



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

<b>BASIC INFORMATION</b>	
<b>Title and GS reference number of the project activity</b>	Gyapa Cook Stoves Project in Ghana (GS407)
<b>Scale of the project activity</b>	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
<b>Version number of the verification and certification report</b>	03
<b>Completion date of the verification and certification report</b>	31/08/2023
<b>Monitoring period number and duration of this monitoring period</b>	04 01/09/2020 – 16/06/2022 (both days included)
<b>Version number of the monitoring report to which this report applies</b>	03; Dated 28/08/2023
<b>Crediting period of the project activity corresponding to this monitoring period</b>	17/06/2015 to 16/06/2022
<b>Project representative(s)</b>	ClimateCare Limited
<b>Host Party</b>	Ghana
<b>Applied methodologies and standardized baselines</b>	GS Methodology “Technologies and Practices to Displace Decentralized Energy Consumption (TPDDTEC)”- (version 2.0)
<b>Mandatory sectoral scopes</b>	03
<b>Conditional sectoral scopes, if applicable</b>	-
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD</b>	1,014,523 tCO <sub>2</sub> e
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period</b>	1,345,890 tCO <sub>2</sub> e
<b>SDG Impacts:</b>	1. SDG 1: No poverty 2. SDG 3: Good health and wellbeing 3. SDG 8: Decent work and Economic Growth 4. SDG 13: Climate Action
<b>Name and UNFCCC reference number of the DOE</b>	E-0052: Carbon Check (India) Private Ltd.

**Name, position and signature of the approver of the verification and certification report**



Vikash Kumar Singh, Compliance Officer

## **SECTION A. Executive summary**

Carbon Check (India) Private Ltd. (CC IPL) is performing the fourth periodic verification of the GS project "Gyapa Cookstoves Project in Ghana" (GS project id: GS 407) for the period 01/09/2020 – 16/06/2022. The project will stimulate the installation of Gyapa Model improved efficient charcoal stoves manufactured by Relief International (RI), with a thermal efficiency of 10- 15%. The stoves were distributed from 2007 in Greater Accra and Ashanti regions and gradually moved to other regions of Ghana.

According to the PDD /B03/ & MR /02/, the project "Gyapa Cook Stoves Project in Ghana " is part of the Relief International (RI) in association with Sustainable Development and Relief Associates (SUDRA). The overall objective of the project is to contribute to the achievement of the Sustainable Development Goals (SDGs) through the distribution of Improved Cookstoves (ICS) in households of Ghana.

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 "Gyapa Cook Stoves Project" in the host country "Ghana" for the period 01/09/2020 – 16/06/2022.

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. CC IPL'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 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 PDD and the approved monitoring methodology.

### **Scope:**

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered PDD
- To verify the implemented monitoring plan with the registered PDD 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 01/09/2020– 16/06/2022 and based on the registered PDD 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/ revised approved PDD /B03/. 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.

<b>Vintage</b>	<b>ER (tCO<sub>2</sub>e)</b>
01/09/2020 – 31/12/2020	251,068 tCO <sub>2</sub> e
01/01/2021 – 31/12/2021	751,147 tCO <sub>2</sub> e
01/01/2022 – 16/06/2022	343,675 tCO <sub>2</sub> e
Total for the monitoring period	<b>1,345,890 tCO<sub>2</sub>e</b>

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**

<b>No</b>	<b>Role</b>	<b>Type of resource</b>	<b>Last name</b>	<b>First name</b>	<b>Affiliation</b> (e.g. name of central or other office of DOE or outsourced entity)	<b>Involvement in</b>			
						<b>Desk/document review</b>	<b>On-site inspection</b>	<b>Interviews</b>	<b>Verification findings</b>
1.	Team Leader / Verifier / Technical Expert / Local Expert	IR	Dimri	Anubhav	CC IPL	X	X	X	X

2.	Trainee Assessor	IR	R	Saranya <sup>1</sup>	CC IPL	X	X	X	X
3.	Local Expert	EI	Mensah	Isaac	CC IPL		X	X	
4.	Local Expert	EI	Mensah	Bernard	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 DOE or outsourced entity)
1.	Technical reviewer	IR	C	Indumathi	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

**Anubhav Dimri:** is an appointed Team Leader. He holds a Post Graduate Diploma in Industrial Safety and Environmental Management. He is a trained GHG Lead Auditor. He has 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, 8.1 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 14 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 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 DOE webinar trainings including training on GS4GG.

R Saranya: She is a Trainee Assessor at Carbon Check (India) Private Limited.

<sup>1</sup> Till 23/02/2023 only

Isaac Mensah: is a local expert for Ghana and speaks the local languages of Ghana as well as English.

Bernard Agyen Mensah: is a local expert for Ghana and speaks the local languages of Ghana 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 and local experts have 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/B05/ 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/B05/. In accordance with the §9.4.1 of the GS4GG Validation and Verification Standard, v1, VVB has conducted the onsite visit in accordance with the registered PDD/B06-2/.

