



**Verification and certification report form for
Gold Standard project activities**

BASIC INFORMATION	
Title and GS reference number of the project activity	TASC Clean Cooking PoA – VPA01 (Zambia) (GS11145) TASC Clean Cooking PoA – VPA03 (Zambia) (GS11596)
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the verification and certification report	2.3
Completion date of the verification and certification report	05/08/2024
Monitoring period number and duration of this monitoring period	VPA01 4 th Monitoring period 03/06/2023 – 31/12/2023 (Inclusive) VPA03 3 rd Monitoring period 03/06/2023 – 31/12/2023 (Inclusive)
Version number of the monitoring report to which this report applies	1.7 dated 22/07/2024
Crediting period of the project activity corresponding to this monitoring period	VPA01- 24/07/2020 to 23/07/2025 VPA03- 21/09/2021 to 20/09/2026
Project representative(s)	The African Stove Company Ltd. (TASC)
Host Party	Zambia
Applied methodologies and standardized baselines	Technologies and Practices to Displace Decentralized Energy Consumption (version 3.1)
Mandatory sectoral scopes	03
Conditional sectoral scopes, if applicable	-
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	VPA01- 255,222 tCO ₂ e VPA03- 514,662 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	VPA01- 244,980 tCO ₂ e VPA03- 549,123 tCO ₂ e
SDG Impacts:	1.SDG 1: No poverty 2.SDG 3: Good health and wellbeing 3.SDG 5: Gender Equality

	4.SDG 7: Affordable and Clean Energy 5.SDG 8: Decent work and Economic Growth 6.SDG 12: Responsible Consumption & Production 7.SDG 13: Climate Action
Name and UNFCCC reference number of the VVB	E-0052: Carbon Check (India) Private Ltd.
Name, position and signature of the approver of the verification and certification report	 Sanjay Kumar Agarwalla, Technical Director

SECTION A. Executive summary

Carbon Check (India) Private Ltd. (CCIPL) is performing the periodic verification of the VPAs {TASC Clean Cooking PoA – VPA 1 (Zambia) and (TASC Clean Cooking PoA – VPA 3 (Zambia))} under GS4GG of their registered PoA titled “TASC Clean Cooking PoA” in “Zambia”. Project reference number: -PoA ID- GS11009, VPAs ID- GS11145, GS11596, for the period 03/06/2023 – 31/12/2023 (inclusive). The VPAs will stimulate the installation of Kuniokoa Model wood fuel cookstoves manufactured by Burn Manufacturing LLC, with a thermal efficiency of 41.6%. For VPA01 stoves were distributed from the date 24/07/2020, and for VPA03 the stoves were distributed from the date 21/09/2021.

According to the PDD /B04/ & MR /01/, the project activity "TASC Clean Cooking PoA - VPA01 (Zambia)" and "TASC Clean Cooking PoA - VPA03 (Zambia)" is part of the African Stove Company & are the VPAs that are implemented in Zambia. The overall objective of both the VPAs is to contribute to the achievement of the Sustainable Development Goals (SDGs) through the distribution of Improved Cookstoves (ICS) in households of Zambia.

This report summarises the findings of the verification of the project, performed on the basis of Gold standard for global goals (GS4GG), as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of CERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Validation & Verification body (VVB), of the monitored reductions in GHG emissions that have occurred as a result of the project activity during a defined monitoring period.

Certification is the written assurance by a Validation & Verification body (VVB) that, during a specific period, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the “TASC Clean Cooking PoA - VPA01 (Zambia)” and “TASC Clean Cooking PoA - VPA03 (Zambia)” in the host country “Zambia” for the period 03/06/2023 – 31/12/2023 (Inclusive).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant GS and Host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered PoA-DD/VPA-DDs /B04/ and the approved monitoring methodology /B02/.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered PoA-DD/VPA-DDs /B04/
- To verify the implemented monitoring plan with the registered PoA-DD/VPA-DDs /B04/ and applied baseline and monitoring methodology.

- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

Verification process:

The verification comprises a review of the monitoring report /01/ over the monitoring period from 03/06/2023 – 31/12/2023 (Inclusive) and based on the registered PoA-DD/VPA-DDs /B04/ as part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology, and all related evidence provided by the project representative.

On-site interviews and inspections are also performed as part of the verification process.

Conclusion:

The verification team assigned by the Validation & Verification body (VVB) concludes that the monitoring report /01/, meets all the relevant requirements of the Gold Standard as per the requirements of GS4GG. The verification has been conducted in-line with the GS4GG requirements.

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and the registered PoA-DD/VPA-DDs /B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. The following table provides the resulted emission reduction from the project as verified through the document review and on-site interviews by the verification team.

Vintage (VPA01)	ER (tCO₂e)
Total for the monitoring period (03/06/2023 – 31/12/2023 (Inclusive))	244,980 tCO₂e

Vintage (VPA03)	ER (tCO₂e)
Total for the monitoring period (03/06/2023 – 31/12/2023 (Inclusive))	549,123 tCO₂e

CCIPL as a Validation & Verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the Certification statement.

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	Interviews	Verification findings
1.	Team Leader / Verifier / Technical Expert	IR	Rajput	Jaya	CC IPL	X	X	X	X
2.	Team Member	IR	Choudhary	Aparna	CC IPL	X			X
3.	Trainee assessor	IR	Bijani	Vishal	CC IPL	X	X	X	X
3.	Local Expert	ER	Msoni	Joyce	CC IPL		X	X	
4.	Local Expert ¹	ER	Sinyunga	Butano	CC IPL		X	X	

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Seshan	Ranganathan	CC IPL
2.	Approval	IR	Agarwalla	Sanjay Kumar	CC IPL

SECTION C. Means of verification

C.1. Desk/document review

The verification was performed primarily based on the review of the Monitoring report /01/ and the supporting documentation. This process included review of the data and the information presented to verify their completeness and review of the monitoring plan and the monitoring methodology. Documents reviewed or referenced during the verification are listed in the Appendix 3 below.

C.2. On-site inspection

Onsite physical audit has been performed. The Team leader has conducted the on-site inspection

¹ The on-site visit was conducted in 2 different regions of Zambia; hence, 2 Local Experts are part of the project.

and in particular the simple random sampling.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
/01/	Kambungo	Reuben	TASC	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/02/	Stead	Bianca	TASC	11/03/2024 to 14/03/2024	MR preparation, GS requirements, Emission reduction calculations, methodology applicability, start date justification, Project Design, ownership details, carbon credit ownership arrangements, monitoring and reporting arrangements, QA/QC procedures, baseline assessment, Project technology etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/03/	Sharabansa	Jeff	TASC	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/04/	Banda	Mathews	TASC	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/05/		Peter	TASC	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/06/	Sinyunga	Butano	CC IPL LE	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani,

						Joyce Msoni, Butano Sinyunga
/07/	Msoni	Joyce	CCIPLE	11/03/2024 to 14/03/2024	Details of survey, methodology, Survey results, QA/QC procedure etc.	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/08/	Nkhoma	Elizabeth	KPT Survey Participant (228087567)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/09/	Chirwa	Mushupike	KPT Survey Participant (L6YPS5)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/10/	Nabanyama	Richard	KPT Survey Participant (216524800)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/11/	Matenta	Loreen	KPT Survey Participant (216473009)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/12/	Mbunzi	Mary	KPT Survey Participant (214577230)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/13/	Banda	Tisuake	KPT Survey Participant (J6YUVB)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce

						Msoni, Butano Sinyunga
/14/	Banda	Regina	KPT Survey Participant (22772478 5)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/15/	Phiri	Zeniya	KPT Survey Participant (H6YB6E)	11/03/2024 to 14/03/2024	KPT Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/16/	Miti	Christine	Habit Survey Participant (K6YU6W)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/17/	Sakala	Namo	Habit Survey Participant (22321816 0)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/18/	Chibata	Beatrice	Habit Survey Participant (21507710 3)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/19/	Phiri	Amon	Habit Survey Participant (H6YKE8)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/20/	Mwalwish a	Scholar	Habit Survey Participant (21281382 8)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni,

						Butano Sinyunga
/21/	Mweemba	Juatina	Habit Survey Participant (217886554)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/22/	Mashayahama	Cecilia	Habit Survey Participant (212850966)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga
/23/	Muzyamba	Leewendi	Habit Survey Participant (212949683)	11/03/2024 to 14/03/2024	Habit Survey	Jaya Rajput, Vishal Bijani, Joyce Msoni, Butano Sinyunga

C.4. Sampling approach

As the target population is homogeneous, PP has proposed simple random sampling plan using 90/10 as confidence/precision. This is in line with the applied methodology /B02/. The sample size for each parameter is determined following guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 9.0 /B05/ in accordance with the paragraph 27 of the sampling standard.

In line with paragraph 27 of the Sampling Standard, the verification team has applied simple random sampling approach through on-site interviews on the monitoring survey as part of verification. The project participant had applied sampling approach to the monitoring survey /05/, conducted by the representatives of project participant. The verification team has chosen acceptance sampling in accordance with paragraph 27 of the sampling standard /B05/.

Applying paragraph 39 (c) of the sampling standard, version 09 /B05/, a sample size of 08² was Chosen for user habit survey /05/, based on an AQL of 0.5% and UQL of 20%; producer risk of 10% and consumer risk of 10% each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0. A sample size of 8³ was chosen for KPT survey /04/ based on

² As Zambia is an LDC, 08 samples are selected in accordance with para 39 (c) of Standard: Sampling and surveys for CDM project activities and programmes of activities Version 09.0

³ As Zambia is an LDC, 08 samples are selected in accordance with para 39 (c) of Standard: Sampling and surveys for CDM project activities and programmes of activities Version 09.0

an AQL of 0.5% and UQL of 20%; producer risk of 10% and consumer risk of 20% each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0.

The Information provided in the monitoring survey /05/, has been cross checked during the Onsite visit. As a part of the simple random sampling, the Verification team could confirm the monitoring survey data /05/ with no discrepant records. Thus, PP's set of records has been accepted in line with the § 33 of the sampling standard, version 09 /B05/.

Parameter	Verification approach	Population (for VVB's sample)	VVB's Sample Size
Usage & monitoring surveys/05/	Sampling Survey	232	08
KPT Surveys/10/	Sampling Survey	52	08

The details of the sample interviewed are listed in section C.3 (under the list of interviewed persons). No discrepancy regarding the SDGs and other parameters monitored was found in any of the 08 samples for user habit survey and 08 samples for the KPT survey and thus c=0, i.e., no discrepant records were observed. A difference in the serial number of the stoves was observed and was raised as CAR 11 and an explanation is provided by the PP. Further, the issue is raised as FAR 1 in this verification (refer Appendix 4: Clarification requests, corrective action requests and forward action requests).

