPA for SDG 13, and SDG 8 during this MP as per GS template guidelines.				
Project developer response				Date: 23/04/2024
The PD has now updated the section E.6 of the MR and has added the explanation for the increase in the actual impacts for SDG 7 and 8. PD would also like to clarify that there is no increase in SDG 13 when compared with the ex-ante value.				
Documentation provided by project developer				
Updated MR v2				
VVB assessment				Date: 29/04/2024
The assessment team has reviewed the revised MR v2, The Explanation of higher achieved Values for the SDG 7 & 8 has been reflected as the greater number of ICS were distributed then the expected distribution which leads to more Mandy's of distributors. Hence, CME created more Jobs. Hence, this was accepted by the VVB. Moreover, the same been confirmed through the employment records shared by the CME. CAR#02 is closed.				

CAR ID	03	Section no.	E.9	Date: 22/04/2024
Description of CAR				
In section F, PD shall explain the safeguards reporting is reflected as "Not Applicable". However, The Principles are mentioned in the registered VPA-DDs. Hence, PD is requested to keep the information consistent with the registered VPA-DD.				
Project developer response				Date: DD/MM/YYYY
The PD has now added the safeguarding reports in the section F of the updated MR in line with the design certified VPA DD.				
Documentation provided by project developer				
MR v.2				
VVB assessment				Date: 29/04/2024
The section F of the MR has been made consistent with the VPA-DD in the revised MR V2. However, PD is requested to clarify: Under section F – Safeguarding Reporting In accordance with the GS safeguarding principles and requirements, PP shall seek and include expert stakeholder opinions on the following SGPs: • Principle 4.1: Sites of Cultural and Historical Heritage • Principle 4.2: Forced Eviction and Displacement • Principle 4.3: Land Tenure and Other Rights • Principle 4.4: Indigenous Peoples • Principle 8.1: Impact on Natural Water Patterns/Flows • Principle 8.2: Erosion and/or Water Body Instability • Principle 9.10: High Conservation Value Areas and Critical Habitats • Principle 9.11: Endangered Species PP shall clarify how they comply with the requirements for these safeguarding principles. Additionally, Requesting PD to provide clarification on the recycling/disposal process for damaged cookstoves, as outlined in MR Principle 9.5 regarding hazardous and non-hazardous waste. Justification is needed to explain why damaged cookstoves are deemed irrelevant to this principle. #OPEN				
Project developer response				Date: 07/05/2024

The PD would like to clarify that the GS safeguarding principles and requirement have already been assessed and validated by the validating VVB during the design certification of the project; The details presented in the MR are as per the design certified VPA DD. Further, the PD would also like to clarify that the project activity implemented under the VPA doesn't have any direct or indirect impacts on the above-mentioned principles. Additionally, the PD also confirms that there is no hazardous material involved in the manufacturing of the cookstoves and all non-hazardous waste are handled and disposed of as per the local regulatory norms. The PD has a functional disposal policy which is adhered to when damaged cookstoves are returned via warranty to the PD. The PD has attached an undertaking on this and submitted to the VVB with this response.

Documentation provided by project developer

PD's Undertaking on Hazardous and Non- Hazardous waste

VVB assessment

Date: 08/05//2024

As per assessment of the document, "Recycling and Disposal Policy for Charcoal Cookstoves" provided by PD, it has been observed that UpEnergy has a policy mechanism for waste recycling/ disposal process. As mentioned by PD, there are no hazardous substances involved in the manufacturing of the improved cookstoves which aligns with the waste disposal policy. Therefore, CAR#03 is CLOSED.

Table 4. FAR from this verification

FAR ID	NA	Section No.	-	Date : DD/MM/YYYY
Description of FAR				
NA				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
VVB assessment				Date: DD/MM/YYYY
NA				