### C.3. Interviews

SI No	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
/01/	Atsu	Titiati	SUDRA	29/01/2023 to 01/02/2023	Details of survey, methodology, Survey results, QA/QC procedure etc.	Anubhav Dimri, R Saranya
/02/	Addo Aryitey	Gloria	SUDRA	29/01/2023 to 01/02/2023	Details and results of the survey	Anubhav Dimri, R Saranya
/03/	Gakii	Sally	Climate Impact Partners	29/01/2023 to 01/02/2023	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, R Saranya
/04/	Clemmey	Martin	Relief International	29/01/2023 to 01/02/2023	Stove Manufacturing Process	Anubhav Dimri,

						R Saranya
/05/	Kamous Divi	Mohammed	SUDRA/ RI	29/01/2023 to 01/02/2023	Procedures of the survey	Anubhav Dimri, R Saranya
/06/	Agoe Armah	Thomas	SUDRA/ RI	29/01/2023 to 01/02/2023	Implementation of the project	Anubhav Dimri, R Saranya
/07/	Prempeh	Jeff	SUDRA/ RI	29/01/2023 to 01/02/2023	Distribution of the stoves	Anubhav Dimri, R Saranya
/08/	Hagar	S. Twumasi	SUDRA/ RI	29/01/2023 to 01/02/2023	Procedures of the survey	Anubhav Dimri, R Saranya
/09/	Quaye	Willehmina	SUDRA/ RI	29/01/2023 to 01/02/2023	Manufacturing of the stoves	Anubhav Dimri, R Saranya
/10/	Suwnomah	Rukaya	SUDRA/ RI	29/01/2023 to 01/02/2023	Maintenance of stove records	Anubhav Dimri, R Saranya
/11/	Dzata	Samuel	SUDRA/ RI	29/01/2023 to 01/02/2023	Maintenance of stove records	Anubhav Dimri, R Saranya
/12/	Schanodri	Albert	SUDRA/ RI	29/01/2023 to 01/02/2023	Distribution of the stoves	Anubhav Dimri, R Saranya
/13/	Agyeman	Kingsley	SUDRA	29/01/2023 to 01/02/2023	Implementation of the project	Anubhav Dimri, R Saranya
/14/	Mohammed	Abubakar	Time lag Survey participant	29/01/2023 to 01/02/2023	Time lag Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/15/	Emelia	Gabuzo	Time lag Survey Participant	29/01/2023 to 01/02/2023	Time lag Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/16/	Ganyo	Mercy	Time lag Survey Participant	29/01/2023 to 01/02/2023	Time lag Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/17/	Tetteh	Alice	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey Questionnaire	Anubhav Dimri R Saranya Bernard Agyen Mensah
/18/	King	Alice	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/19/	Awotwe	Ama	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri R Saranya Bernard

						Agyen Mensah
/20/	Williams	Elizabeth	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/21/	Cecilia	Adwoa	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/22/	Peterson	Helena	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri R Saranya Bernard Agyen Mensah
/23/		Joseph	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey Questionnaire	Anubhav Dimri R Saranya Bernard Agyen Mensah
/24/	Baidoo	Perpetual	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey Questionnaire	Anubhav Dimri R Saranya Bernard Agyen Mensah
/25/	Janet	Gakpetor	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey Questionnaire	Anubhav Dimri R Saranya Bernard Agyen Mensah
/26/		Emelia	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey Questionnaire	Anubhav Dimri R Saranya Bernard Agyen Mensah
/27/	Sarpomaa	Akua	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah
/28/	Saadia	Hajia	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time lag Survey	Anubhav Dimri Isaac Mensah
/29/	Ruth	Sister	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/30/	Tetty	Constance	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah
/31/	Obeng	Grace	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah
/32/	Koom	Mary	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah



/33/	Ohene Danso Annan	Mary	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/34/	Haruna	Ruhaina	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/35/	Kumi	Esther	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/36/	Haruna	Jamilatu Ayishatu	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/37/	Akuley	Georgina	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/38/	Abigail	Madam	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/39/	Adjololo	Kafui	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah
/40/	Ehun	Monica	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah
/41/	Dosu	Felicia	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/42/	Laurentia (Delsi Montesson school)	Madam	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/43/		Matilda	Time Lag Survey Participant	29/01/2023 to 01/02/2023	Time Lag Survey	Anubhav Dimri Isaac Mensah
/44/	Otoppabea	Janet	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/45/	Rose	Sarpong	Habit Survey Participant	29/01/2023 to 01/02/2023	Habit Survey	Anubhav Dimri Isaac Mensah
/46/	Perfect	Lewu	KPT Survey Participant	29/01/2023 to 01/02/2023	KPT Survey	Anubhav Dimri Isaac Mensah

#### C.4. Sampling approach

As the target population is non-homogeneous, PP has proposed stratified random sampling plan using 90/30 as confidence/precision. This is in line with the applied methodology /B01/. 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 /B04/ in accordance with the paragraph 25 of the sampling standard.

In line with paragraph 26 of the Sampling Standard, the verification team has applied stratified 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 /12/, conducted by the representatives of project participant. The verification team has chosen stratified random sampling in accordance with paragraph 26 of the sampling standard, version 09 /B04/.

Applying paragraph 39 (c) of the sampling standard, version 09 /B04/, a sample size of 11 households was chosen (with no discrepant records) for Usage & Monitoring Surveys, KPT Surveys and Time Lag surveys respectively. A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk 10% and consumer risk of 10% each in determining the DOE's sample size Acceptance number (c) thus determined for the sample is 0. However, DOE interviewed 11 samples from the quarterly usage and monitoring survey done by project participants.

The information provided in the monitoring survey /05/, has been cross checked during the Onsite visit. As a part of stratified 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 § 33 of the sampling standard, version 09 /B04/.

Parameter	Verification approach	Population (for DOE's sample)	DOE's Sample Size
Usage & monitoring surveys	Acceptance Sampling	215 (Q1) 234 (Q2)	11
KPT Surveys	Acceptance Sampling	224	11
Time Lag Surveys	Acceptance Sampling	304	11

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 11 samples for Usage & Monitoring surveys and Time Lag Surveys 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) /B04/. 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. The 11 KPT survey households also confirmed that the KPT Surveys were conducted in the households and the results were cross-checked with the households. No discrepant records were observed by the verification team and thus c=0 is met.

