



**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 – VPA03 (Zambia) (GS11596)
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the verification and certification report	03
Completion date of the verification and certification report	04/02/2023
Monitoring period number and duration of this monitoring period	01 21/09/2021 – 23/07/2022 (inclusive)
Version number of the monitoring report to which this report applies	1.2
Crediting period of the project activity corresponding to this monitoring period	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 Thermal 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	315,505 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	190,350 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 Limited.
Name, position and signature of the approver of the verification and certification report	 Amit Anand, CEO

SECTION A. Executive summary

Carbon Check (India) Private Ltd. (CCIPL) is performing the first periodic verification of the GS project "TASC Clean Cooking PoA - VPA03 (Zambia)" (GS project id: GS 11596) for the period 21/09/2021 – 23/07/2022 (inclusive). The VPA will stimulate the installation of Kunioko Model wood fuel cookstoves manufactured by Burn Manufacturing LLC, with a thermal efficiency of 41.6%. All the stoves were distributed from 21 September 2021 in all regions of Zambia.

According to the PDD /B04/ & MR /02/, the project activity " TASC Clean Cooking PoA - VPA03 (Zambia) " is part of the African Stove Company & is the first VPA that is implemented in Zambia. The overall objective of the VPA 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 - VPA03 (Zambia)" in the host country "Zambia" for the period 21/09/2021 – 23/07/2022 (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 VPA- DD and the approved monitoring methodology.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered VPA-DD
- To verify the implemented monitoring plan with the registered VPA-DD 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 /02/ over the monitoring period from 21/09/2021 – 23/07/2022 (inclusive) and based on the registered VPA-DD/B04/ as part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology, and all related evidence provided by project participants.

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 /02/, meet all 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 VPA-DD /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	ER (tCO₂e)
21/09/2021 – 31/12/2021	34,591 tCO ₂ e
01/01/2022 – 23/07/2022	155,759 tCO ₂ e
Total for the monitoring period	190,350 tCO₂e

CC IPL as a Validation & verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the attached 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 /	IR	Dimri	Anubhav	CC IPL	X	X	X	X

	Technical Expert								
2.	Trainee Assessor	IR	R	Saranya	CC IPL	X			X
3.	Local Expert	EI	Joyce	Msoni	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	C	Indumathi	CC IPL
2.	Approver	IR	Anand	Amit	CC IPL

Anubhav Dimri: An appointed Team Leader. He holds a Post Graduate Diploma in Industrial Safety and Environmental Management. He is a trained GHG Lead Auditor. He is participated and passed 5 days ISO 50001 Lead Auditor (UNIDO sponsored) training course. He has experience in the field of Carbon Offsets both in the regulatory and voluntary front, including project validation. He has participated in GS, VCS and CDM validations and verifications. He has been involved in verification/validation of GS projects with reference numbers: GS 411, GS 916, GS 1231, GS 1029, GS 1030, GS 1031, GS 1385, GS 2094, GS 1162, GS 1352, GS 1353, GS 2437, GS 2718, GS 2722. He has also been involved in more than 100 CDM projects/programme of activities submitted to UNFCCC for Request for Registration/Inclusion/Request for Issuance. He has also worked on a number of VCS projects. He has also attended several Gold Standard VVB webinar trainings and GS4GG trainings. He has also undergone training for ISO 9001, GHG verifier training, and technical area 1.2 training. He is qualified as technical expert for TA 1.1, 1.2, 3.1 and 13.1 under CDM SS/TA categorization.

Indumathi. C: Qualified lead assessor and internal technical reviewer for offset projects validations and verifications under CDM, VCS and Gold Standard (GS) and actively been involved in the validation and verification or internal technical review of more than 300 GHG offset projects. She is qualified as technical expert for TA 1.2, 3.1, 4.1, 13.1 and 13.2 under CDM SS categorisation. She has undergone extensive training in the validation and verification of carbon offset projects including the accreditation requirements for the VVBs. She has more than 13 years of work experience in climate change mitigation, renewable energy, energy efficiency and energy access. She has worked with various Designated Operational Entities like TUV NORD, TUV Rheinland and 4KES for more than 250 GHG emission reduction projects under different carbon crediting mechanisms. Moreover, she was involved in implementation of UNDP energy programs at Ministry of New and Renewable Energy (MNRE) and has also gained experience in energy trade by working with British High Commission. She is a certified GHG Auditor and Energy Manager (Bureau of Energy Efficiency, Government of India). She holds a Bachelor of Technology degree in Energy and Environmental Engineering & Post Graduate Diploma in Business Administration. She has been involved in number of GS validation and verification projects (as internal technical reviewer). She has also attended Several Gold Standard VVB webinar trainings including training on GS4GG.

R Saranya: She is a trainee assessor at Carbon Check (India) Private Limited.

Joyce Msoni: She is a local expert for Zambia and speaks the local languages Bemba, Nyanja, Tonga and Lozi as well as English.

SECTION C. Means of verification

C.1. Desk/document review

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The verification was performed primarily based on the review of the Monitoring report /02/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

C.2. On-site inspection

Onsite physical audit has been performed. The Team leader has conducted the on-site inspection and in particular the simple random sampling.