Thus, PP's set of records has been accepted in line with §33 of the sampling standard (version 09.0) /B05/. For the impact parameters, questionnaire was prepared and was used during the survey by the PP. During the on-site interviews, the verification team cross-checked these sample documents, and no discrepancies were found in the impact parameters as well. Furthermore, the training & competency of the personnel /12/, who conducted such tests was checked. They were also interviewed to ensure that the process, method used, and their competency to confirm such standardised test was appropriately applied. The sampling technique to draw such samples was found adequate and the sample collectors were found competent to perform such task.

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

The VVB has raised 02 clarifications (CLs) and 14 corrective action requests (CARs) and satisfactorily closed. 01 FAR is raised.

SECTION D. Verification findings

D.1. Remaining forward action requests from validation and/or previous verifications

No FARs were raised by the VVB and in the Performance Review Rounds for the previous monitoring period (24/07/2022 to 02/06/2023 (both dates inclusive))

D.2. Compliance of the project implementation and operation with the registered project design document

Means of verification	Document Review, Interview
Findings	--

Conclusion	Verification team confirms that the latest available version of the monitoring report template has been used and the MR is in compliance with the monitoring report form and related monitoring report template guide. As verified from on-site interview and third-party survey report, the audit team confirm the project implementation and operation complies with the project design document /B03/. The starting date of stove distribution is 24/07/2020 for VPA01 and 21/09/2021 for VPA03 which is confirmed from the registered PoA-DD/VPA-DDs /B04/ and validation report /B04/. The project boundary in the registered PoA-DD/VPA-DDs /B04/ is in line with the actual project boundary. CC IPL confirms that the project cookstoves are operational through on-site visits and interviews with end users. Each cookstove has a unique identification number that was provided in the end user agreement /10/ and are correct according to the project database. Each cookstove is also physically marked with its unique identification number. Along with the serial number, the stove technology, end-user name, address, commissioning date etc. had also been noted which were found to be consistent on ground. It is noted that no changes have been observed or identified, that may impact the additionality. No addition of component nor extension of technology, no addition nor removal of project sites, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; no change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology Technologies and Practices to Displace Decentralized Energy Consumption (version 3.1) /B01/. The first ICS's distribution was commissioned from 24/07/2020 for VPA01 and 21/09/2021 for VPA03. A total of 44,517 (VPA01) and 99,785 (VPA03) cookstoves were distributed in the monitoring periods. No new distributions/03/ have been done during the reported monitoring period. Verification team based on the review of the MR /01/ and provided evidence /08/ /10/ confirms that the households/end users relinquish their right of carbon credits. Furthermore, the ICS implemented under the project are uniquely identified, thus avoiding any potential double counting. As verified through document review and on-site interviews, the project implementation and operation, all physical features of the project comply with the VPA-DDs /B04/. Verification team has checked the information in the monitoring report /01/ and compared it against the registered PoA-DD/ VPA-DDs /B04/ and found to be consistent. Verification team confirms that: a) The project activity is implemented as per the registered PoA-DD/VPA-DDs/B04/. b) The actual operation of the proposed project activity is in line with the registered/revised PoA-DD/VPA-DDs /B04/. c) It has reviewed the registered PoA-DD/VPA-DDs /B04/ including the monitoring plan, the applied monitoring methodology and found that the final MR/01/ for this monitoring period is in line with all the above-mentioned documents.
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	Verification team of CCIPL based on review of records and on-site interviews confirms that a robust and effective grievance addressal mechanism is in place and however, no grievances were reported during the monitoring period/11/. In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised PoA-DD/VPA-DDs /B04/.
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D.3. Post-registration changes

D.3.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents⁴

Not applicable

D.3.2. Corrections

There are two corrections made, for the value of $B_{b,y}$ which was raised as a FAR and addressed in the first verification by the PP and the value of the parameter $B_{b,y}$ has been set as 6.44, which is deemed appropriate by the verification team.

The other correction is regarding the value of the parameters EF_{b,i,CO_2} , $EF_{b,i,nonCO_2}$, EF_{p,i,CO_2} , $EF_{p,i,nonCO_2}$, the values are not entirely as per the VPA-DD /B04/, the reason provided in the MR is as follows “as on registration the NCV value of 0.0156 was used in the calculation instead of the default value of 0.015 as per the methodology. Furthermore, the most recent global warming potential values for CH_4 and N_2O was used in calculating the non- CO_2 emissions factor, which also resulted in a change of the values.” These changes in the said parameters are accepted in the previous performance reviews, hence deemed appropriate by the verification team.

D.3.3. Changes to the start date of the crediting period

Not applicable

D.3.4. Inclusion of a monitoring plan

Not applicable

D.3.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable

D.3.6. Changes to the project design

Not applicable

D.3.7. Changes specific to afforestation and reforestation project activities

Not applicable

D.4. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	Document Review, Interview
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⁴ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

Findings	-
Conclusion	The verification team is able to confirm that the monitoring plan contained in the included VPA-DDs /B04/ is in accordance with the approved methodology applied by the project activity, i.e. Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 3.1 /B02/. The monitoring plan is in accordance with the approved methodology, Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 3.1 /B02/, applied by the VPA and as provided in the included VPA-DDs /B04/. The verification took cognizance of § 341 to § 343 of CDM VVS for PoAs, version 03.0 /B01-1/.

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

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

Means of verification	Document Review, Interview				
Findings	---				
Conclusion	The following parameters have been fixed ex-ante for the VPA considered under this monitoring period:				
	Parameter	Description of the parameter	Value	Source	Assessment by VT
	B _{b,y}	Quantity of fuel consumed in baseline scenario b during year y, in tonnes	6.44 tonnes (VPA 1 and VPA3)	Baseline kitchen performance tests (KPTs)	The value is not as per VPA-DDs/B04/. A correction is provided in section B.2.2 of the MR/01/ and an assessment is provided in section D.3.2 of this verification report. Hence, the value for the parameter B _{b,y} is deemed appropriate by the verification team.
	EF _{b,i,CO2}	CO ₂ emission factor arising from use of fuel type i in baseline scenario	1.6800 tCO ₂ /t _{fuel} (VPA 1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.5— Default emission factors for stationary combustion in the residential	The value is not as per VPA-DDs/B04/. A correction is provided in section B.2.2 of the MR/01/ and an assessment is provided in section D.3.2 of this verification report. Hence, the value for the parameter EF _{b,i,CO2} is deemed appropriate by the verification team.

				and agriculture/forestry/fishing/fishing farms categories	
	EF_{b,i,nonCO2}	Non-CO ₂ emission factor arising from use of fuel type i in baseline scenario	0.5588 tCO ₂ /t _{fuel} (VPA1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.9	The value is not as per VPA-DDs/B04/. A correction is provided in section B.2.2 of the MR/01/ and an assessment is provided in section D.3.2 of this verification report. Hence, the value for the parameter EF _{b,i,nonCO2} is deemed appropriate by the verification team.
	EF_{p,i,CO2}	CO ₂ emission factor arising from use of fuel type i in baseline scenario	1.6800 tCO ₂ /t _{fuel} (VPA1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.5– Default emission factors for stationary combustion in the residential and agriculture/forestry/fishing/fishing farms categories	The value is not as per VPA-DDs/B04/. A correction is provided in section B.2.2 of the MR/01/ and an assessment is provided in section D.3.2 of this verification report. Hence, the value for the parameter EF _{p,i,CO2} is deemed appropriate by the verification team.
	EF_{p,i,nonCO2}	Non-CO ₂ emission factor arising from use of fuel type i in baseline scenario	0.5588 tCO ₂ /t _{fuel} (VPA1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.9	The value is not as per VPA-DDs/B04/. A correction is provided in section B.2.2 of the MR/01/ and an assessment is provided in section D.3.2 of this verification report. Hence, the value for the parameter EF _{p,i,nonCO2} is deemed appropriate by the verification team.

	NCV_{b,i}	Net calorific value of the fuel type i used in the baseline	Fuelwood: 0.015 TJ/tonnes (VPA 1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 1: Introduction, Table 1.2 – Default net calorific values	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.
	NCV_{p,i}	Net calorific value of the fuel type i used in the project scenario	Fuelwood: 0.015 TJ/tonnes (VPA 1 & VPA3)	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 1: Introduction, Table 1.2 – Default net calorific values	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.
	f_{NRB,b,i,y}	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass	Fuelwood: 0.91 Renewable solid biomass fuels (Crop residues / cow dung): 0.0000 Fossil fuels: 1 (VPA 1 & VPA3)	From C4 EcoSolutions study; dated 11/03/2022	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.
Verification team confirms that the Data and parameters fixed ex-ante are in accordance with the registered PoA-DD and registered/included VPA-DD /B04/ and the monitoring plan. The verification took cognizance of §344, §345I) and §357 of CDM VVS for PoAs, version 03.0 /B01-1/.					

D.5.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	--
Conclusion	The verification team confirms that the data and parameters monitored are

	in compliance with the registered PoA-DD/ VPA-DDs /B04/ and the monitoring plan. It is confirmed that the verification team assessed the data / information flow from the point of monitoring to emission reduction calculation and found no gap in the same. Please refer to the Annex 4 for assessment of each parameter.
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D.5.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	--
Conclusion	According to the standard for sampling and survey /B05/ and related guidelines /B05/ the sampling plan was determined at the time of project registration and applied during the monitoring. Sampling method: Simple random sampling method is adopted as the target population is homogeneous. The sampling frame is homogenous within itself, with respect to service level, established ex-ante baseline and user characteristics. The sample size is determined by the requirement to achieve 90/10 precision, in line with the methodology for annual survey for Habit Surveys and Biennial surveys for KPTs. The sample size calculated for habit surveys is 232 based on a confidence interval/ precision level of 90/10. The precision level achieved for the sample size is 0%. The sample size was done according to the TPDDTEC Version 3.1/B02/, here it states that for a group size > 1000 a minimum sample size of 100 is needed for such a survey. The habit survey was carried out for 232 households to account for the non-responses and is acceptable to the verification team. The sample size calculated for KPT surveys based on a confidence interval/ precision level of 90/10 is 45. Oversampling is conducted and total 52 KPTs were conducted. The KPT calculations are done appropriately. The calculation of exclusion of outliers are provided in the "pKPT" tab of the ER sheet /02/ which is found to be consistent with the baseline KPT ("bKPT" tab of the ER sheet /02/). This led to a precision of 8.76% being achieved which falls within the 90/10 precision. The Usage Rate used by the PP for the VPA is 90% based on the Good Practice. Checklist for evaluating the compliance of project with requirement and guidelines -Usage rate requirement has been provided in annex 3 of this document.