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

The VVB had raised 03 clarifications (CLs) and 09 corrective action requests (CARs) during the verification and all the findings are satisfactorily closed.

**SECTION D. Verification findings**

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

N/A

**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. The reported fourth monitoring period (2<sup>nd</sup> crediting period) is from 01/09/2020 to 16/06/2022 and is consecutive to the third monitoring period from 01/02/2019 to 31/08/2020. The monitoring report provided complies with the requirements of the §9.4.2 to §9.4.4 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/. The monitoring report has been provided in the latest applicable template/B06-4/.

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 year of stove distribution is 2007 which is confirmed from the registered/ revised approved PDD /B03/ and validation report /B03/. The project boundary in the registered/ revised approved PDD /B03/ 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. The first ICS's distribution was commissioned from 2007. A total of 2,353,046 cookstoves have been distributed in the project activity till the end date of the monitoring period. A total of 1,158,903 stoves are active (113,192 small stoves and 1,045,711 medium stoves) during the reported monitoring period. No commercial stoves are considered in the project activity. Project proponent has provided a response to FAR03 to clarify the scenario. The project started in 2007 and was registered with GS on 15/06/2010. The project was renewed for the second crediting period from 17/06/2015 to 16/06/2022. The active production of the production site under PP's control started on:

Akom, Kumasi Cluster – 01/08/2019

Mobole, Ashiaman Cluster – 01/10/2019

Papase, Accra Cluster – 01/05/2020

Thus, the project activity complies with the §9.4.5 to §9.4.7 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.

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 2.0) /B01/. The project activity thus complies with the requirements of the §9.4.10 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.

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 comply with the project design document /B03/.

Verification team has checked the information in the monitoring report /02/ and compared it against the registered/ revised approved PDD /B03/ and found to be consistent.

Verification team confirms that:

a) The project activity is implemented as per registered/ revised approved PDD/B03/.

	<p>b) The actual operation of the proposed project activity is in line with the registered/revised PDD /B03/.</p> <p>c) It has reviewed the registered/ revised approved PDD /B03/ 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.</p> <p>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.</p> <p>In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised PDD /B03/.</p>
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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 documents<sup>2</sup>**

A temporary deviation (COVID\_DEV 303)/04/ has been applied by the project participant. The required frequency of kitchen performance tests is every two years, usage survey is annually, survey on perceived air quality is quarterly and equivalent monitory savings is quarterly. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters.

FAR for VVB:

The verifying VVB shall, using the means and measures at their disposal, ensure that the emission reduction calculation is conservative for the monitoring period 01/09/2020 to 16/06/2022.

PP has provided the fuel savings results for the monitoring periods during the crediting period and has applied conservative estimates for each stratum of stoves to the results in the previous monitoring period (01/02/2019 to 31/08/2020). A deduction on the over-issued credits has been provided in the section B.2.1 of the MR/02/. This approach is acceptable to the verification team as the project uses conservative estimates.

**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**

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<sup>2</sup> 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).

The project underwent a design change where the number of units being credited by the project was increased to reflect the actual happening with the project. The design change was approved by the GS on 23/11/2020.

#### 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

<b>Means of verification</b>	Document Review, Interview		
<b>Findings</b>	CAR 03 had been raised in this regard and has been resolved.		
<b>Conclusion</b>	Verification team confirms that the monitoring plan contained in the revised approved PDD/B03/ of 07/09/2020 is in accordance with the approved methodology applied by the project activity, i.e. TPDDTEC (version 02)/B01/.		
	<b>Verification Requirements</b>	<b>Criteria fulfilled</b>	<b>Assessment by the verification team</b>
	Any Deviation been sought and approved by GS for the project.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No revision in Monitoring Plan is sought.
	Is complete set of data for the specified monitoring period is available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Complete set of data (including the survey records) for the reported monitoring period was provided by the PP and found to be appropriate.
	Is the required information provided in the monitoring report has been cross-checked with other sources (ex – plant logbooks, inventories, purchase records, laboratory analysis)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>Verification team has verified the data submitted by PP during the remote audit inspection and document review. Randomly selected samples of cookstoves (end users) were checked and all the relevant information was verified, including the interview of the local end users. End user details/09/ containing all the required mentioned information, e.g. project logo (Gyapa), date of sale, name of the end users etc. were verified and found to be appropriate.</p> <p>Assessment of sampling/survey done has been discussed in sec. 2.3 above.</p>
	Is the calculation of baseline emissions and project activity emissions and leakage been in accordance with the formulae and methods described in monitoring plan and the applied methodology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The formulae and methods used in calculation of emission reduction are consistent with the registered/ revised approved PDD/B03/ and the applied GS methodology/B01/.
	Is all assumptions used for emission calculation have been justified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the assumptions used for emission calculation were justified in the MR, and registered/ revised approved PDD/B03/.
	Is appropriate emission factors, IPCC default values and other reference	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Default values taken in the calculation of the ERs are cross-verified from the registered/ revised approved PDD/B03/ and found to be appropriate.

	values have been correctly applied?		
	Does the monitoring methodology provides any provision of verification for parameters other than monitoring of GHG data and shall be specific to the applicability criteria of applied methodology.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA
<p>The sustainable development parameters have been reported correctly in the section D.2 of the monitoring report/02/. The sustainable development parameters have been monitored at the required frequency.</p> <p>Based on the above, verification team confirms that the monitoring plan contained in the registered/ revised approved PDD/B03/ is appropriately followed in the monitoring report/02/ by the project activity and also in accordance with the applied approved monitoring methodology, i.e., “Technologies and Practices to Displace Decentralized Thermal Energy Consumption”, TPDDTEC version 02/B01/.</p> <p>During the verification, all the relevant monitoring parameters (as listed in the revised approved PDD/B03/) have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.</p> <p>The monitoring plan is in compliance with the requirements of the Gold Standard conservative principle and complies with the requirements of the §9.4.10 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.</p>			

## 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

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	--
<b>Conclusion</b>	Verification team confirms that the data and parameters fixed ex ante are in compliance with the registered/ revised approved PDD /B03/ and monitoring plan. Please refer to the Annex 1 for assessment of each parameter.