Furthermore, VVB has considered the Site Visit and Remote Audit Requirements and Procedures, version 1.0/B06/ for conducting the onsite visit. In accordance with the requirements provided in the §3.1.1(b) of the Site Visit and Remote Audit Requirements and Procedures, version 1.0/B06/.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
/01/	Shamabanse	Peter	TASC	18/01/2023 to 19/01/2023	Details of survey, methodology, Survey results, QA/QC procedure etc.	Anubhav Dimri, Joyce Msoni
/02/	Cogho	Edwin	TASC	18/01/2023 to 19/01/2023	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.	Anubhav Dimri, Joyce Msoni
/03/	Shabanyama	Annie	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/04/	Daka	Chisoni	Habit Survey participant	18/01/2023 to 19/01/2023	Habit Survey Questionnaire	Anubhav Dimri, Joyce Msoni
/05/	Mvula	Dokas	Habit Survey participant	18/01/2023 to 19/01/2023	Habit Survey Questionnaire	Anubhav Dimri, Joyce Msoni

/06/	Tembo	Florence	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/07/	Tembo	Eleti	Habit Survey participant	18/01/2023 to 19/01/2023	Habit Survey Questionnaire	Anubhav Dimri, Joyce Msoni
/08/	Daka	Emelia	Habit Survey participant	18/01/2023 to 19/01/2023	Habit Survey Questionnaire	Anubhav Dimri, Joyce Msoni
/09/	Daka	Jacob	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/10/	Sakala	Magret	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/11/	Banda	Fiadesi	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/12/	Mugande	Shelly	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/13/	Mwanza	Tisiyenji	Habit Survey participant	18/01/2023 to 19/01/2023	Habit Survey Questionnaire	Anubhav Dimri, Joyce Msoni
/14/	Kuchula	Vainess	KPT Survey Participant	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni
/15/	Likobama	Katilina	KPT Survey Participant ¹	18/01/2023 to 19/01/2023	KPT Survey	Anubhav Dimri, Joyce Msoni

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

¹ VVB has used this KPT result from VPA 01, 2nd MP, this is taken on the basis of a clarification mail that has been sent by GS to the PP that "PP may use the same KPT results for 2 VPAs if the requirements related to homogeneity and the start date of both VPAs (gap of 2 years) are met. VVB opinion shall also be sought." VVB has assessed that the requirement related to homogeneity and the start date of both VPAs and confirmed find that the requirements are met.

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, 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 08 households was chosen (with no discrepant records). A sample size of 08 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk 5% and consumer risk of 20% each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0. However, VVB interviewed 08 samples from the baseline survey done by project participants. The KPT survey participants for the survey carried out during the period 12/07/2021 to 08/08/2021 were interviewed. The Habit survey participants for the survey carried out during the period 06/07/2022 to 19/07/2022 were interviewed.

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

Parameter	Verification approach	Population (for VVB's sample)	VVB's Sample Size
Usage & monitoring surveys	Sampling Survey	120	08
KPT Surveys /08/	Sampling Survey	50	08

The details of the sample interviewed are listed in section C.3 (under the list of interviewed persons). No discrepancy was found in any of the 08 samples and thus $c=0$, i.e., no discrepant records were observed. 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, who conducted such test were checked. They were also interviewed to ensure that the process, method used, and their competency to confirm such standardised test were appropriately applied. The sampling technique to draw such samples were 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 05 clarifications (CLs) and 05 corrective action requests (CARs) and satisfactorily closed.

SECTION D. Verification findings

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

Not Applicable

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 /B04/. The starting date of stove distribution is 21/09/2021 which is confirmed from the registered VPA-DD /B04/ and validation report /B04/. The project boundary in the registered VPA-DD /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 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 username, 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) /B02/. The first ICS's distribution was commissioned from 21 September 2021. A total of 32,625 (VPA3) cookstoves were distributed in the monitoring periods. Verification team based on review of MR /02/ and provided evidence confirms that the households/end users relinquish their right of carbon credits. Furthermore, the ICS implemented under the project is 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 complies with the VPA-DD/B04/.

	Verification team has checked the information in the monitoring report /02/ and compared it against the registered VPA-DD /B04/ and found to be consistent. Verification team confirms that: a) The project activity is implemented as per registered VPA-DD/B04/. b) The actual operation of the proposed project activity is in line with the registered VPA DD /B04/. c) It has reviewed the registered VPA DD /B04/ including the monitoring plan, the applied monitoring methodology and found that the final MR/02/ for this monitoring period is in line with all the above-mentioned documents. 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. In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered VPA DD /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 documents²

Not applicable

D.3.2. Corrections

Not applicable

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

² 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).

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
Findings	--
Conclusion	The Verification team confirms that the monitoring plan contained in VPA-DD 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-DD /B04/.

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	6.4427 tonnes	Baseline kitchen performance tests (KPTs)	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.