D.6. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Document Review, Interview						
Findings	-						
Conclusion	Following measurements instruments were used: <table border="1"> <thead> <tr> <th>Instrument</th><th>Purchase Date</th></tr> </thead> <tbody> <tr> <td>Ryobi MM-210 2 in 1 moisture testers</td><td>13/04/2023</td></tr> <tr> <td>200kg Portable Mini</td><td>13/04/2023</td></tr> </tbody> </table>	Instrument	Purchase Date	Ryobi MM-210 2 in 1 moisture testers	13/04/2023	200kg Portable Mini	13/04/2023
Instrument	Purchase Date						
Ryobi MM-210 2 in 1 moisture testers	13/04/2023						
200kg Portable Mini	13/04/2023						

	Crane Scale SJ-19	The manufacturer specification provided for the products /15/ and the invoices /14/ are reviewed and it confirms that the devices used in the KPT surveys are newly purchased.
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D.7. Assessment of data and calculation of emission reductions or net removals

D.7.1. Calculation of baseline value of each SDG Impacts

Means of verification	Document Review, Interview
Findings	--
Conclusion	SDG 1: No Poverty $BSA_{Baseline}$: Number of ICS distributed in baseline = 0 $HHS_{Baseline}$: % HH reporting money saving due to reduced fuel consumption in baseline = 0 SDG 3: Good Health and Well Being $SPMHH_{Baseline}$: % HH reporting reduction in smoke/PM emissions while cooking on improved stove in baseline = 0 SDG 5: Gender Equality $HHTS_{Baseline}$: % HH reporting time saving from fuel collection due to reduced fuel consumption in baseline = 0 SDG 7: Affordable and Clean Energy $ACS_{Baseline}$: Access to affordable and clean energy (Number of operating ICS units under Baseline) = 0 SDG 8: Decent Work and Economic Growth $QE\ IG_{Baseline}$: Quantitative Employment and income generation (Number of person (male and female) hired under Baseline) = 0 SDG 12: Responsible Consumption and Production $B_{b,y,i}$: Fuel consumption for fuel type i used in baseline b in year y in tonnes, from baseline KPTs = 6.44t SDG 13: Climate Action $BE_{b,y}$: Baseline emissions for baseline scenario b in year y (tCO₂e/yr) = 305,444 (VPA 1) = 684,655 (VPA 3) $BE_{b,y} = \sum_{b,p} N_{p,y} * U_{p,y} * (ER_{b,p,y,CO2} + ER_{b,p,y,nonCO2}) - \sum LE_{p,y}$ Where: $\sum_{b,p}$: Sum over all relevant (baseline b) couples = 44,517 ICS (VPA 1) = 99,785 ICS (VPA 3) $N_{p,y}$: Cumulative number of project technology-days included in the sales/distribution database for project scenario p against baseline scenario b in year y = 44,517 * Total Technology days (VPA 1) = 9,437,604 days (VPA 1) = 99,785 * Total Technology days (VPA 3) = 21,154,420 days (VPA 3) $U_{p,y}$: Cumulative usage rate for technologies in baseline scenario p in year y,

	= 90% ER_{b,p,y,CO2}: Specific CO₂ emission savings for an individual technology of Baseline b in year y, in tCO₂/day as derived from the statistical analysis of the data collected from the field tests and adjusted for the 90% usage rate = 0.026985 tCO₂/day (Ex-Post, cell I9) ER_{b,p,y,nonCO2}: Specific non-CO₂ emission savings for an individual technology of Baseline b in year y, in tCO₂/day as derived from the statistical analysis of the data collected from the field tests and adjusted for the 90% usage rate = 0.008976 tCO₂/day (Ex-Post, cell I10) ER_{b,p,y,CO2}= $\sum_i \{ fNRB_{b,i,y} * B_{b,y,i} * NCV_{b,i} * EF_{b,i,CO2} \}$ Where: fNRB_{b,i,y}: Fraction of woody biomass used in year y for fuel type i that can be established as non-renewable biomass (NRB) = 0.91 B_{b,y,i}: Fuel consumption for fuel type i used in baseline b in year y in tonnes, from baseline KPTs = 6.44t NCV_{b,i}: Net calorific value of the fuel type i used in baseline b (TJ/tonnes) = 0.015 EF_{b,i,CO2}: CO₂ emission factor of the fuel type i used in the baseline = (112 tCO₂/TJ * 0.015 TJ/t) as per calculation in the ER sheet (Ex-Ante, cell E13) = 1.68 tCO₂/tonne of wood (Ex-Post, cell I7) i: Fuel Type ER_{b,p,y,nonCO2}= $\sum_i \{ B_{b,y,i} * NCV_{b,i} * EF_{b,i,nonCO2} \} - \sum_i \{ B_{p,y,i} * NCV_{p,i} * EF_{p,i,nonCO2} \}$ Where: EF_{b,i,nonCO2}: non-CO₂ emission factor of the fuel type i used in the baseline = (34.27 (CH₄) + 2.98 (N₂O) tCO₂/TJ) * 0.015 TJ/t, as per calculation in the ER sheet (Ex-Ante, cell E14) = 0.5588 tCO₂/tonne of wood (Ex-Post, cell I8) CCIPL confirms that the calculation of baseline emissions have been carried out in accordance with the formulae and methods described in the registered VPA-DDs/B04/ and the applied methodology /B02/.
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D.7.2. Calculation of project value of each SDG Impacts

Means of verification	Document Review, Interview		
Findings	--		
Conclusion	SDG 1: No Poverty		
	Net Benefit (SDG 1) = $BSA_{Project} - BSA_{Baseline}$		
	= 44,517 (VPA 1)		
	= 99,785 (VPA 3)		
	Where:		
	$BSA_{Baseline}$	Number of ICS distributed in baseline	= 0
	$BSA_{Project}$	Number of ICS distributed in Project	= 44,517 (VPA 1)
	$BSA_{Project}$	Number of ICS distributed in Project	= 99,785 (VPA 3)
	Net Benefit (SDG 1) = $HHS_{Project} - HHS_{Baseline}$		= 100%
	Where:		

$HHS_{Baseline}$: % HH reporting money saving due to reduced fuel consumption in baseline = 0
 $HHS_{Project}$: % HH reporting money saving due to reduced fuel consumption in project = 100%

SDG 3: Good Health and Well Being

Net Benefit (SDG 3) = $SPMHH_{Project} - SPMHH_{Baseline} = 100\%$

Where:

$SPMHH_{Baseline}$: % HH reporting reduction in smoke/PM emissions while cooking on improved stove in baseline = 0

$SPMHH_{Project}$: % HH reporting reduction in smoke/PM emissions while cooking on improved stove in project = 100%

SDG 5: Gender Equality

Net Benefit (SDG 5) = $HHTS_{Project} - HHTS_{Baseline} = 97\%$

Where:

$HHTS_{Baseline}$: % HH reporting time saving from fuel collection due to reduced fuel consumption in baseline = 0

$HHTS_{Project}$: % HH reporting time savings during fuel collection and cooking in project = 99.5% Fuel collection (VPA 1 & 3)
= 99.6% Cooking (VPA 1 & 3)

SDG 7: Affordable and Clean Energy

Net Benefit (SDG 7) = $ACS_{Project} - ACS_{Baseline}$
= 44,517 (VPA 1)
= 99,785 (VPA 3)

Where:

$ACS_{Baseline}$: Access to affordable and clean energy (Number of operating ICS units under Baseline) = 0

$ACS_{Project}$: Access to affordable and clean energy (Number of operating ICS units under Project) = 44,517 (VPA 1)
= 99,785 (VPA 3)

SDG 8: Decent Work and Economic Growth

Net Benefit (SDG 8) = $QE\ IG_{Project} - QE\ IG_{Baseline} = 16$ (VPA 1 & 3)

Where:

$QE\ IG_{Baseline}$: Quantitative Employment and income generation (Number of person (male and female) hired under Baseline) = 0

$QE\ IG_{Project}$: Quantitative Employment and income generation (Number of person (male and female) hired under Project) = 16 (Total across both VPAs) (11 Male and 5 Female)

SDG 12: Responsible Consumption and Production

$B_{y,savings} = B_{b,y,i} - B_{p,y,i}$

Where:

$B_{y,savings}$ Reduction in domestic fuel consumption (tonnes/year)
= 5.1673t

$B_{b,y,i}$ Fuel consumption for fuel type i used in baseline b in year y in tonnes, from baseline KPTs
= 6.44t

$B_{p,y,i}$ Fuel consumption for fuel type i used in project p in year y in tonnes, as derived from the statistical analysis of the data

collected from the field tests
= 1.2754t

SDG 13: Climate Action

$$ER_y = \sum BE_{b,y} - \sum PE_{p,y} - \sum LE_{p,y}$$

Where:

ER_y Emission reduction for total project activity in year y
(tCO₂e/yr)

= 244,980 (VPA 1)

= 549,123 (VPA 3)

$BE_{b,y}$ Baseline emissions for baseline scenario b in year y
(tCO₂e/yr)

= 305,444 (VPA 1)

= 684,655 (VPA 3)

$PE_{p,y}$ Project emissions for project scenario p in year y (tCO₂e/yr)

= 60,464 (VPA 1)

= 135,531 (VPA 3)

$LE_{p,y}$ Leakage for project scenario p in year y (tCO₂e/yr)
= 0

As per the methodology the governing equation for the emission reduction calculations is as follows with $(\sum BE_{b,y} - \sum PE_{p,y})$ is directly merged in to the following equation.

$$ER_y = \sum_{b,p} N_{p,y} * U_{p,y} * (ER_{b,p,y,CO_2} + ER_{b,p,y,nonCO_2}) - \sum LE_{p,y}$$

Where:

$\sum_{b,p}$ Sum over all relevant (baseline b/project p) couples

= 44,517 ICS (VPA 1)

= 99,785 ICS (VPA 3)

$N_{p,y}$ Cumulative number of project technology-days included in the sales/distribution database for project scenario p against baseline scenario b in year y

= 9,437,604 days (VPA 1)

= 21,154,420 days (VPA 3)

$U_{p,y}$ Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)

= 90%

ER_{b,p,y,CO_2} Specific CO₂ emission savings for an individual technology of Project against an individual technology of Baseline b in year y, in tCO₂/day as derived from the statistical analysis of the data collected from the field tests

= 0.0216 tCO₂e/day

$ER_{b,p,y,nonCO_2}$ Specific non-CO₂ emission savings for an individual technology of Project against an individual technology of Baseline b in year y, in tCO₂/day as derived from the statistical analysis of the data collected from the field tests

= 0.0072 tCO₂e/day

$LE_{p,y}$ Leakage for project scenario p in year y (See Section E.3)

= 0%

= 0 tCO₂e/yr

	$ER_{b,p,y,CO_2} = \sum_i \{ f_{NRB,b,i,y} * B_{b,y,i} * NCV_{b,i} * EF_{b,i,CO_2} \} - \sum_i \{ f_{NRB,b,i,y} * B_{p,y,i} * NCV_{p,i} * EF_{p,i,CO_2} \}$
	Where: $f_{NRB,b,i,y}$ Fraction of woody biomass used in year y for fuel type <i>i</i> that can be established as non-renewable biomass (NRB) = 0.91 $B_{b,y,i}$ Fuel consumption for fuel type <i>i</i> used in baseline b in year y in tonnes, from baseline KPTs = 6.44t $B_{p,y,i}$ Fuel consumption for fuel type <i>i</i> used in project p in year y in tonnes, as derived from the statistical analysis of the data collected from the field tests = 1.2754t $NCV_{b,i}$ Net calorific value of the fuel type <i>i</i> used in baseline b (TJ/tonnes) = 0.015 $NCV_{p,i}$ Net calorific value of the fuel type <i>i</i> used in project p (TJ/tonnes) = 0.015 EF_{b,i,CO_2} CO₂ emission factor of the fuel type <i>i</i> used in the baseline = 112 tCO₂/TJ = 1.6800 tCO₂/tonne of wood EF_{p,i,CO_2} CO₂ emission factor of the fuel type <i>i</i> used in the project = 112 tCO₂/TJ = 1.6800 tCO₂/tonne of wood <i>i</i> Fuel Type
	$ER_{b,p,y,nonCO_2} = \sum_i \{ B_{b,y,i} * NCV_{b,i} * EF_{b,i,nonCO_2} \} - \sum_i \{ B_{p,y,i} * NCV_{p,i} * EF_{p,i,nonCO_2} \}$
	Where: $EF_{b,i,nonCO_2}$ non-CO₂ emission factor of the fuel type <i>i</i> used in the baseline = 30.6 (CH₄), 3.35 (N₂O) tCO₂/TJ = 0.5588 tCO₂/tonne of wood $EF_{p,i,nonCO_2}$ non-CO₂ emission factor of the fuel type <i>i</i> used in the project = 30.6 (CH₄), 3.35 (N₂O) tCO₂/TJ = 0.5588 tCO₂/tonne of wood LEy Leakage for project scenario p in year y = 0%
	CCIPL confirms that the calculation of project emissions have been carried out in accordance with the formulae and methods described in the registered PDD and the applied methodology.