### D.5.2. Data and parameters monitored

<b>Means of verification</b>	Document Review, Interview		
<b>Findings</b>	CAR 05 & CL 01 had been raised in this regard.		
<b>Conclusion</b>	<b>Verification Requirements</b>	<b>Criteria fulfilled</b>	<b>Assessment by the verification team</b>
	Any Revision in Monitoring plan is sought and approved by EB for the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No revision in Monitoring Plan is sought.



	<p><b>Does the monitoring report provide a line diagram showing all relevant monitoring points?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Line diagram for monitoring point is not applicable as the project monitoring is based on the sales data of cookstoves and survey report.</p> <p>There is no monitoring equipment applied as per registered/ revised approved PDD/B03/ and the applied methodology/B01/.</p>
	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the registered/ revised approved PDD/B03/.</p> <p>During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement method and applied QA/QC procedures. According to the methodology, a Total Sales Record, End-User Database, Retailer Database, and Project Database are maintained/09/.</p> <p>The verification team reviewed the monitoring plan in the PDD/B03/ and compared it against the requirements of the applied methodology/B01/ and confirms that appropriate provisions are included for the monitoring and reporting procedures, data management, and QA/QC procedures, including maintaining the detailed customer database and project database and found in line with the requirements of the §9.4.14 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.</p> <p>The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology/B01/, the revised approved PDD/B03/. The PP has appropriately performed simple random sampling procedure and is in line with the applied methodology/B01/. Since, the type of the stove used for the monitoring period is homogeneous during the monitoring period, simple random sampling used is considered the most appropriate sampling method. This is in compliance with the sampling standard/B04/.</p> <p>Verification team confirms that the sampling conducted by the PP is in conformance with the requirements of §24 of EB 105 Annex 1/B04/. Verification team reviewed the sampled households and confirms that the end users have been selected at random and without any bias. Furthermore, based on the review of the ex-post quarterly monitoring survey record /14//05//19/ verification team confirms that the sampling survey covered end users from the project boundary of the project activity. Thus, the survey design covers the region of distribution of the population (within the geographical boundary) and is representative in nature. The sample size calculation for monitoring of parameters is presented in the Gyapa KT Report/11/.</p> <p>The verification team thus confirms that the sampling plan ensures that:</p> <ul style="list-style-type: none"> <li>• The samples are randomly selected</li> <li>• The samples are representative of the population</li> </ul> <p>The sampling survey has been carried out in the supervision of Gloria Addo-Aryitey, monitoring manager of the Relief International, this is in accordance with the roles and responsibilities as provided in the PDD/B03/. Training records have been provided to the verification team/06/.</p> <p>Carbon Check confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions or misstatements.</p> <p>The assessment of monitored parameters is provided in the <b>Annex 2</b> of this report.</p> <p>Verification team confirms that:</p> <ol style="list-style-type: none"> <li>a) The monitoring has been carried out in accordance with the registered monitoring plan.</li> </ol>		

	<p>b) All the parameters required by the registered monitoring plan are assessed in the Annex 2 of this report.</p> <p>Overall, the monitoring plan complies with the §9.4.12 to §9.4.14 and §9.4.17 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.</p>
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**D.5.3. Implementation of sampling plan**

<b>Means of verification</b>	Document Review, Interview																
<b>Findings</b>	CAR01 had been raised in this regard and has been resolved.																
<b>Conclusion</b>	<p>According to the standard for sampling and survey /B04/ and related guidelines /B04/ the sampling plan was determined at the time of project registration and applied during the monitoring. Sampling method: Stratified random sampling method is adopted as the target population is non-homogeneous. The sample size is determined by the requirement to achieve 90/30 precision, in line with the methodology for annual survey. Sampling approaches may follow the Guideline “Sampling and surveys for CDM project activities and programme of activities” for calculation of sample size. Data to be collected: Number of project devices of type i and operating in year y. Implementation plan: Annual or biennial. Actual implementation: - Sampling method: The sample size included all households and was randomly sampled from a list of all the project cookstoves in the project for each state separately. The target population is the 1,158,903 ICSs during the monitoring period. The sampling frame is homogenous within itself, with respect to service level, established ex-ante baseline and user characteristics. PP has determined target sample numbers for each survey as:</p> <table border="1" data-bbox="509 925 1414 1209"> <thead> <tr> <th>Parameter</th> <th>Verification approach</th> <th>Population (for DOE's sample)</th> <th>DOE's Sample Size</th> </tr> </thead> <tbody> <tr> <td>Usage &amp; monitoring surveys</td> <td>Acceptance Sampling</td> <td>215 (Q1) 234 (Q2)</td> <td>11</td> </tr> <tr> <td>KPT Surveys</td> <td>Acceptance Sampling</td> <td>224</td> <td>11</td> </tr> <tr> <td>Time Lag Surveys</td> <td>Acceptance Sampling</td> <td>304</td> <td>11</td> </tr> </tbody> </table> <p>In line with paragraph 26 of the Sampling Standard, the verification team has applied stratified 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 /12/, conducted by the representatives of project participant. The verification team has chosen stratified random sampling in accordance with paragraph 26 of the sampling standard, version 09 /B04/.</p> <p>Applying paragraph 39 (c) of the sampling standard, version 09 /B04/, a sample size of 11 households was chosen (with no discrepant records) for Usage &amp; Monitoring Surveys, KPT Surveys and Time Lag surveys respectively. A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk 10% and consumer risk of 10% each in determining the DOE's sample size Acceptance number (c) thus determined for the sample is 0. However, DOE interviewed 11 samples from the baseline survey done by project participants.</p> <p>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 11 samples for Usage &amp; Monitoring surveys and Time Lag Surveys 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) /B04/. 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 &amp; 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</p>	Parameter	Verification approach	Population (for DOE's sample)	DOE's Sample Size	Usage & monitoring surveys	Acceptance Sampling	215 (Q1) 234 (Q2)	11	KPT Surveys	Acceptance Sampling	224	11	Time Lag Surveys	Acceptance Sampling	304	11
Parameter	Verification approach	Population (for DOE's sample)	DOE's Sample Size														
Usage & monitoring surveys	Acceptance Sampling	215 (Q1) 234 (Q2)	11														
KPT Surveys	Acceptance Sampling	224	11														
Time Lag Surveys	Acceptance Sampling	304	11														