	EF_{b,i,CO2}	CO2 emission factor arising from use of fuel type i in baseline scenario	Fuelwood: 1.68 tCO2/tfuel	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 consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.
	EF_{b,i,nonCO2}	Non-CO2 emission factor arising from use of fuel type i in baseline scenario	Fuelwood: 0.5588 tCO2/tfuel	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, table 2.9- Residential Source Emission factors, The Gold Standard Simplified Methodology for Efficient Cookstoves, February 2013, ER_Calculation_Tool_Cookstove_Meth_V 2.00Summary of the Methodology	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.

	EF_{p,i,CO2}	CO2 emission factor arising from use of fuel type i in project scenario	Fuelwood: 1.68 tCO2/tfuel	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 consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.
	EF_{p,i,nonCO2}	Non-CO2 emission factor arising from use of fuel type i in project scenario	Fuelwood: 0.5588 tCO2/tfuel	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.9— Residential Source Emission Factors, The Gold Standard Simplified Methodology for Efficient Cookstoves, February 2013, ER_Calculation_Tool_Cookstove_Meth_V2.00Summary of the Methodology	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.

	NCV_{b,i}	Net calorific value of the fuel type i used in the baseline	Fuelwood: 0.015 TJ/tonnes	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	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	PDD (C4EcoSolutions report)	The value is consistent with included VPA-DD /B04/ and fixed ex-ante for the duration of the crediting period.

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 VPA DD /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 2 for assessment of each parameter

D.5.3. Implementation of sampling plan

Means of verification	Document Review, Interview
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Findings	CAR 04 has been raised and closed in this regard
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 target population is the 32,625 ICS during the monitoring period. 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 120 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 120 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 50. After the initial 50 KPT's the 90/10 precision was not met, so a further 5 KPT's were done, totalling at 50 KPT's. This led to a precision of 8.47% 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. The KPT data from VPA 1 has been applied in this monitoring period due to the homogeneity between VPAs 1 and 3, and also the start dates being within 2 years of each other. The verification team has thus accepted the data. Moreover, the clarification evidence mail by GS for usage of KPT data from the VPA1/16/ was also checked in this regard.

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

Means of verification	Document Review, Interview
Findings	--
Conclusion	N/A since there is no monitoring equipment which require calibration as per the monitoring plan. The equipment's used for the monitoring consists of reviewing the documents and on-site interviews.

D.7. Assessment of data and calculation of emission reductions or net removals

D.7.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	CL 03 has been raised and closed in this regard
Conclusion	The Baseline Emission reduction is calculated as: $BE_{b,y} = \sum_{b,p} N_{p,y} * U_{p,y} * (ER_{b,p,y,CO2} + ER_{b,p,y,nonCO2}) - \sum LE_{p,y}$ Where: $\sum_{b,p}$ Sum over all relevant (baseline b) couples = 32,625 ICS $N_{p,y}$ Cumulative number of project technology-days included in the sales/distribution database for project scenario p against baseline scenario b in year y = 32,625* Total Technology days = 8,122,557 days $U_{p,y}$ Cumulative usage rate for technologies in baseline scenario p in year y = 90%

	ER_{b,p,y,CO_2} Specific CO_2 emission savings for an individual technology of Baseline b in year y, in tCO_2/day as derived from the statistical analysis of the data collected from the field tests and adjusted for the 90% usage rate = $8.8646 tCO_2$ per annum = $0.0243 tCO_2/day$ $ER_{b,p,y,nonCO_2}$ Specific non-CO_2 emission savings for an individual technology of Baseline b in year y, in tCO_2/day as derived from the statistical analysis of the data collected from the field tests and adjusted for the 90% usage rate = $2.9485 tCO_2$ per annum = $0.0081 tCO_2/day$ $ER_{b,p,y,CO_2} = \sum_i \{ f_{NRB,b,i,y} * B_{b,y,i} * NCV_{b,i} * EF_{b,i,CO_2} \}$ Where: $f_{NRB,b,i,y}$ 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 = 6.4427 t $NCV_{b,i}$ Net calorific value of the fuel type i used in baseline b (TJ/tonnes) = 0.015 EF_{b,i,CO_2} CO_2 emission factor of the fuel type i used in the baseline = $112 tCO_2/TJ * 0.015 TJ/t = 1.68 tCO_2/tonne$ of wood 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-CO_2 emission factor of the fuel type i used in the baseline = $(34.27 (CH_4) + 2.98 (N_2O) tCO_2/TJ) * 0.015 TJ/t = 0.5588 tCO_2/tonne$ of wood The overall baseline emissions for the reported monitoring period are $262,884 tCO_2e$.
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D.7.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	--
Conclusion	The Emission reduction is calculated as: $ER_y = \sum_{b,p} N_{p,y} * U_{p,y} * (ER_{b,p,y,CO_2} + ER_{b,p,y,nonCO_2}) - \sum LE_{p,y}$ Where: $\sum_{b,p}$ - Sum over all relevant (baseline b/project p) couples = 32,625 ICS $N_{p,y}$ - Cumulative number of project technology-days included in the sales/distribution database for project scenario p against baseline scenario b in year y = $32,625 * \text{Total Technology days} = 8,122,557$ days $U_{p,y}$ - 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 CO_2 emission savings for an individual technology of Project against an individual technology of Baseline b in year y , in tCO_2/day as derived from the statistical analysis of the data collected from the field tests = 6.42 t per annum = 0.01759 tCO_2e/day