D.7.3. Calculation of leakage GHG emissions

Means of	Document Review, Interview
----------	----------------------------

verification	
Findings	--
Conclusion	A justification has been provided for each condition as per the methodology TPDDTEC, version 3.1/B02/. There are no leakages applicable for the reported monitoring period.

D.7.4. Summary calculation of SDG impacts

Means of verification	Document Review, Interview				
Findings	-				
Conclusion	SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
	13	Tonnes CO2 equivalent emissions	305,444 (VPA1) 684,655 (VPA3)	60,464 (VPA1) 135,531 (VPA3)	244,980 (VPA1) 549,123 (VPA3)
	1	Number of ICS distributed	0 (VPA1) 0 (VPA3)	44,517 (VPA1) 99,785 (VPA3)	44,517 (VPA1) 99,785 (VPA3)
	3	% HH reported reduction in smoke/PM Emissions while cooking on ICS	0 (VPA1) 0 (VPA3)	100% (VPA1) 100% (VPA3)	100% (VPA1) 100% (VPA3)
	5	% HH reporting time savings during: - fuel collection and; - cooking	0 (VPA1) 0 (VPA3)	99.5% (VPA1) 99.6% (VPA3)	99.5% (VPA1) 99.6% (VPA3)
	7	Access to affordable and clean energy (number of ICS distributed)	0 (VPA1) 0 (VPA3)	44,517 (VPA1) 99,785 (VPA3)	44,517 (VPA1) 99,785 (VPA3)
	8	Quantitative employment and income generation (Number of persons hired)	0 (VPA1) 0 (VPA3)	16 (VPA1) 16 (VPA3)	16 (VPA1) 16 (VPA3)
	12	Wood fuel savings while cooking on project ICS in tonnes per annum	6.44 (VPA1) 6.44 (VPA3)	1.2754 (VPA1) 1.2754 (VPA3)	5.1673 (VPA1) 5.1673 (VPA3)
	The data presented in the monitoring report /01/ and emission reduction worksheet /02/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidence were presented and verified by the CCIPL for the reported emission reductions as listed above.				

D.7.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Document Review, Interview
Findings	--

Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PoA-DD/ VPA-DDs /B04/ is 255,222 (VPA 1) and 514,662 (VPA 3) and the actual emission reductions achieved for the monitoring period is 244,980 (VPA 1) and 549,123 (VPA 3)		
	SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
	13	255,222 (tCO ₂ e) (VPA 1) 514,662 (tCO ₂ e) (VPA 3)	244,980 (tCO ₂ e) (VPA 1) 549,123 (tCO ₂ e) (VPA 3)
	1	45,000 (VPA 1) (Number of ICS distributed) 32,700 (VPA 3) (Number of ICS distributed)	44,517 (VPA 1) (Number of ICS distributed) 99,785 (VPA 3) (Number of ICS distributed)
	3	100% (VPA 1 and VPA 3)	100% (VPA 1 and VPA 3)
	5	100% (VPA 1 and VPA 3)	99.5% (fuel collection) 99.6% (cooking) (VPA 1 and VPA 3)
	7	45,000 (VPA 1) (Number of ICS distributed) 32,700 (VPA 3) (Number of ICS distributed)	44,517 (VPA 1) (Number of ICS distributed) 99,785 (VPA 3) (Number of ICS distributed)
	8	30 (Number of persons hired)	16 (Number of persons hired) 11 male 5 female /16/
	12	4.89 (tonnes/year) (VPA 1) 4.89 (tonnes/year) (VPA 3)	5.1673 (tonnes/year) (VPA 1) 5.1673 (tonnes/year) (VPA 3)
The emission reduction calculations provided in the spreadsheet /02/ have been verified to be correct and in line with the registered PDD /B04/.			

D.7.6. Remarks on difference from estimated value in registered PDD

Means of verification	Document Review, Interview
Findings	--
Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 255,222 (tCO₂e) (VPA 1) and 514,662 (tCO₂e) (VPA 3) and the actual emission reductions achieved for the monitoring period is 244,980 (tCO₂e) (VPA 1) and 549,123 (tCO₂e) (VPA 3). For SDG 13, since actual emission reduction is lower than the estimated value for VPA 1 it is acceptable to the verification team, for VPA 3 the actual emission reduction is more than the estimated emission reduction because the number of ICS distributed in VPA 3 is more than estimated distribution confirmed with the distribution database/03/ The monitoring report /01/ provides reason for decrease in the actual emission reduction and the same was confirmed by the verification team by interviewing the representatives of PP and by reviewing the actual implementation status of the project. For other SDG parameters, PP has provided justification in the Monitoring report and assessment of the same is provided below:

- SDG 1: The actual value is less than the estimated value for VPA1, the actual value is found to be more than estimated for VPA3 due to increased number of stoves distributed that expected, which is deemed appropriate and thus acceptable to the VVB.
- SDG 3: The actual value is same as the estimated value, which is deemed appropriate and thus acceptable to the VVB.
- SDG 5: The actual value is less than the estimated value, which is deemed appropriate and thus acceptable to the VVB.
- SDG 7: The actual value is less than the estimated value for VPA1, the actual value is found to be more than estimated for VPA3 due to increased number of stoves distributed that expected, which is deemed appropriate and thus acceptable to the VVB.
- SDG 8: The actual value is less than the estimated value, which is deemed appropriate and thus acceptable to the VVB/45/.
- SDG 12: The actual value is more than the estimated value, which is deemed appropriate and thus acceptable to the VVB.
- SDG 13: The actual value is less than the estimated value for VPA1, the actual value is found to be more than estimated for VPA3, which is deemed appropriate and thus acceptable to the VVB.

SECTION E. Internal quality control

>>

The verification report has passed a technical review before being submitted to the Gold Standard. The technical review is performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for validation and verification.

SECTION F. Verification/Certification opinion

>>

Carbon Check (India) Private Ltd. (CCIPL) has performed the 4th periodic verification of the registered GS Project Activity "TASC Clean Cooking PoA- VPA01 (Zambia)" and 3rd periodic verification of "TASC Clean Cooking PoA - VPA03 (Zambia)".

The verification team assigned by the VVB concludes that the project activity as described in the PDD /B03/ and the Monitoring report /01/, meets all the relevant requirements of the Gold Standard. The verification has been conducted in-line with the GS4GG requirements project activities.

Verification methodology and process

The Verification team confirms the contractual relationship signed between the VVB, Carbon Check (India) Private Ltd. and the Project Participant /18/. The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC/GS requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the GS4GG and constitutes the review and completion of the following steps:

- Reviewing the PoA-DD/ VPA-DDs /B04/, including the monitoring plan and the corresponding validation report /B04/;
- Desk review of the MR /01/ and other relevant documents including documents related to the project activities in emission reductions;
- Review of the applied monitoring methodology Technologies and Practices to Displace Decentralized Energy Consumption (version 3.1) /B02/;
- On-site inspection (11/03/2024 to 14/03/2024)

- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered PoA-DD/ VPA-DDs. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review and remote interviews, the verification team confirms that the project activity has resulted in the 244,980 tCO₂e and 549,123 tCO₂e emission reductions during the reported monitoring period for VPA 1 and VPA 3 respectively.

Year	GSVERs(VPA1)	GSVERs(VPA3)
2023 (03/06/2023 – 31/12/2023)	244,980 (tCO ₂ e)	549,123 (tCO ₂ e)

This statement covers verification period from 03/06/2023 – 31/12/2023 (Inclusive).

The VVB has raised 02 clarifications and 14 corrective action requests, all of which are satisfactorily closed. 01 FAR is raised.

The VVB considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered PDD are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 244,980 tCO₂e for VPA01 and 549,123 tCO₂e for VPA03 equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
MWh	Mega Watt Hour
OSV	On Site Visit
PE	Project Emissions
PP(s)	Project Participant(s)
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VVB	Validation & Verification body

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Jaya Rajput

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

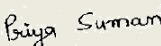
☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☐ SDG+	☐ Social no-harm(S+)	☐ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

☐ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☐ TA 13.1	☐ TA 13.2
☐ TA 14.1	☐ TA 15.1	☐ TA 16.1		

Issue Date

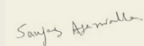
5th December 2023



Ms. Priya Suman
Compliance Officer

Expiry Date

31st December 2024



Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022	Initial Adoption
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Aparna Choudhary

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC 14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|---|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☐ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | |
| ☒ Local Expert for India | | | |

in the following Technical Areas:

- | | | | | |
|--|--|----------------------------------|---|---|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☒ TA 13.1 | ☒ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022 ¹	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Butano Sinyunga

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|---|---|--|---|
| ☐ Validator | ☐ Verifier | ☐ Team Leader | ☐ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☐ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☐ SDG+ | ☐ Social no-harm(S+) | ☐ Environment no-harm(E+) | |
| ☒ Local Expert for Zambia | | | |

in the following Technical Areas:

- | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| ☐ TA 1.1 | ☐ TA 1.2 | ☐ TA 2.1 | ☐ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☐ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

Issue Date

1st December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
May 2023	Initial Adoption
Dec 2023	Template changes to include additional functions and TA

CC IPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Joyce Msoni

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|---|---|--|---|
| ☐ Validator | ☐ Verifier | ☐ Team Leader | ☐ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☐ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☐ SDG+ | ☐ Social no-harm(S+) | ☐ Environment no-harm(E+) | |
| ☒ Local Expert for Zambia | | | |

in the following Technical Areas:

- | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| ☐ TA 1.1 | ☐ TA 1.2 | ☐ TA 2.1 | ☐ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☐ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