	<p>appropriately applied. The sampling technique to draw such samples were found adequate and the sample collectors were found competent to perform such task. The 11 KPT survey households also confirmed that the KPT Surveys were conducted in the households and the results were cross-checked with the households. No discrepant records were observed by the verification team and thus c=0 is met.</p> <p>Overall, the sampling plan complies with the §9.4.15 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.</p>
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#### D.6. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	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

<b>Means of verification</b>	Document Review, Interview																				
<b>Findings</b>	-																				
<b>Conclusion</b>	<p>VVB has assessed that the emission reductions realized by the project during this monitoring period are calculated based on the fuel saving by the project stoves compared with the baseline stove. As per the methodology: Technologies and Practices to Decentralized Energy Consumption (version 2.0), the baseline emission reduction is calculated by using the formula:</p> $ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,fuel} * (f_{NRB,b,y} * EF_{fuel,CO2} + EF_{fuel,non\ CO2})) - \sum LE_{p,y}$ <table border="1"> <tr> <td><math>ER_y</math></td> <td>Emission reduction per stove per year (tCO<sub>2</sub>e/year)</td> </tr> <tr> <td><math>\sum_{b,p}</math></td> <td>Sum over all relevant (project p) couples</td> </tr> <tr> <td><math>N_{p,y}</math></td> <td>Cumulative number of project technology – days included in the project database for project scenario p against baseline scenario b in year y</td> </tr> <tr> <td><math>U_{p,y}</math></td> <td>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)</td> </tr> <tr> <td><math>P_{p,b,y}</math></td> <td>Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests</td> </tr> <tr> <td><math>f_{NRB,b,y}</math></td> <td>Fraction of biomass used in year y for baseline scenario b that can be established as non- renewable biomass</td> </tr> <tr> <td><math>NCV_{b,fuel}</math></td> <td>Net Calorific Value of the fuel that is substituted or reduced. (IPCC default for charcoal fuel, 0.0295 TJ/ton)</td> </tr> <tr> <td><math>EF_{b,fuel,CO2}</math></td> <td>CO<sub>2</sub> emission factor for the fuel that is reduced. (IPCC default for charcoal fuel, 112 tCO<sub>2</sub>/TJ)</td> </tr> <tr> <td><math>EF_{b,fuel,non\ CO2}</math></td> <td>Non- CO<sub>2</sub> emission factor of the fuel that is reduced</td> </tr> <tr> <td><math>LE_{p,y}</math></td> <td>Leakage for project scenario p in year y (tCO<sub>2</sub>e/yr)</td> </tr> </table> <p>Overall, the GHG emissions calculations complies with the §9.4.25 to §9.4.27 of the GS4GG Validation and Verification Standard, version 1.0/B06-2/.</p>	$ER_y$	Emission reduction per stove per year (tCO <sub>2</sub> e/year)	$\sum_{b,p}$	Sum over all relevant (project p) couples	$N_{p,y}$	Cumulative number of project technology – days included in the project database for project scenario p against baseline scenario b in year y	$U_{p,y}$	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)	$P_{p,b,y}$	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests	$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non- renewable biomass	$NCV_{b,fuel}$	Net Calorific Value of the fuel that is substituted or reduced. (IPCC default for charcoal fuel, 0.0295 TJ/ton)	$EF_{b,fuel,CO2}$	CO <sub>2</sub> emission factor for the fuel that is reduced. (IPCC default for charcoal fuel, 112 tCO <sub>2</sub> /TJ)	$EF_{b,fuel,non\ CO2}$	Non- CO <sub>2</sub> emission factor of the fuel that is reduced	$LE_{p,y}$	Leakage for project scenario p in year y (tCO <sub>2</sub> e/yr)
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$LE_{p,y}$	Leakage for project scenario p in year y (tCO <sub>2</sub> e/yr)																				

##### D.7.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	As per the methodology: Technologies and Practices to Decentralized Energy Consumption (version 2.0), since the emission reductions by the project are calculated directly based on the fuel savings, there are no project emissions.

Project Emission (PE<sub>y</sub>)= 0 tCO<sub>2</sub>e.