$ER_{b,p,y,nonCO_2}$ - Specific non- CO_2 emission savings for an individual technology of Project against an individual technology of Baseline b in year y , in tCO_2/day as derived from the statistical analysis of the data collected from the field tests = 2.13 t per annum = 0.00585 tCO_2e/day

$LE_{p,y}$ - Leakage for project scenario p in year y = 0% = 0 tCO_2e/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 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 = 6.4427t

$B_{p,y,i}$ - 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 = 1.7776t

$NCV_{b,i}$ - Net calorific value of the fuel type i used in baseline b (TJ/tonnes) = 0.015

$NCV_{p,i}$ - Net calorific value of the fuel type i used in project p (TJ/tonnes) = 0.015

EF_{b,i,CO_2} - CO_2 emission factor of the fuel type i used in the baseline = $112 tCO_2/TJ * 0.015 TJ/t = 1.68 tCO_2/tonne$ of wood

EF_{p,i,CO_2} - CO_2 emission factor of the fuel type i used in the project = $112 tCO_2/TJ * 0.015 TJ/t = 1.68 tCO_2/tonne$ of wood

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- CO_2 emission factor of the fuel type i used in the baseline = $(34.27 (CH_4) + 2.98 (N_2O) tCO_2/TJ) * 0.015 TJ/t = 0.5588 tCO_2/tonne$ of wood

$EF_{p,i,nonCO_2}$ non- CO_2 emission factor of the fuel type i used in the project = $(34.27 (CH_4) + 2.98 (N_2O) tCO_2/TJ) * 0.015 TJ/t = 0.5588 tCO_2/tonne$ of wood

	LE _y - Leakage for project scenario p in year y = 0%
--	---

D.7.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
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 GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	-
Conclusion	Emission Reductions: The emission reductions in this monitoring period are: $ER_y = BE_y - PE_y - LE_y$ Where, ER_y is the total emission reductions of the project activity during the year y in tCO₂e = 190,350 BE_y is the baseline emissions for the project activity during the year y in tCO₂e = 262,884 PE_y is the emissions for the project activity during the year y in tCO₂e = 72,533 LE_y is the leakage emissions for the project activity during the year y in tCO₂e = 0 As explained in section D.7.1 above, the resulted Baseline emissions (BE_y) for the monitoring period is 262,884 tCO₂e. Similarly, as explained in section D.7.2 and section D.7.3 project emission (PE_y) is 72,533 tCO₂e for the monitoring period. Hence, resulted emission reduction (ER_y) for the monitoring period is 190,350 tCO₂e.

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 PDD /B04/ is 315,505 tCO ₂ e and the actual emission reductions achieved for the monitoring period is 190,350 tCO ₂ e.		
	SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period

	13	315,505 tCO ₂ e	190,350 tCO ₂ e
	1	32,700 (Number of ICS distributed) 810 (Kwacha per annum)	32,625 (Number of ICS distributed) 53.2 (Kwacha per annum)
	3	100%	99%
	5	100%	98%
	7	32,700 (Number of ICS distributed)	32,625 (Number of ICS distributed)
	8	30 (Number of persons hired)	25 (Number of persons hired)
	12	4.8919 (tonnes/year)	4.6650 (tonnes/year)
The emission reduction calculations provided in the spreadsheet /04/ 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	CAR05 has been raised and closed in this regard.
Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 315,505 tCO₂e and the actual emission reductions achieved for the monitoring period is 190,350 tCO₂e. For SDG 13, since actual emission reduction is lower than the estimated value and hence it is acceptable to the verification team. The monitoring report /02/ 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, which is deemed appropriate and thus acceptable to the VVB. • SDG 3: The actual value is less 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, 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. • SDG 12: The actual value is less 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, which is deemed appropriate and thus acceptable to the VVB.

SECTION E. Internal quality control

The verification report 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. (CC IPL) has performed the 1st periodic verification of the registered GS Project Activity "TASC Clean Cooking PoA- VPA03 (Zambia)".

The verification team assigned by the VVB concludes that the project activity as described in the PDD /B04/ and the Monitoring report /02/, meets all 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. 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 VPA-DD /B04/, including the monitoring plan and the corresponding validation report /B04/;
- Desk review of the MR /02/ 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 (18/01/2023- and 19/01/2023)
- 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 VPA-DD. 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 190,350 tCO₂e emission reductions during the reported monitoring period.

This statement covers verification period from 21/09/2021 – 23/07/2022 (inclusive).

The VVB has raised 05 clarifications and 05 corrective action requests, all of which are satisfactorily closed.