Issue Date

1st December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

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CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Mr. S Ranganathan

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|---|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☒ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ CCB Expert | ☐ Legal Expert | ☐ Financial Expert | ☐ Environmental, Health and Safety financial matters |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | |
| ☒ Local Expert for India | | | |

in the following Technical Areas:

- | | | | | |
|--|--|----------------------------------|---|---|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☒ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☒ TA 13.1 | ☒ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | ☐ TA 16.1 | | |

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

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Appendix 3. Documents reviewed or referenced

S. No.	Document
/01/	Monitoring Report a. Version 1.1 dated 25/01/2024 b. Version 1.1, dated 25/01/2024 c. Version 1.2, dated 09/04/2024 d. Version 1.3, dated 17/04/2024 e. Version 1.4, dated 19/04/2024 f. Version 1.5, dated 30/05/2024 g. Version 1.6, dated 30/05/2024 h. Version 1.7, dated 22/07/2024
/02/	Emission reductions sheet Corresponding to /01-e/ (TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3)
/03/	VPA distribution records a. GS11145 (VPA1) b. GS11596 (VPA3)
/04/	KPT Survey records (VPA 1 & 3 combined) (14/11/2023 - 17/11/2023)
/05/	Monitoring Habit survey records (VPA1 & 3 combined) (20/11/2023 - 17/12/2023)
/06/	Habitat and KPT survey sample selection
/07/	Lab report from the Kenya Industrial Research and Development (KIRDI) for the thermal efficiency testing of cookstoves dated 19/11/2017
/08/	Proof of Carbon Wavier certification dated 12/05/2022
/09/	Awareness program evidences
/10/	End user agreement
/11/	Grievance evidences
/12/	Field training evidences (12/09/2023)
/13/	Verification call evidences
/14/	Measuring instrument Purchase orders a. Moisture meter purchase order b. Scale purchase order
/15/	Measuring instrument technical specification a. Moisture meter technical specification b. Scale technical specification
/16/	Employment records
/17/	Survey CTO forms for Habit survey and KPT surveys
/18/	Countersigned contract dated: 16/01/2024

Background Documents

Ref no.	Reference Document
/B01/	1. Validation and Verification Standard for PoAs, version 03.0 2. Project Standard for PoAs, version 03.0 3. Project Cycle Procedure for PoAs, version 03.0
/B02/	Technologies and Practices to Displace Decentralized Energy Consumption (version 3.1)
/B03/	1. Gold standard Validation and verification standard version 1.0, dated 06/03/2023 2. Gold Standard Principles and Requirements version 1.2, dated 24/10/2019 3. Gold Standard Programme of Activity Requirements version 1.2, dated 24/10/2019 4. GS Validation & Verification Body Requirements version 2.0, dated 14/01/2021 5. Community Services Activity Requirements (version 1.1) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/
/B04/	i. Registered VPA 1- Version 5 dated 14/03/2022 ii. Registered VPA 3 – Version 1.6 dated 16/09/2022 iii. Registered PoA-DD, Version 05, dated 03/02/2022
/B05/	Sampling and Survey a) CDM Sampling Standard, version 09.0 b) Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.
/B06/	GS Site Visit and Remote Audit Requirements and Procedures, version 2.0 dated 30/05/2023
/B07/	GS REQUIREMENTS AND GUIDELINES: USAGE RATE MONITORING Version 2.0, dated 27/10/2020

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

Table 1. FARs from this verification

FAR ID	01	Section no.	Date: 12/04/2024
Description of FAR			
As per the CAR 11 raised based on the on-site visit for the VPA 1 (MP4): 03/06/2023 – 31/12/2023 (Inclusive) and VPA 3 (MP3): 03/06/2023 – 31/12/2023 (Inclusive) the beneficiary Mushupike Chirwa had the stove with stove id “L6YPS5” and in the PP’s survey records and distribution records, the stove id for Mushupike Chirwa is “H6YUN5”. PP’s justification: As shown in the distribution database and End User Agreements (which will be provided to the VVB) Mushupike Chirwa received the stove with serial number H6YUN5 on 14 November 2022 in Tsachilile village, Zambia. The serial number recorded by monitors when conducting the KPTs from 14 – 17 November 2023 was H6YUN5 for Mushupike Chirwa, as shown in the KPT spreadsheet “Zambia_pKPT_VPA 1 & 3_Nov 2023_v1.1”. The stove with serial number L6YPS5 is registered to Mary Banda according to the distribution records and monitoring database, and she also received the stove on 14 November 2022 in Tsachilile village, Zambia as shown in the End User Agreement provided. It is possible that, after the KPTs were conducted, the beneficiaries accidentally swapped stoves whilst at a community gathering where villagers come together to cook. This is a common occurrence in rural areas and both beneficiaries are from the same small village. However, a TASC monitor will be sent to the village to find both Mushupike Chirwa and Mary Banda and make sure that they have the correct stoves that were assigned to them during distribution. If not, they will sign new End User Agreements with the serial number of the stove that they currently have. This does not change the number of days that the stoves were operational as they were both distributed on the same day, 14 November 2022 For the next periodic verification VVB is requested to confirm whether the beneficiaries Mushupike Chirwa & Mary Banda are having the stoves assigned to them or an updated End user agreement with serial number of the stove they have, based on the CAR 11.			
PP response			Date: 17/04/2024
This FAR has been added to section B.1.1. of the MR and confirmation that Mushupike Chirwa and Mary Banda have the correct stoves assigned to them will be provided during the next periodic verification.			
Documentation provided by the PP			
TASC_Zam_VPA_1and3_MR_v1.3			
DOE assessment			Date:

Table 2. CARs from this verification

CAR ID	01	Section no.	Programme of Activity Information	Date: 01/03/2024
Description of CAR				
In the “Programme of Activity Information”, PP is requested to mention all the VPAs that are under the PoA.				
PP response				Date: 05/02/2024
All of the fully validated VPAs under the POA have been listed in the POA Information Table.				
Documentation provided by PP				

TASC Zam VPA 1and3 MR v1.1	
VVB assessment	Date: 26/03/2024
All validated VPAs are mentioned in the “Programme of Activity Information”.	
Hence, CAR01 is closed.	

CAR ID	02	Section no.	B.1	Date: 01/03/2024
Description of CAR				
In the Para 27 section 4.8.2 of “General guidelines for SSC CDM methodologies” v23.1 it is mentioned “PA/CPAs may apply the result of the surveys for monitoring period up to 12 months after the date of the survey if: (a) The average lifetime of the units is known and is four years or more. It shall also be confirmed by e.g. previous experience with similar technologies or manufacturer or the elements of the project design, in order to assure that the local conditions are unlikely to result in premature failure of the technology; (b) At least 50 per cent of the distributed units were functional in the previous survey undertaken by PAs/CPAs (this condition is applicable only after the first monitoring survey is concluded).” The end dates of KPTs and Habit surveys (for both VPAs) are respectively “17/11/2023 and 17/12/2023” and the end date of the MP is 31/12/2023. PP is requested to clarify how the surveys and KPTs conducted prior to the end date of the monitoring period are applicable to the entire MP.				
PP response				Date: 05/02/2024
a) According to a letter received from BURN Manufacturing, the manufacturer of the Kuniokoa model wood fuel cookstoves distributed in this project, the stove is expected to have an average lifespan of 10 years if used according to the guidelines provided. The letter, “BURN Letter”, will be provided to the VVB. b) According to the habit surveys conducted during this monitoring period (MP 2), 99% of households were using their ICS (cell G8, Upy tab, “TASC Clean Cooking PoA Joint 2 ER calc sheet v1.1”). In the previous monitoring period (MP 1), 100% of habit survey respondents indicated that they were using their ICS (cell E4, Upy tab, “TASC Clean Cooking PoA Joint MP1 ER calc sheet v1.3”). Therefore, the conditions are met to apply the result of the surveys for monitoring periods up to 12 months after the date of the survey.				
Documentation provided by PP				
Burn Letter TASC Clean Cooking PoA Joint 2 ER calc sheet v1.1 TASC Clean Cooking PoA Joint ER calc sheet v1.3				
VVB assessment				Date: 26/03/2024
as per the supporting document provided and the lifetime of the stove is 10 years and the usage rate recorded in the habit survey of the previous MP was 99%. The KPT dates are valid. Hence, CAR02 is closed.				

CAR ID	03	Section no.	B.1	Date: 01/03/2024
Description of CAR				
In the section B.1 it is mentioned “Distribution started on the 24th of July 2020 (VPA 1) and 21st of September 2021 (VPA 3)”. As per the Template Guide for the MR template v1.1 in the “GUIDE TO COMPLETING THE MONITORING REPORT” section point 18 “All Dates must be in the following format: DD/MM/YYYY”.				

PP is requested to mention the dates in the DD/MM/YYYY format throughout the MR.	
PP response	Date: 05/02/2024
All dates have been amended to be in the DD/MM/YYYY format throughout the MR.	
Documentation provided by PP	
TASC Zam VPA 1and3 MR v1.1	
VVB assessment	Date: 26/03/2024
Format of dates is updated throughout the MR.	
Hence, CAR03 is closed.	

CAR ID	04	Section no.	D.2	Date: 01/03/2024
Description of CAR				
In the section D.2 for the parameter QE IG, PP is requested to provide male/female split.				
PP response				Date: 05/02/2024
The following statement was added to the QE IG parameter table: "11 Male and 5 Female employees".				
Documentation provided by PP				
TASC Zam VPA 1and3 MR v1.1				
VVB assessment				Date: 26/03/2024
Male female split for the parameter QE IG is provided in the MR.				
Hence, CAR04 is closed.				

CAR ID	05	Section no.	E.4	Date: 01/03/2024
Description of CAR				
In the section E.4 the "Baseline estimate" "Project estimate" and "Net benefit" values for the VPA3 for SDG 13 is not consistent with the rest of the MR and the ER sheet. PP is requested to rectify the typo.				
PP response				Date: 05/02/2024
These values have been corrected and are now consistent with those in the ER calculation sheet and the rest of the MR.				
Documentation provided by PP				
VVB assessment				Date: 26/03/2024
Value of "Baseline estimate" "Project estimate" and "Net benefit" values for the VPA3 for SDG 13 is made consistent.				
Hence, CAR05 is closed.				

CAR ID	06	Section no.	E.4 and E.5	Date: 01/03/2024
Description of CAR				
In the section the E.4 and E.5 of the MR, the value for SDG 12 "Wood fuel savings while cooking on project ICS in tonnes per annum" or $B_{y,savings}$ the value is mentioned as 5.16 and in the sections D.2, E.2 of the MR and the ER sheet the value is 5.1673.				

PP is requested to keep the $B_{y,savings}$ value consistent throughout the MR and ER sheet.	
PP response	Date: 05/02/2024
The value for $B_{y,savings}$ has been updated to 5.1673 tonnes per annum throughout the MR and in the ER calculation sheet.	
Documentation provided by PP	
TASC_Zam_VPA_1and3_MR_v1.1 TASC Clean Cooking PoA Joint 2 ER calc sheet v1.1	
VVB assessment	Date: 26/03/2024
The value for $B_{y,savings}$ is made consistent in the MR and the ER sheet.	
Hence, CAR06 is closed.	