### D.7.3. Calculation of leakage GHG emissions

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	--
<b>Conclusion</b>	<p>As per the monitoring report, the leakage associated with the project was determined during the KT survey to establish if they project is contributing to leakage.</p> <p>While carrying out the KT, the following parameters were assessed under leakage to confirm whether the project leads to:</p> <ol style="list-style-type: none"> <li>1. Increasing consumption of fuel associated with the introduction of higher efficiency stoves</li> <li>2. Use of high emission fuels either for cooking outside the project boundary as a result of the project</li> <li>3. Substitution of a cooking stove type with relatively high emissions by households who commonly use a cooking fuel or stove type with relatively lower emissions</li> <li>4. Respond to the loss of space heating effect of inefficient cook-stoves by adopting some other form of heating or by retaining some use of inefficient stoves</li> <li>5. The traditional stoves displaced may be re-used outside the boundary</li> </ol> <p>The impact of the use of traditional stoves has been accounted by the project proponent and thus the emission reductions have conservatively deducted emission reduction attributable to the baseline traditional stoves. A factor of 2.096% has been applied to account for the leakage emissions.</p>

### D.7.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	-
<b>Conclusion</b>	<p>The overall GHG reductions achieved by the project activity in year y are calculated as follows:</p> $ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,fuel} * (f_{NRB,b,y} * EF_{fuel,CO_2} + EF_{fuel,nonCO_2})) - \sum LE_{p,y}$ <p>Where:</p> <p><math>\sum_{b,p}</math> = Sum over all relevant (project p) couples</p> <p><math>N_{p,y}</math> = Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y</p> <p><math>U_{p,y}</math> = 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)</p> <p><math>P_{p,b,y}</math> = Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests</p> <p><math>f_{NRB,b,y}</math> = Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass</p> <p><math>NCV_{b,fuel}</math> = Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)</p> <p><math>EF_{b,fuel,CO_2}</math> = CO<sub>2</sub> emission factor of the fuel that is reduced. 112 tCO<sub>2</sub>/TJ for Wood/Wood</p> <p>Waste, or the IPCC default value of other relevant fuel</p> <p><math>EF_{b,fuel,nonCO_2}</math> = Non-CO<sub>2</sub> emission factor of the fuel that is reduced</p> <p><math>LE_{p,y}</math> = Leakage for project scenario p in year y (tCO<sub>2</sub>e/yr)</p> <p>Where:</p>

	$i$	= Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
	$j$	= Indices for the situation where there is more than one batch of project device
	$ER_y$	= Emission reductions during year $y$ in t CO <sub>2</sub> e
	$ER_{y,i,j}$	= Emission reductions by project device of type $i$ and batch $j$ during year $y$ in t CO <sub>2</sub> e
	$LE_y$	= Leakage emissions in the year $y$
Hence, resulted emission reduction for the monitoring period is 1,345,890 tCO <sub>2</sub> e.		

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

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	--
<b>Conclusion</b>	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered/ revised approved PDD /B03/ is 2,525,288 tCO <sub>2</sub> e and the actual emission reductions achieved for the monitoring period is 1,345,890 tCO <sub>2</sub> e.

SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period																		
13	<p>Estimated total number of operating stoves during the monitoring period: 983,032 Average emission reductions by stove size are as follows:</p> <table border="1"> <thead> <tr> <th>Size of Stove</th> <th>ERs/ Stove/ Year (tCO<sub>2e</sub>)</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>0.9244</td> </tr> <tr> <td>Medium domestic</td> <td>1.1784</td> </tr> </tbody> </table> <p>Total Estimated ERs: 2,525,288 tCO<sub>2e</sub></p>	Size of Stove	ERs/ Stove/ Year (tCO <sub>2e</sub> )	Small	0.9244	Medium domestic	1.1784	<p>Total number of operating stoves during the monitoring period: 1,158,903 Average emission reductions by stove size are as follows:</p> <table border="1"> <thead> <tr> <th>Size of Stove</th> <th>ERs/ Stove/ Year (tCO<sub>2e</sub>)</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>0.963</td> </tr> <tr> <td>Medium domestic</td> <td>1.064</td> </tr> </tbody> </table> <p>Total number of achieved ERs 1,345,890 tCO<sub>2e</sub></p>	Size of Stove	ERs/ Stove/ Year (tCO <sub>2e</sub> )	Small	0.963	Medium domestic	1.064						
Size of Stove	ERs/ Stove/ Year (tCO <sub>2e</sub> )																			
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1	<p>Average daily charcoal consumption by stove size:</p> <table border="1"> <thead> <tr> <th>Size of Stove</th> <th>Average Charcoal Consumption (Kgs/day)</th> <th>Monetary equivalent</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>1.972</td> <td>GHS 2.524</td> </tr> <tr> <td>Medium domestic</td> <td>2.391</td> <td>GHS 3.060</td> </tr> </tbody> </table>	Size of Stove	Average Charcoal Consumption (Kgs/day)	Monetary equivalent	Small	1.972	GHS 2.524	Medium domestic	2.391	GHS 3.060	<p>Average daily charcoal consumption by stove size:</p> <table border="1"> <thead> <tr> <th>Size of Stove</th> <th>Average Charcoal Consumption (Kgs/day)</th> <th>Monetary equivalent</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>1.48</td> <td>GHS 5.24</td> </tr> <tr> <td>Medium domestic</td> <td>1.55</td> <td>GHS 4.97</td> </tr> </tbody> </table>	Size of Stove	Average Charcoal Consumption (Kgs/day)	Monetary equivalent	Small	1.48	GHS 5.24	Medium domestic	1.55	GHS 4.97
Size of Stove	Average Charcoal Consumption (Kgs/day)	Monetary equivalent																		
Small	1.972	GHS 2.524																		
Medium domestic	2.391	GHS 3.060																		
Size of Stove	Average Charcoal Consumption (Kgs/day)	Monetary equivalent																		
Small	1.48	GHS 5.24																		
Medium domestic	1.55	GHS 4.97																		
3	High smoke generation when using baseline stove	Stove users reported that the stove is clean to use and does not spread ash and it produces less smoke and cooks faster. 97% of small stove users and 99% of medium stove users confirmed that there is smoke reduction when using the project stoves.																		
8	0 staff (no project)	The project has employed 25 staff directly under SUDRA and there are 241 manufacturers involved in stove production, 8 ceramists with 66 employees and 702 retailers.																		