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 VPA -DD are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 190,350 tCO₂e 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.
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
GS	Gold Standard
GWP	Global Warming Potential
ICS	Improved Cook Stoves
IPCC	Intergovernmental Panel on Climate Change
KPT	Kitchen Performance Test
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
OSV	On Site Visit
PE	Project Emissions
PDD	Project Design Document
PoA	Programme of Activity
PP(s)	Project Participant(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TASC	The African Stove Company
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary Project Activity
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				
Mr. Anubhav Dimri				
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	
☒ SDG+	☒ Social no-harm(S+)	☒ Environment no-harm(E+)	☐ CCB Expert	
☒ Financial Expert	☒ Local Expert for India, South Africa and Spanish speaking countries			
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			
Issue Date		Expiry Date		
1 st January 2023		31 st December 2023		
 Mr. Vikash Kumar Singh Compliance Officer		 Mr. Amit Anand CEO		
CCIPL_FM 7.9 Certificate of Competency_V2.1_012023				



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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 |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | ☐ CCB Expert |
| ☒ Financial Expert | ☒ Local Expert for India and Sri Lanka | | |

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 | | | |

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

Appendix 3. Documents reviewed or referenced

S. No.	Document
/01/	Monitoring Report (Version 1.0 dated 29/12/2022)
/02/	Monitoring Report Final Version (Version 1.2 dated 27/01/2023)
/03/	Emission reductions sheet (Corresponding to /01/)
/04/	Emission reductions sheet (Corresponding to /02/)
/05/	VPA Distribution records of Kuniokoa model cookstoves
/06/	Field Training Records
/07/	KPT conducting methodology of Cookstoves
/08/	Kitchen Performance test (KPT) records of 2021
/09/	Kuniokoa Model wood fuel cookstove product leaflet / stovemanual
/10/	Lab report from the Kenya Industrial Research and Development (KIRDI) for the thermal efficiency testing of cookstoves
/11/	Local Stakeholder Consultation Report
/12/	Photographic Evidence of Grievance Book
/13/	Proof of Carbon Wavier certification
/14/	User Habit survey records of 2022
/15/	Equipment Manual- Moisture Meter
/16/	Evidence of mail by GS for usage of KPT data from VPA1

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 Principles and Requirements version 1.2, dated 23/10/2019 2. Gold Standard Programme of Activity Requirements version 1.2, dated 24/10/2019 3. GS Validation & Verification Body Requirements version 2.0, dated 14/01/2021 4. Community Services Activity Requirements (version 1.2, dated 23/10/2019) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/
/B04/	1. Registered VPA-DD, Version 1.4 and Corresponding validation report 2. Registered PoA-DD and Corresponding Validation Report
/B05/	Sampling and Survey a) Standard for sampling and surveys for CDM project activities and Programme of Activities, version 09.0 b) Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.
/B06/	Site Visit and Remote Audit Requirements and Procedures, version 1.0 dated 17/11/2021

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

Table 1. FARs from this verification

FAR ID	00	Section no.		Date:	
Description of FAR					
NA					
PP response				Date:	
Documentation provided by the CME					
VVB assessment				Date:	

Table 2. CARs from this verification

CAR ID	01	Section no.	--	Date:	25/01/2023
Description of CAR					
During this validation VVB did not conduct a physical site visit and conducted a remote audit instead according to para 3.2.1. of Site Visit and Remote Audit Requirements and Procedures v 1.0. Thus, VVB must ensure that according to §3.2.2 of Site Visit and Remote Audit Requirements and Procedures v 1.0. A physical site visit has been mandatorily undertaken at the time of first verification of the project.					
PP response				Date:	25/01/2023
A site visit was completed by the VVB on the 18 th and 19 th of January 2023.					
Documentation provided by PP					
VVB assessment				Date:	28/01/2023
VVB has conducted the site visit for the GS11596 TASC Clean Cooking PoA – VPA 3 (Zambia) on 18 th and 19 th of January 2023. Thus, CAR 1 is closed.					

CAR ID	02	Section no.	--	Date:	25/01/2023
Description of CAR					
An onsite LSC was not conducted prior to the start date of the project. According to §4.2.8 of Principle & Requirements, The Stakeholder Consultation shall be conducted prior to the start date of the Project. If the Consultation is conducted after the start date, the Project Developer shall provide further explanation of how comments received during the consultation are taken into account and implement a Grievance Mechanism in line with the Stakeholder Consultation & Engagement Requirements. In this aspect an onsite physical LSC shall be carried out prior to 1 st verification. The LSC report shall be updated accordingly. All stakeholders inputs shall be describe in Section G of the monitoring report. Verifying VVB shall provide details assessment in FVR.					
PP response				Date:	25/01/2023

A joint stakeholder consultation and stakeholder feedback round was conducted for GS11145 TASC Clean Cooking PoA – VPA 1 (Zambia), GS11596 TASC Clean Cooking PoA – VPA 3 (Zambia) and all subsequent VPA's based in Zambia. The in-person stakeholder consultation was held on 19/05/2022 and the stakeholder feedback round was held from 27/06/2022 to 27/08/2022. A table with the comments raised by stakeholders and responses have been added in Section G of the MR.

Documentation provided by PP

VVB assessment

Date: 28/01/2023

In reference to the section G of the MR, VVB has assessed that the PP has provided the about the stakeholder consultation and the responses of the consultation. Thus, CAR 2 is closed.