CAR ID	07	Section no.	ER sheet	Date: 01/03/2024
Description of CAR				
PP is requested to use "ROUNDDOWN" function for the 'baseline emission' and 'project emission' in the ER sheet.				
PP response				Date: 05/02/2024
The "ROUNDDOWN" function has been applied to the baseline and project emission calculations in Ex-Post tabs of the ER calculations sheet. The result was that the "baseline emissions" for VPA 1 changed from 305,445 to 305,444. This has been updated throughout the MR.				
Documentation provided by PP				
TASC_Zam_VPA_1and3_MR_v1.1 TASC Clean Cooking PoA Joint 2 ER calc sheet v1.1				
VVB assessment				Date: 26/03/2024
The "ROUNDDOWN" function has been applied for ERs in the ER sheet.				
Hence, CAR07 is closed.				

CAR ID	08	Section no.	ER sheet	Date: 26/03/2024
Description of CAR				
In the ER sheet the tab for VPA 1 MRV4 Tech days is labelled "Tech Days VPA 1 MRV 3".				
PP is requested to rectify the typo.				
PP response				Date: 09/04/2024
This tab has been correctly labelled "Tech Days VPA 1 MRV 4" in the excel workbook "TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.2".				
Documentation provided by PP				
TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.2				
VVB assessment				Date: 12/04/2024
The typo in the ER sheet has been rectified.				
Hence, CAR08 is closed.				

CAR ID	09	Section no.	KPI table	Date: 26/03/2024
Description of CAR				
In the KPI table of the MR the duration of the monitoring period for VPA 3 is mentioned as "03/06/2022 – 31/12/2023". In the "Table 2 - product vintages" the start date for VPA 3 is mentioned as "03/06/2023".				
PP is requested to provide consistent dates for the duration of monitoring period.				

PP response	Date: 09/04/2024
This was a typo and has now been corrected in the KPI table of "TASC_Zam_VPA_1and3_MR_v1.2". the correct dates are 03/06/2023 – 31/12/2023.	
Documentation provided by PP	
TASC_Zam_VPA_1and3_MR_v1.2	
VVB assessment	Date: 12/04/2024
"Table 2 - product vintages" in the MR is updated to provide consistent start dates for the monitoring period. Hence, CAR09 is closed.	

CAR ID	10	Section no.	Supporting document	Date: 26/03/2024
Description of CAR				
PP is requested to provide the following supporting documents: • VPA distribution records GS11145 (VPA1) GS11596 (VPA3) - GS11145_Distribution_Data, • Monitoring Habit survey records (VPA1 & 3 combined) • Habitat and KPT survey sample selection • Lab report from the Kenya Industrial Research and Development (KIRDI) for the thermal efficiency testing of cookstoves dated 19/11/2017 • Proof of Carbon Wavier certification • Awareness program evidences • KPT survey equipment details • Grievance evidences • End user training and follow up evidences • Field training evidences • Verification call evidences • Measuring instrument Purchase orders • Measuring instrument technical specification • Employment records				
PP response				Date: 09/04/2024
The name of the supporting document provided is listed below each requirement. • <i>VPA distribution records GS11145 (VPA1) GS11596 (VPA3)</i> GS11145_Distribution_Data GS11596_Distribution_Data • <i>Monitoring Habit survey records (VPA1 & 3 combined)</i> VPA_1and3_Zam_HabitSurvey_Joint_MRV_2 v1.1 • <i>Habitat and KPT survey sample selection</i> Habit Survey Sample Selection MRV2 VPA1&3 KPT_VPA1&3_MRV2_Sample_Selection				

- *Lab report from the Kenya Industrial Research and Development (KIRDI) for the thermal efficiency testing of cookstoves dated 19/11/2017*
Burn Kuniokoa Lab Report 2017

- *Proof of Carbon Wavier certification*
BURN Waiver Letter

- *Awareness program evidences*
Good Practice Monitoring Folder:
Zam_Village_Sensitizations
Zam_Community_Meeting

- *KPT survey equipment details*
Ryobi Moisture Meter-210-Manual-V1
Scale Info

- *Grievance evidences*
Grievance folder:
Grievance Book VPA1_Katete
Grievance Book VPA3_Katete
VPA 1 grievance book Lusaka 1
VPA 1 grievance book Lusaka 2

- *End user training and follow up evidences*
Good Practice Monitoring Folder:
Zam_Community_Meeting
Cookstove Guide for Zambia
Internal_Survey_Monitoring_Dashboard,

- *Field training evidences*
Field Training Folder

- *Verification call evidences*
Verification Calls Folder:
Zam_Stove_MRV2_HabitSurvey_VPA_1_&_3_Verification_Checks_V1.0
Call Recordings Folder

- *Measuring instrument Purchase orders*
Ryobi 2 in 1 Moisture Meter Order
Scales - Payment Confirmation

- *Measuring instrument technical specification*
Ryobi Moisture Meter-210-Manual-V1
Scale Info

- *Employment records*
There are 16 employees, not 17, this has been corrected in the MR.
Employment Records Folder:
Field Team folder
Monitoring team folder
Office Staff folder

Documentation provided by PP

The documentation provided is listed above in "PP response".

VVB assessment

Date: 12/04/2024

The requested documents are provided by the PP.

PP is requested to provide the screenshots of survey CTO forms used for monitoring.

Hence, CAR10 remains open.

PP response	Date: 17/04/2024
Screenshots of the internal monitoring, KPT and Habit Survey forms are provided in the “Screenshots of SurveyCTO forms used for monitoring” document. The full Habit Survey and KPT questionnaires are also provided in the following documents: “Zam_Stove_MRV_HabitSurvey_GS_full_form” and “Zam_Stove_MRV_KPT_GS_full_form”	
VVB assessment	Date: 17/04/2024
PP has provided Screenshots and habit survey and KPT forms in the supporting documents.	
Hence, CAR10 is closed.	

CAR ID	11	Section no.	D.4	Date: 26/03/2024
Description of CAR				
The stove ID for the KPT household Mushpike Chirwa, as recorded in the VVB's KPT survey is L6YPS5.				
In the PP's survey records the stove ID for the household is “H6YUN5”.				
PP is requested to provide the survey records and justification for the discrepancy in the stove ID of the households.				
PP response				Date: 09/04/2024
As shown in the distribution database and End User Agreements (which will be provided to the VVB) Mushupike Chirwa received the stove with serial number H6YUN5 on 14 November 2022 in Tsachilile village, Zambia. The serial number recorded by monitors when conducting the KPTs from 14 – 17 November 2023 was H6YUN5 for Mushupike Chirwa, as shown in the KPT spreadsheet “Zambia_pKPT_VPA 1 & 3_Nov 2023_v1.1”.				
The stove with serial number L6YPS5 is registered to Mary Banda according to the distribution records and monitoring database, and she also received the stove on 14 November 2022 in Tsachilile village, Zambia as shown in the End User Agreement provided.				
It is possible that, after the KPTs were conducted, the beneficiaries accidentally swapped stoves whilst at a community gathering where villagers come together to cook. This is a common occurrence in rural areas and both beneficiaries are from the same small village. However, a TASC monitor will be sent to the village to find both Mushupike Chirwa and Mary Banda and make sure that they have the correct stoves that were assigned to them during distribution. If not, they will sign new End User Agreements with the serial number of the stove that they currently have. This does not change the number of days that the stoves were operational as they were both distributed on the same day, 14 November 2022.				
Documentation provided by PP				
EndUserAgreement_MaryBanda_L6YPS5 EndUserAgreement_MushupikeChirwa_H6YUN5 Zambia_pKPT_VPA 1 & 3_Nov 2023_v1.1 GS11596_Distribution_Data				
VVB assessment				Date: 12/04/2024
The justification provided by PP is appropriate as the distribution date is same for both the stoves making the operational days same for both the stoves, hence, CAR11 is closed.				
However, this will be raised as a FAR to confirm whether the two beneficiaries (Mushupike Chirwa & Mary Banda) are having the stoves assigned to them or an updated End user agreement with serial number of the stove they have.				

CAR ID	12	Section no.	C, D.4, ER sheet, Habit survey records	Date: 12/04/2024
Description of CAR				
In section C of MR, the total number of Habit Survey conducted is 140, in section D.4 it is mentioned “The habit surveys were conducted on 241 randomly selected households” and “Out of the 232 participants in the cross VPA habit survey”. In the ER sheet tab “SDG Calculations” total number of samples are “232” and in the Habit survey records provided there are “227” samples.				
PP is requested to provide consistent records for the total sample of habit surveys.				
PP response				Date: 17/04/2024

The monitoring teams were given random samples of 140 households from each database (280 in total) when conducting the habit surveys instead of the required 100 samples as beneficiaries are often not home and oversampling makes it easier for the monitoring teams. For Joint MRV2, the monitors only conducted habit surveys at 232 of the 280 households given to them as a sample. The habit survey data: "Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2" will be provided to the VVB. The number of habit surveys was updated to 232 in the section D.4. of the MR and in the "SDG Calculations" tab of the ER calculation sheet: "TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3".

Documentation provided by PP	
Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2	
TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3	
TASC Zam_VPA_1and3_MR_v1.3	
VVB assessment	Date: 19/04/2024
In the section D.4 it is mentioned "The habit surveys were conducted on 241 randomly selected households".	
In section C of the MR it is mentioned "Samples were drawn at random from the respective monitoring databases by using an MS Excel randomizer and the first 140 households in the random list were selected for sampling. A random sample of 140 instead of 100 was drawn from each database to ensure that the required number of surveys are met as beneficiaries are often not home." PP is requested to update section C of the MR to clearly depict 140 household are selected from each VPA as per the PP's response.	
As mentioned in the PP's response "For Joint MRV2, the monitors only conducted habit surveys at 232 of the 280 households given to them as a sample." PP is requested to include this information in the section D.4 of the MR.	
Hence, CAR12 remains open.	
PP response	Date: 19/04/2024
The following sentence was added to Section D.4. of the MR: "The habit surveys were conducted on 232 randomly selected households from spread throughout the project distribution areas".	
Documentation provided by PP	
TASC Zam_VPA_1and3_MR_v1.4	
VVB assessment	Date: 24/04/2024
Number of samples taken for habit surveys are consistent throughout the MR.	
Hence, CAR12 is closed.	

CAR ID	13	Section no.	B.1	Date: 12/04/2024
Description of CAR				
In section B.1 of the MR it is mentioned "Distribution started on the 24/07/2020 (VPA 1) and /09/2021 (VPA 3)"				
PP is requested to make the start date of distribution for VPA 3 to be consistent throughout the MR.				
PP response				Date: 17/04/2024
The start date for the VPA 3 distribution was omitted erroneously and has been updated to 21/09/2021 in section B.1. of the MR				
Documentation provided by PP				
TASC_Zam_VPA_1and3_MR_v1.3				
VVB assessment				Date: 19/04/2024
Section B.1 is updated with correct date for distribution and in correct format.				
Hence, CAR 13 is closed.				