The emission reduction calculations provided in the spreadsheet /04/ have been verified to be correct and in line with the registered/ revised approved PDD /B03/.

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

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	CAR 07 had been raised in this regard and has been resolved.
<b>Conclusion</b>	Estimated emission reduction in the PDD/B03/ and emission reduction reported in the MR/02/ for the monitoring period have been comprehensively assessed by the

	<p>verification team, through documents review /02/, /04/ and onsite visit interviews of the households /end users of project technology i.e., cook stoves.</p> <p>Verification team confirms the actual emission reduction is lower than the estimated ERs of the project activity for the reported monitoring period. However, the per unit value for small stoves is higher (by 15 %) and slightly lower for medium stoves (by 0.7%). The ERs claimed per stove for the small stoves has increased compared to the ex-ante estimates , this is because there is more charcoal savings as compared to the ex-ante estimates for small stoves since there is more fuel savings during the ex-post scenario as compared to the ex-ante estimates. The differences in estimated values versus the actual values has led to difference in emission reduction.</p> <p>SDG 1, 1.48 and 1.55 kilograms of charcoal per day for small and medium stoves respectively. This translates to an average monetary savings of GHS 5.24 for all small stove users and GHS 4.97 for all medium stove users.</p> <p>SDG 3, no baseline numbers were reported, however, the baseline stove generates smoke and it is untidy. During the project, stove users reported that the stove is clean to use and does not spread ash and it produces less smoke and cooks faster. 97% of small stove users and 99% of medium stove users respondents confirmed that they have experienced reduced smoke when using the project stove when compared with the baseline stove.</p> <p>SDG 8, the project has continued to expand and more people are involved in the stove chain and due to increase in stove production and sales, the number of people involved also increases. During this period the project has employed 25 staff directly under SUDRA and there are 241 manufacturers involved in stove production, 8 ceramists with 66 employees and 702 retailers.</p>
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#### D.7.7. Safeguarding Reporting

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	--
<b>Conclusion</b>	<p>The social, economic and environmental safeguards have been provided by the project participant in the MR/02/. The social safeguards with regards to 3.6.1, item 5 under Labour Rights has also been provided and the protective equipment has been provided to the stove manufacturers. VVB visited the production centers to check the compliance of the same.</p> <p>Overall, the project complies with the requirements in the §9.2.6 (g) and 9.4.14(v) of the GS4GG Validation and Verification Requirements version 1/B06-3/.</p>

#### D.7.8. Stakeholder Inputs and Legal Disputes

<b>Means of verification</b>	Document Review, Interview
<b>Findings</b>	--
<b>Conclusion</b>	<p>The list of inputs and grievances received during the monitoring period have been provided in the section G of the monitoring report/02/. The response to the grievances and issue resolution has also been provided.</p> <p>There are no stakeholder mitigations or any legal disputes from the project activity during the reported monitoring period. There are no updates to the stakeholder feedback mechanism grievance mechanism was implemented in accordance with the design certified/ revised approved PDD/B03/ and any feedback given by stakeholders as part of the project's grievance mechanism was recorded, suitably addressed and included in the MR.</p> <p>Overall, the project complies with the requirements in the §9.2.6 (g), §9.4.8, §9.4.9 and 9.4.14(v) of the GS4GG Validation and Verification Requirements version 1/B06-3/.</p>

## 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., the VVB, has performed the 4<sup>th</sup> performance certification of the project activity registered with the GS "Gyapa Cook Stoves Project in Ghana" and GS registry number GS407.

The project activity is designed to generate emission reductions by dissemination and use of efficient cook stoves, which minimises the fuel wood consumption and hence resulting in social benefits such as money savings, time saving and health benefits etc.

The project participant is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project. It is VVB's responsibility to express an independent verification statement on the reported GHG emission reductions from the project. The verification is carried out in-line with the VVS for project activities and Gold Standard for Global Goals requirements.

Verification was performed to identify the compliance of the project activity with the implementation and monitoring requirements and to verify the actual amount of achieved net emission reductions, through obtaining evidence and information and by conducting on-site visit that includes:

- i) To confirm whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and
- ii) To check the evidence supporting the reported data.

This statement covers the verification period from 01/09/2020 to 16/06/2022.

The VVB had raised 03 clarifications (CLs) and 08 corrective action requests (CARs) during the verification and all the findings are satisfactorily closed. 00 (Zero) forward action requests (FARs) have been raised. Three forward action requests raised in the previous performance certification have been listed as CARs and resolved by the project proponent.