CAR ID 03

Section no. --

Date: 25/01/2023

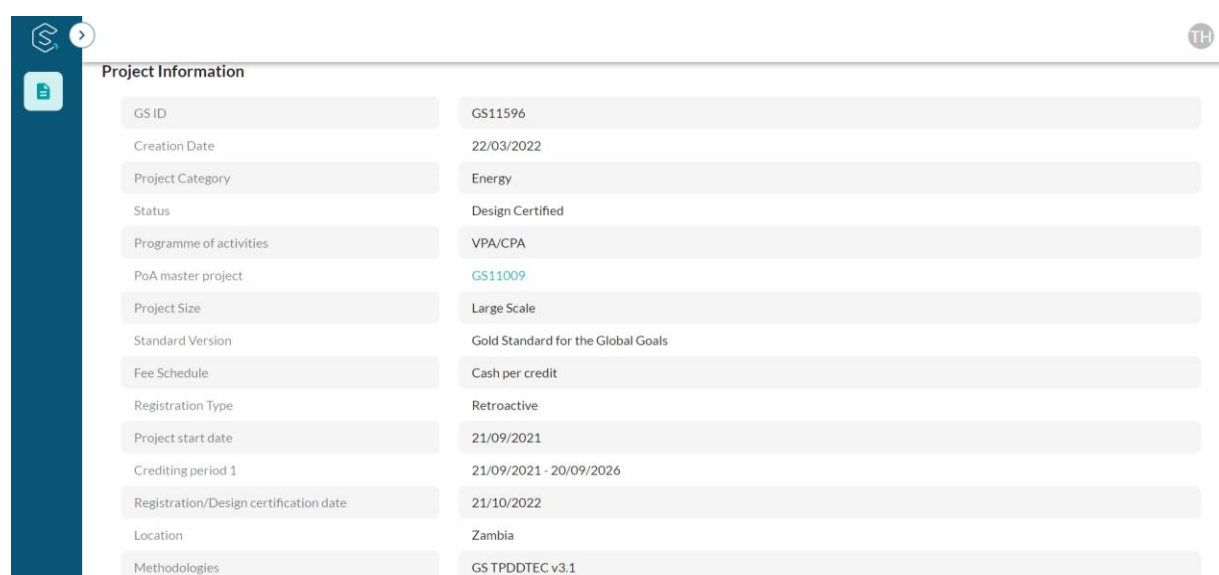
Description of CAR

Under Key Project Information, PP is requested to confirm design certification date with proof.

PP response

Date: 25/01/2023

Under “Key Project Information” of the MR the date of design certification is listed as 21/10/2022 which corresponds to the date listed on the Sustain-cert (SC) platform. Please see screenshot of the SC platform below, the date of design certification is next to the label “Registration/Design Certification Date”.



Project Information	
GS ID	GS11596
Creation Date	22/03/2022
Project Category	Energy
Status	Design Certified
Programme of activities	VPA/CPA
PoA master project	GS11009
Project Size	Large Scale
Standard Version	Gold Standard for the Global Goals
Fee Schedule	Cash per credit
Registration Type	Retroactive
Project start date	21/09/2021
Crediting period 1	21/09/2021 - 20/09/2026
Registration/Design certification date	21/10/2022
Location	Zambia
Methodologies	GS TPDDTEC v3.1

Documentation provided by PP

VVB assessment

Date:

In reference to the evidence submitted by the Project Proponent, VVB has concluded the confirmation of the design certification. Thus, CAR04 is closed.

CAR ID 04

Section no. D.4 in MR

Date: 25/01/2023

Description of CAR

In the section D.4 of the MR, under user habit survey, PP is requested to submit the Evidence on the positive feedback submitted by the ICS users.

PP response

Date: 25/01/2023

Positive comments and stove likes can be found in column AF of the “User Habit Survey VPA 3 MP1” excel sheet. The column number has also been added in the MR as follows:

“Many positive comments (Column AF) were received on the stoves including:”

Documentation provided by PP	
User Habit Survey VPA 3 MP1	
VVB assessment	Date:
VVB has assessed that the PP has submitted the evidence for the Positive feedback submitted by the ICS user. Thus, CAR04 is closed.	

CAR ID	05	Section no.	E.6 in MR	Date: 25/01/2023
Description of CAR				
As per the Monitoring report template filling guidelines, PP has to provide justification for the increase in SDG-12 under the section- E.6.				
PP response				Date: 25/01/2023
The incorrect values for SDG 12 were filled into the columns, the B _{p,y,j} values instead of the B _{y,savings} values were inserted in section E.5. The correct values are 4.8919 (tonnes/year) for Ex-Ante and 4.6650 (tonnes/year) for Ex-Post. Thus, the monitored project values is lower than the Ex-Ante value and no justification is required in section E.6. The values have been updated in section E.5.				
Documentation provided by PP				
VVB assessment				Date: 28/01/2023
VVB has assessed that the PP has provided the corrects values of the SDG parameter – 12 in the section E.5 and also indicated a description on the section E.5.1 of the MR. Thus, CAR05 is closed.				