CAR ID	14	Section no.	C, D.2, D.3, D.4, ER sheet, Habit survey records	Date: 12/04/2024
Description of CAR				
PP is requested to rectify/make consistent/clarify these following points:				
1. In section D.3 of the MR the unit for LE _{p,y} is mentioned as "tCO ₂ " and in the section E.3 of the MR the unit uses is "tCO ₂ e/yr" PP is requested to make the units consistent throughout the MR.				
2. The parameter HHTS (SDG 5) is 97% in section D.2 and D.4 of the MR. In the ER sheet tab "SDG				

Calculations" it is 99.57627%. Also, the time saved in wood collection in D.4 is mentioned as "3.17" and in the "Wood Collection" tab of the habit survey records it is mentioned "3.207". PP is requested to provide consistent values for SDG 5 HHTS.

3. In section D.4 of the MR the number of households only buying wood is "15". in the cell "M16" "Wood Collection" tab the number is "14". PP is requested to maintain consistency in the Habit survey records and the MR.

4. For the following parameters the source of data (cells/tabs/sheet name) provided in the MR is not consistent with the ER sheet or the Habit survey records as following:

- Section D.4 of the MR "Households in the area are typically made up of the following demographics ("Household Demographics", cells H4 – H7, "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2")"
- Section D.4 ("Cooking Location", cells G2 – G4, "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2")"
- Section D.4 "All the survey participants indicated that it is easier and better to use the project ICS than the baseline 3-stone fire ("Stove performance", column A, "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2")"
- Section D.4 "No users reported having to repair any cracks or holes in stoves ("Data", cells AS1 – AW120, "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2")"
- Section D.4 "Firewood collectors are mainly female with 83% prevalence and the average age of firewood collectors is 38 years old ("Wood Collector", cell Q10 and P9, "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2")". Also, the calculation for the percentage is not provided in the habit survey records. PP is requested to provide the calculation of the figure "83%" in the Habit survey records.
- Section D.2, SDG 5 "HHTS", source of data is mentioned as "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2 ("Cooking Time", cell "F2")". PP is requested to make the source consistent and provide the calculation for the value provided in the MR.
- Section D.2, SDG 3 "SPM_{HH}" source of data is mentioned as "Zam_Stove_MRV_HabitSurvey_Joint_MRV_2 ("Stove Smoke")"

PP is requested to provide source of the data consistent with the ER sheet/habit survey records/KPT survey records throughout the MR.

5. In the ER sheet tab "Ex-Post VPA 1 MP4" and tab "Ex-Post VPA 3 MP 3" the value of "ER_{b,y,nonCO2}" and "ER_{b,y,CO2}" is not consistent among both of the ER sheet tabs. PP is requested to maintain consistency in the values in the ER sheet and the MR for "ER_{b,y,nonCO2}" and "ER_{b,y,CO2}".

PP response

Date: 17/04/2024

1. The units were added in the first column of the tables in Section D.3. of the MR. The correct unit for $LE_{p,y}$ is tCO_2e/yr
2. SDG 5 was broken up into two components: time savings during fuel collection and time savings during cooking, this was updated throughout the MR and in the SDG calculation tab of the ER calculation sheet. The correct time savings values were 99.5% of households reporting time savings during fuel collection and 99.6% of households reporting time savings while cooking.
 - I. The average amount of time saved during cooking per day is 3.21 hours and the time saved during wood collection is 2.56 hours per week ("Time Savings" tab, cells H6 and H12, "Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2").

These values have been corrected in Section D.4. of the MR.

3. The number of households that only buy wood has been updated to 14 in section D.4. of the MR in accordance with cell J12 of the “Wood & Money Savings” tab in the “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” spreadsheet.
4. – The household demographic source has been updated to: “Household Demographics”, cells H4 – H7G3 – J3, “Zam_Stove_MRV_HabitSurvey_Joint_MRV_2_v1.2”) in Section D.4 of the MR.
 - The cooking location source has been updated to: “Kitchen Location”, cells G2 – G4, “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2”) in Section D.4 of the MR.
 - The source for the statement “All the survey participants indicated that it is easier and better to use the project ICS than the baseline 3-stone fire” has been updated to: “Stove Use Ease”, cell F3, “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” in Section D.4 of the MR.
 - The source for the statement “No users reported having to repair any cracks or holes in stoves” has been updated to: “Cookstove Condition”, cells P4 – Q4, “Zam_Stove_MRV_HabitSurvey_JointMRV2_v2.1” in Section D.4 of the MR.
 - The source for the statement “Firewood collectors are mainly female with 83% prevalence and the average age of firewood collectors is 38 years old” has been updated to: “Wood Collector& Money Savings”, cell K3 and J6, “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” in Section D.4 of the MR. the calculation for the 83% is also provided in cell K4 of the “Wood & Money Savings” tab in the “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” spreadsheet.
 - The source for the value given for SDG 5 “HHTS” in Section D.2 has been updated to: “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2”, “Time Savings”, cells I3 and I9. The calculations for the values can also be found in the “Time Savings” tab of the “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” spreadsheet.
 - The source of data for SDG 3 “SPM_{HH}” in Section D.2 of the MR has been updated to: “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2”, “Cooking Time & Smoke”, cell K3
5. The value for “ERb,y,nonCO2” has been updated to 0.008976 and the value for “ERb,y,CO2” has been updated to 0.026985 in both the “Ex-Post VPA 1 MP4” and “Ex-Post VPA 3 MP 3” tabs of “TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3” and in the MR.

Documentation provided by PP

Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2
 TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3
 TASC Zam_VPA_1and3_MR_v1.3

VVB assessment

Date: 19/04/2024

1. The Unit of LE is now consistent throughout the MR. Hence, CAR14 part 1 is closed.
2. The time saved in cooking and collecting wood is now consistent in the MR section D.4 and the Habit survey records tab “Time Savings”. However, in the tab “Cooling Time & Smoke” of the habit survey records the values for time saved while cooking is still inconsistent. PP is requested to rectify this discrepancy.
3. The number of households that only buy wood has been updated to 14 in section D.4. of the MR in accordance with cell J12 of the “Wood & Money Savings” tab in the “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.2” spreadsheet. Hence, CAR14 part 3 is closed.
4. All the references used in the MR are consistent with the ER sheet and the habit survey records and KPT records. Hence, CAR14 part 4 is closed.

5. PP has updated the value for “ER _{b,y,nonCO2} ” to 0.008976 and the value for “ER _{b,y,CO2} ” to 0.026985 in both the “Ex-Post VPA 1 MP4” and “Ex-Post VPA 3 MP 3” tabs of “TASC Clean Cooking PoA Joint MRV 2 ER calc sheet v1.3” and in the MR. Hence, CAR 14 is closed.	
PP response	Date: 19/04/2024
2. The cooking time was erroneously included in the “Cooking Time & Smoke” tab, this has been corrected to now be the “Stove Smoke” tab in “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.3” spreadsheet. The correct value for time savings reported during cooking is 99.6%. The source references have also been updated throughout the MR.	
Documentation provided by PP	
TASC_Zam_VPA_1and3_MR_v1.4 Zam Stove MRV HabitSurvey JointMRV2 v1.3	
VVB assessment	Date: 24/04/2024
Cooking time now removed from the ‘Stove Smoke’ tab of the habit survey record. The value of time saved in cooking and collection of fuelwood is now consistent in the MR, ER sheet and the Habit survey records.	
Hence, CAR14 is closed.	

Table 3. CL from this verification

CL ID	01	Section no.	Key Project Information, A.1	Date: 01/03/2024
Description of CL				
The monitoring period in KPI table is mentioned as MP4 for VPA 1 and MP3 for VPA 3, in the section A.1 it is mentioned “The monitoring report covers the 3rd monitoring period for VPA 1 and the 2nd monitoring period for VPA 3”.				
PP is requested to clarify this discrepancy.				
PP response				Date: 05/02/2024
This was an error. Section A.1. of the MR has been updated and now correctly states: “The monitoring report covers the 4 th monitoring period for VPA 1 and the 3 rd monitoring period for VPA 3.”				
TASC_Zam_VPA_1and3_MR_v1.1				
VVB assessment				Date: 26/03/2024
Monitoring period is made consistent throughout the MR.				
Hence, CL01 is closed.				

CL ID	02	Section no.	D.2	Date: 01/03/2024
Description of CL				
In the section D.2 of the MR the value of the parameter B _{p,y,i} is mentioned as 1.27, 1.28 in the ER sheet, and 1.2754 in the section E.2 of the MR.				
PP is requested to clarify the discrepancy.				
PP response				Date: 05/02/2024
The parameter B _{p,y,i} is monitored through the use of KPTs and for this monitoring period it was calculated that households use an average of 1.2754 tonnes of wood per household per annum. Therefore, the correct value for B _{p,y,i} is 1.2754 tonnes per household per annum and this value has been used in the ER calculations and throughout the MR.				
TASC_Zam_VPA_1and3_MR_v1.1 TASC Clean Cooking PoA Joint 2 ER calc sheet v1.1				

VVB assessment	Date: 26/03/2024
Value of $B_{p,y,l}$ is made consistent throughout the ER sheet and MR.	
Hence, CL02 is closed.	

Annex 2: Assessment of data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 “Amount of CO ₂ e emissions reduced by the project per year”
Data / Parameter: (as in monitoring plan of PDD):	B _{p,y,i}
Unit	Tonnes per household per annum
Measuring frequency/Time Interval:	Updated every two years
Reported value	1.2754 tonnes (VPA 1) 1.2754 tonnes (VPA 3)
Verified Source of Data	Field Performance Tests (FPTs) Based on the assessment of the ex-ante calculation provided in the ER sheet tab “Ex-ante VPA 1” and “Ex-ante VPA 3”, the relationship between the baseline and project fuel consumption with reference to project stoves thermal efficiency is based on the result of ‘bKPT (B_{old,i})’ and ‘bKPT (B_{old,i}) adjusted based on the comparison of thermal efficiency of the Project stove (based on the thermal efficiency test provided as supporting document) with the baseline stove (methodology default /B02/)’. The ex-ante value for the parameter B_{p,y,i} is 1.55 tonnes (1.5487 tonnes) and the ex-post values achieved for the parameter B_{p,y,i} in the is 1.28 tonnes (1.2754 tonnes). The calculation provided by the PP in the ER sheet /02/ and KPT sheet /04/ is deemed to be appropriate and the same was confirmed through the KPT survey conducted by the verification team as part of the on-site visit. The project fuel consumption is recorded lower than the previous MPs (between MP1, MP2 and MP4 for VPA 01 and MP1 and MP3 for VPA 03) due to the difference in the time of the year the monitoring activities were conducted (summer for the current MP and winter in the previous MPs) and the second reason to account for the decreases fuel consumption in the project scenario is accounted to the continuous internal monitoring and sensitization activities conducted by the PP, which led to the increased adoption of the project cookstoves, the same has been verified from the surveys and interviews conducted of the TASC’s on-ground team and the end-users/beneficiaries of the project during the on-site visit. VVB, based on sampling surveyed the households took part in KPT survey, from the survey, it has been confirmed that KPT has been conducted as per the procedures provided in section D.2 and D.4 of MR. The KPT datasheet/04/ has also been reviewed and confirms that the KPT calculations are done appropriately. The calculation including the exclusion of outlier threshold is found to be consistent between

	baseline and project KPT.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	VVB based on the review of purchase orders/14/ dated 13/04/2023 confirms that the equipment used for KPT surveys were newly purchased. The technical specification document /15/ provided by PP has been reviewed and confirm that the information provide by PP in section D.2 of MR is deemed to be acceptable.
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 “Amount of CO2e emissions reduced by the project per year”
Data / Parameter: (as in monitoring plan of PDD):	U _{p,y}
Unit	Fraction (or %)
Measuring frequency/Time Interval:	Annual
Reported value	90%
Verified Source of Data	Annual usage survey VVB has conducted household surveys to verify the value provided by PP. VVB observed that all the households visited is in possession of project ICS and has been in use. However, PD based on Good practice usage level has only claimed for 90% of usage. VVB confirms that the requirements provided in requirements and guidelines: usage rate monitoring version 2.0 has been followed. Checklist for the usage rate assessment has been added in annex 3 of this report
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA

VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 “Amount of CO ₂ e emissions reduced by the project per year”
Data / Parameter: (as in monitoring plan of PDD):	N _{p,y}
Unit	Number
Measuring frequency/Time Interval:	Continuous
Reported value	44,517 (VPA 1) 99,785 (VPA 3)
Verified Source of Data	Monitoring Database. The value provided in MR has been cross checked with the database/03/ provided by PP and is found to be consistent
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 “Amount of CO ₂ e emissions reduced by the project per year”
Data / Parameter: (as in monitoring plan of PDD):	LE _{p,y}
Unit	Tonnes of CO ₂ equivalent per year
Measuring frequency/Time Interval:	Aggregate leakage can be assessed for multiple project scenarios, if appropriate, every two years
Reported value	0
Verified Source of Data	Leakage assessment, VVB during the interview with the end users confirmed that no leakage is applicable during the current monitoring period.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 1 Indicator 1.4.1 “Proportion of population living in households with access to basic services”
Data / Parameter: (as in monitoring plan of PDD):	BSA/ HHS
Unit	Number
Measuring frequency/Time Interval:	Annually
Reported value	44,517 (VPA 1) ICS in use 99,785 (VPA 3) ICS in use
Verified Source of Data	1. Monitoring Database ICS distribution records 2. Ex- post Monitoring Survey Records The value provided in MR has been cross checked with the database/03/ provided by PP and is found to be consistent

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 3 Indicator 3.9.1 “Mortality rate attributed to household and ambient air pollution”
Data / Parameter: (as in monitoring plan of PDD):	SPM _{HH}
Unit	%
Measuring frequency/Time Interval:	Annually
Reported value	100%
Verified Source of Data	Ex- post Monitoring Survey Records, VVB has conducted verification surveys based on random sampling following the guidelines of Sampling and surveys for CDM project activities and programmes of activities/B05/ to verify the value provided by PP. It has been found that the value provided by PP is consistent with the value observed by VVB during verification survey.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place

reductions and are necessary QA/QC processes in place?	
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 5 Indicator 5.4.1 “Proportion of time spent on unpaid domestic and care work, by sex, age and location”
Data / Parameter: (as in monitoring plan of PDD):	HHTS
Unit	%
Measuring frequency/Time Interval:	Annual
Reported value	99.5% (fuel collection) 99.6% (cooking)
Verified Source of Data	Ex- post Monitoring Survey Records VVB has conducted verification surveys based on random sampling following the guidelines of Sampling and surveys for CDM project activities and programmes of activities/B05/ to verify the value provided by PP. It has been found that the value provided by PP is consistent with the value observed by VVB during verification survey.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
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Relevant SDG Indicator	SDG 7 Indicator 7.1.2 “Proportion of population with primary reliance on clean fuels and technology”
Data / Parameter: (as in monitoring plan of PDD):	AACS _{HH}
Unit	Number
Measuring frequency/Time Interval:	Continuous
Reported value	44,517 (VPA 1) 99,785 (VPA 3)
Verified Source of Data	ICS Monitoring Database The value provided in MR has been cross checked with the database/03/ provided by PP and is found to be consistent
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 8 Indicator 8.5.1 “Average hourly earnings of female and male employees, by occupation, age and persons with disabilities”
Data / Parameter: (as in monitoring plan of PDD):	QE IG
Unit	Number
Measuring frequency/Time Interval:	Annually
Reported value	16 employed across VPA 1 and VPA 3 (11 male and 5 female)
Verified Source of Data	Employment Records. The employment contract/16/ of all the 16 employees has been provided to VVB by PP. The same has been cross checked to verify the value.
Is measuring and reporting frequency in accordance with the monitoring	Yes

plan and monitoring methodology? (Yes / No)	
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 12 Indicator 12.2.2 “Domestic material consumption, domestic material consumption per capita and domestic material consumption per GDP”
Data / Parameter: (as in monitoring plan of PDD):	B _{y,savings}
Unit	Tonnes/ year
Measuring frequency/Time Interval:	Annually/ biennially
Reported value	5.1673 t/pa
Verified Source of Data	Ex- post Monitoring Survey Records. The value has been obtained by subtracting parameter B _{p,y,i} from B _{old,i} . VVB confirmed that the value provided in ER sheet/02/ is appropriate.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered	NA

monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	
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Annex 3: Checklist for evaluating the compliance of project with requirement and guidelines - Usage rate requirement (2.0)

Section	Sub Section	Criteria	VVB response
1. Scope and applicability	N/A	a. VVBs the project/PoA undergoing certification involve any one or more of the following technologies: solid, gaseous fuel based improved cooking technologies for example firewood, charcoal based improved cookstove, household biogas digesters, solar cookers, etc.?	Yes, the project activity involves the distribution of improved cookstoves.
		b. If there is any conflict with the TPDDTEC methodology, are all the rules and requirements contained in this Annex given precedent and followed by the project/PoA?	There is no conflict observed with the TPDDTEC methodology.
	2.1 Levels of usage	a. Has the project/PoA clearly specified the usage monitoring requirement level in the PDD/VPA-DD?	Yes, please refer section B.7.1 of VPA DD/B04/
		b. Has the project/PoA correctly applied the level of usage and associated monitoring requirements in accordance with the claimable usage rates?	Yes. As per the article 2.3 of the guideline for Usage Rate Monitoring v2.0 /B07/, Good practice level of usage with maximum 90% usage rate has been applied
		c. In case the project/PoA applies a different level of usage as compared to the registered PDD, have the monitoring requirements from the levels below been followed?	The MR has also followed Good practice usage level which is explained in section D.4 of MR/01/
		a. Has the project/PoA	Use and Non-use has not been defined in the VPA

2. Requirements and guidelines	2.2 Mandatory monitoring requirements	defined project technology “use” and “non-use” (Step 1) and documented the criteria applied for defining them in the PDD(s)?	DD/B04/. The use and non use is defined in section D.4 of MR/01/.
		b. Is the project’s definition of “use” and “nonuse” correct and their documentation of the criteria applied for defining this done correctly?	The definition for use and non use has been added in the section D.4 of the MR/01/.
		c. Has the project/PoA correctly identified criteria to define use and non use considering the representative cooking practices and likely project technology use?	Yes, the use and non use project technology has been identified during the monitoring survey and can be assessed from the habitat survey sheet/05/.
		d. Has the project developer carried out in-person household usage surveys (Step 2) by: i. Determining the minimum sample size for the survey as per the methodology requirements? ii. Performing the following monitoring activities, at minimum, as per the requirements of this Annex: Kitchen observation, interview of the primary cook, taken photos of the cooking areas and recorded the GPS coordinates of the household?	i. yes, the detailed sampling procedure is given in section D.4 of MR/01/ ii. yes, the questionnaires conducted and the photographs taken during monitoring survey has been verified by VVB
		e. Has the project developer performed the verification checks (Step 3) prior to the verification by the VVB?	Yes, the same has been verified on the basis of the review of call records and verification checks spreadsheet/13/ provided by PP.
		f. Has the project developer kept a record of the verification checks containing the details. of households and their responses?	Yes, the records are also provided to the VVB in the file “Zam_Stove_MRV_HabitSurvey_JointMRV2_v1.3” /05/
		g. VVBs the evidence establish a clear relationship between the usage claimed by	Yes, the observation provided in the evidence /05/ has been cross checked with the ER sheet/02/ and VVB confirms that the evidence establishes a clear relationship between the usage rate claimed

		the project and observations made during the in-person household surveys?	by project and observations made in in-person surveys.
	2.3 Good practice monitoring requirements for improved cooking devices.	a. Has the project/PoA successfully met all the mandatory usage rate requirements?	VVB confirms that the project met all the mandatory usage rate requirement defined in the section 2,2 of REQUIREMENTS AND GUIDELINES: USAGE RATE MONITORING version 2.0./B07/
		b. Is the project/PoA eligible to apply the good practice monitoring requirements?	Yes, PP has followed all procedure required for the mandatory as well as good practice usage requirements as provided in section D.4 of MR/01/
		c. Has the project developer carried out the following monitoring activities as per the relevant requirements: i. Field team training and supervision ii. End-user training and follow-up visits? Awareness campaign?	Based on the review of the section D.4 of MR/01/ and its supporting documents /12/ /09/. VVB confirms that the monitoring activities have been carried out as per the requirement.
		d. Has the project developer provided evidence for trainings, follow up site visits, awareness campaign?	Yes, the evidence/09/ /12/ have been provide to VVB and verified.
		e. In VVB's opinion, i. Can the effectiveness of the trainings, follow up site visits and awareness campaigns be confirmed? ii. Should project developer make changes in registered trainings, site visits and awareness campaigns to enhance the effectiveness?	i. Based on the review of the MR/01/, and supporting documents, VVB confirms that the trainings, follow up visits and awareness campaigns are deemed to be effective, and ii. No further changes are required .
	2.4 Best practice monitoring requirements	a. Has the project/VPA successfully met all the mandatory & good practice usage rate requirements?	PoA has not opted for this level of usage, and therefore not applicable for this PoA
		b. Is the project/PoA eligible to apply the best practice monitoring requirements?	
		c. Has the project developer carried out stove use monitoring activities as per the relevant requirements?	
		d. Has the project	

		developer correctly calculated the stove use based on the stove use monitoring?	
3. Determination of usage rate ($U_{p,y}$)		a. Has the project developer applied the applicable cap at individual age-group?	Yes, verified based on review of ER sheet /02/, tab "Upy".
		b. Has the project developer appropriately applied the weighted-average usage rate quantification approach to each monitored project technology age group?	Yes,