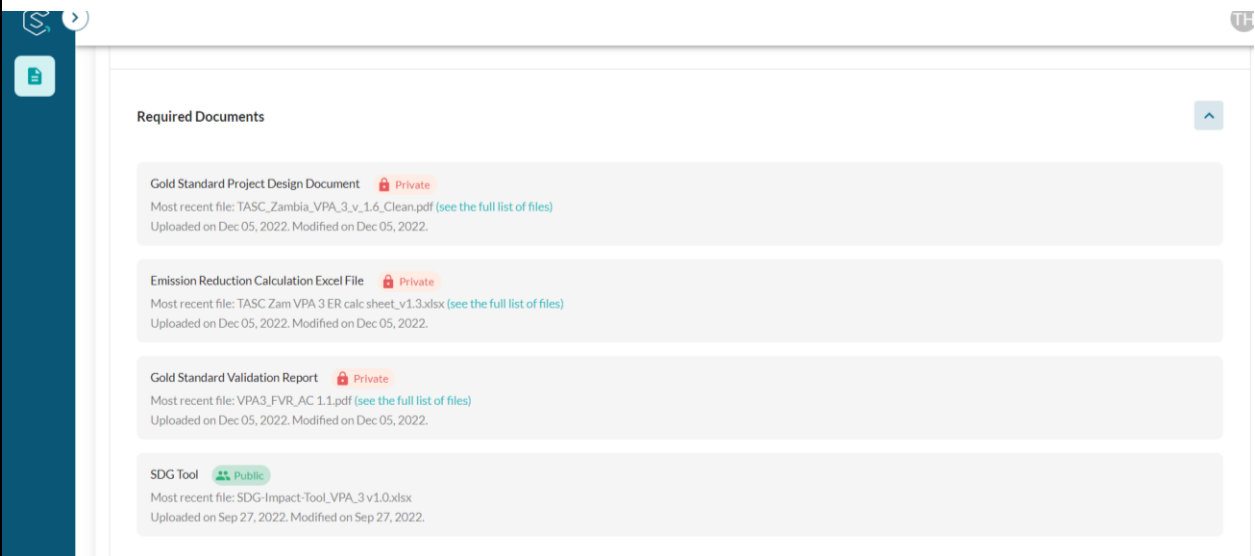
Table 3. CL from this verification

CL ID	01	Section no.	G in MR	Date: 25/01/2023
Description of CL				
Under the section G of the MR, PP to submit the photographic proof of grievance book being located at TASC's project office in Katete.				
PP response				Date: 25/01/2023
Photographic proof of the grievance book located in Katete has been added into section.				
Documentation provided by PP				
VVB assessment				Date: 28/01/2023
VVB has assessed that the PP has submitted the photographic proof of grievance book being located at TASC's project office in Katete. Thus, CL01 is closed.				

CL ID	02	Section no.	F in MR	Date: 25/01/2023
Description of CL				
PP to provide the details of risk, how they are mitigating it and the risk is mitigated or not, same needs to be added under the Section F of the MR.				
PP response				Date: 25/01/2023
A table has been added to Section F to clarify the mitigation approach to Safeguarding risks identified in the PDD.				
Documentation provided by PP				
VVB assessment				Date: 28/01/2023
VVB has assessed that the PP has clearly defined about the risk identified and actions to mitigate the risk.				

Thus, CL02 is closed.

CL ID	03	Section no.	E.1 in MR	Date:	25/01/2023
Description of CL					
In the section E.1 of the MR, under SDG 13 – Baseline emission calculation, Mention the calculation and final values of ER _{b,p,y,CO2} and ER _{b,p,y,non-CO2} . Final values are not in line with ER sheet. Thus, PP is requested to correct it.					
PP response					Date: 25/01/2023
Values have been amended to 8.8646 tCO2 for ER _{b,p,y,CO2} and 2.9485 tCO2 for ER _{b,p,y,nonCO2} as reflected in cells I18 and I19 of the “Ex-Post VPA 3” tab in “TASC VPA3 MP1 ER calc sheet v1.1”. Please note that the values in cells I18 and I19 are the discounted ER’s per stove adjusted according to the 90% usage rate and 0% leakage.					
Documentation provided by PP					
TASC VPA3 MP1 ER calc sheet v1.1.xlsx					
VVB assessment					Date: 28/01/2023
VVB has assessed that the values of the parameter ER _{b,p,y,CO2} and ER _{b,p,y,non-CO2} are now found to be consistent with the ER sheet calculation. Thus, CL03 is closed.					

CL ID	04	Section no.	Key Project Information	Date:	25/01/2023
Description of CL					
Under the Key project information, the VPA- DD version available on the SustainCERT database is not matching with the MR. Please clarify it.					
PP response					Date: 25/01/2023
The publicly available version of the VPA-DD is version 1.4, however the last version of the VPA-DD submitted to Sustain-cert for the last round of review was “TASC_Zambia_VPA_3_v_1.6_Clean”. Thus, version 1.6 is the corresponding design reviewed VPA-DD. Please see the below screenshot of the SC platform.					
					
Documentation provided by PP					
VVB assessment					Date: 28/01/2023
In reference to the evidence submitted by the Project Proponent, VVB has assessed that the PP has submitted the last version of the VPA-DD submitted to Sustain-cert. Thus, CL04 is closed.					

CL ID	05	Section no.	G in MR	Date: 25/01/2023
Description of CL				
In the section G of the Monitoring Report, PP is requested to clarify whether they have conducted any stakeholder feedback round.				
PP response				Date: 25/01/2023
Language on the LSC and stakeholder feedback round have been added to the MR in section G. The stakeholder consultation was held on 19/05/2022 and the stakeholder feedback round was held from 27/06/2022 to 27/08/2022. The LSC report was first submitted to SC on 04/01/2023.				
Documentation provided by PP				
"TASC GS11009 -Stakeholder-Consultation-Report Zambia_v1.0"				
VVB assessment				Date: 28/01/2023
VVB has assessed that the Local Stakeholder Consultation was conducted and subsequent evidence has been submitted by the PP to the verification team. Thus, CL05 is closed.				

Annex 1: Assessment of data and parameters fixed ex-ante at the time of validation

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$B_{b,y}$
Data unit	Tonnes per household per annum
Default values used	6.4427 tonnes
Purpose of data	Calculation of the baseline scenario
Source of verification of the source	Baseline Kitchen Performance Tests (KPTs)

Relevant SDG Indicator	SDG 13, Climate action
Parameter	EF_{b,i,CO_2}
Data unit	tCO_2/t_{fuel}
Default values used	Fuelwood: 1.68 tCO_2/t_{fuel}
Purpose of data	Calculation of baseline scenario
Source of verification of the source	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

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$EF_{b,i,nonCO_2}$
Data unit	tCO_2/t_{fuel}
Default values used	Fuelwood: 0.5588 tCO_2/t_{fuel}
Purpose of data	Calculation of baseline scenario
Source of verification of the source	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.9 – Residential Source Emission Factors, The Gold Standard Simplified methodology for Efficient Cookstoves, February 2013, ER_calculation_Tool_cookstove_Meth_V2.00 Summary of the methodology

Relevant SDG Indicator	SDG 13, Climate action
Parameter	EF_{p,i,CO_2}
Data unit	tCO_2/t_{fuel}
Default values used	Fuelwood: 1.68 tCO_2/t_{fuel}
Purpose of data	Calculation of Baseline scenario
Source of verification of the source	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

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$EF_{p,i,nonCO_2}$

Data unit	tCO ₂ /t _{fuel}
Default values used	Fuelwood: 0.5588 tCO ₂ /t _{fuel}
Purpose of data	Calculation of the baseline scenario
Source of verification of the source	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.9 – Residential Source Emission Factors, The Gold Standard Simplified methodology for Efficient Cookstoves, February 2013, ER_ calculation_ Tool_ cookstove_ Meth_ V2.00 Summary of the methodology

Relevant SDG Indicator	SDG 13, Climate Action
Parameter	NCV _{b,i}
Data unit	TJ/tonne
Default values used	Fuelwood: 0.015 TJ/ tonnes
Purpose of data	Calculation of the baseline scenario
Source of verification of the source	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 1: Introduction, Table 1.2- Default net calorific values

Relevant SDG Indicator	SDG 13, Climate Action
Parameter	NCV _{p,i}
Data unit	TJ/tonne
Default values used	Fuelwood: 0.015 TJ/ tonnes
Purpose of data	Calculation of the baseline scenario
Source of verification of the source	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 1: Introduction, Table 1.2- Default net calorific values

Relevant SDG Indicator	SDG 13, Climate Action
Parameter	f _{NRB,b,i,y}
Data unit	Fraction of non- renewable biomass used in the baseline
Default values used	Fuelwood: 0.91 Renewable solid biomass fuels (Crop residues/ cow dung): 0.0000 Fossil fuels: 1
Purpose of data	Calculation of the baseline scenario
Source of verification of the source	PDD (C4 EcoSolutions study)

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	1.7776
Verified Source of Data	Field Performance Tests (FPTs) from VPA 1
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
Does 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):	$U_{p,y}$
Unit	Fraction (or %)
Measuring frequency/Time Interval:	Annual
Reported value	90%
Verified Source of Data	Annual usage survey
Is measuring and reporting frequency	Yes

in accordance with the monitoring plan and monitoring methodology? (Yes / No)	
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does 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):	N _{p,y}
Unit	Number
Measuring frequency/Time Interval:	Continuous
Reported value	32,625
Verified Source of Data	Monitoring Database
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
Does 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	NA

possible been applied or has a request for deviation been approved?	
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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):	LE _{p,y}
Unit	Tonnes of CO2 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
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
Does 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	32,625 ICS in use
Verified Source of Data	1. Monitoring Database ICS distribution records 2. Ex-post monitoring Survey Records
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
Does 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
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
Does 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 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	98%
Verified Source of Data	Ex- post Monitoring Survey Records
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
Does 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 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	32,625 ICS
Verified Source of Data	ICS Monitoring Database
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	NA

registered PDD:	
Does 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	25
Verified Source of Data	Employment Records
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
Does 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:	Updated every 2 years
Reported value	4.6650 tonnes
Verified Source of Data	KPT survey data from VPA 1
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
Does 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