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


The VVB, hereby certifies that the project activity, achieved net emission reductions of 1,345,890 tCO<sub>2</sub>e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records. The emission reductions for each of the vintages are:

<b>Vintage</b>	<b>Emission reductions (tCO<sub>2</sub>e)</b>
01/09/2020 – 31/12/2020	251,068
01/01/2021 – 31/12/2021	751,147
01/01/2022 – 16/06/2022	343,675
<b>Total</b>	<b>1,345,890</b>

## 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 <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
ER	Emission Reduction
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goals
ICS	Improved Cook Stoves
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MNRE	Ministry of Renewable Energy
MR	Monitoring Report
OSV	On Site Visit
PDD	Project Design Document
PE	Project Emissions
PP(s)	Project Participant(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
RI	Relief International
SDG	Sustainable Development Goals
SUDRA	Sustainable Development and Relief Association
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
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/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:



*for the following functions and requirements:*

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input checked="" type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Health Expert	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input checked="" type="checkbox"/> SDG+	<input checked="" type="checkbox"/> Social no-harm(S+)	<input checked="" type="checkbox"/> Environment no-harm(E+)	<input type="checkbox"/> CCB Expert
<input checked="" type="checkbox"/> Financial Expert	<input checked="" type="checkbox"/> Local Expert for India, South Africa and Spanish speaking countries		

*in the following Technical Areas:*

<input checked="" type="checkbox"/> TA 1.1	<input checked="" type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input checked="" type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input checked="" type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input checked="" type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input type="checkbox"/> TA 14.1	<input type="checkbox"/> TA 15.1			

<b>Issue Date</b> 1 <sup>st</sup> January 2023	<b>Expiry Date</b> 31 <sup>st</sup> December 2023
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 <b>Mr. Vikash Kumar Singh</b> Compliance Officer	 <b>Mr. Amit Anand</b> CEO
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CCIPL\_FM 7.9 Certificate of Competency\_V2.1\_012023





## Carbon Check (India) Private Limited

### Certificate of Competency

#### MENSAH ISAAC

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:*

- |   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Validator          | <input type="checkbox"/> Verifier                          | <input type="checkbox"/> Team Leader             | <input type="checkbox"/> Technical Expert     |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert                     | <input type="checkbox"/> Gender Expert           | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+               | <input type="checkbox"/> Social no-harm(S+)                | <input type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert           |
| <input type="checkbox"/> Financial Expert   | <input checked="" type="checkbox"/> Local Expert for Ghana |  |   |

*in the following Technical Areas:*

- |                                  |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> TA 1.1  | <input type="checkbox"/> TA 1.2  | <input type="checkbox"/> TA 2.1  | <input type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1  |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1  | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1  | <input type="checkbox"/> TA 8.1  |
| <input type="checkbox"/> TA 9.1  | <input type="checkbox"/> TA 9.2  | <input type="checkbox"/> TA 10.1 | <input type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1 |                                  |                                  |                                  |

Issue Date  
03<sup>rd</sup> May 2023

Expiry Date  
02<sup>nd</sup> May 2024

Mr. Vikash Kumar Singh  
Compliance Officer

Mr. Amit Anand  
CEO



## Carbon Check (India) Private Limited

### Certificate of Competency

#### Agyen Mensah Bernard

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:*

- |   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Validator          | <input type="checkbox"/> Verifier                          | <input type="checkbox"/> Team Leader             | <input type="checkbox"/> Technical Expert     |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert                     | <input type="checkbox"/> Gender Expert           | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+               | <input type="checkbox"/> Social no-harm(S+)                | <input type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert           |
| <input type="checkbox"/> Financial Expert   | <input checked="" type="checkbox"/> Local Expert for Ghana |  |   |

*in the following Technical Areas:*

- |                                  |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> TA 1.1  | <input type="checkbox"/> TA 1.2  | <input type="checkbox"/> TA 2.1  | <input type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1  |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1  | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1  | <input type="checkbox"/> TA 8.1  |
| <input type="checkbox"/> TA 9.1  | <input type="checkbox"/> TA 9.2  | <input type="checkbox"/> TA 10.1 | <input type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1 |                                  |                                  |                                  |

Issue Date  
03<sup>rd</sup> May 2023

Expiry Date  
02<sup>nd</sup> May 2024

Mr. Vikash Kumar Singh  
Compliance Officer

Mr. Amit Anand  
CEO



## 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:*

- |  |  |   |  |
|--|--|---|--|
| <input checked="" type="checkbox"/> Validator          | <input checked="" type="checkbox"/> Verifier                             | <input checked="" type="checkbox"/> Team Leader             | <input checked="" type="checkbox"/> Technical Expert |
| <input checked="" type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert                                   | <input type="checkbox"/> Gender Expert                      | <input type="checkbox"/> Plastic Waste Expert        |
| <input checked="" type="checkbox"/> SDG+               | <input checked="" type="checkbox"/> Social no-harm(S+)                   | <input checked="" type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert                  |
| <input checked="" type="checkbox"/> Financial Expert   | <input checked="" type="checkbox"/> Local Expert for India and Sri Lanka |   |  |

*in the following Technical Areas:*

- |  |  |                                  |   |   |
|--|--|----------------------------------|---|---|
| <input checked="" type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1  | <input checked="" type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1             |
| <input type="checkbox"/> TA 4. n           | <input type="checkbox"/> TA 5.1            | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1             | <input type="checkbox"/> TA 8.1             |
| <input type="checkbox"/> TA 9.1            | <input type="checkbox"/> TA 9.2            | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1           | <input type="checkbox"/> TA 15.1           |                                  |   |   |

Issue Date

1<sup>st</sup> January 2023

Expiry Date

31<sup>st</sup> 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 18/01/2023)
/02/	MR Final Version (Final Version) Version 03 dated 28/08/2023
/03/	<ol style="list-style-type: none"> <li>1. Emission reductions sheet (Corresponding to /01/</li> <li>2. Emission reductions sheet corresponding to /02/</li> </ol>
/04/	Deviation for Usage Surveys dated 06/11/2022 COVID_DEV003
/05/	<p>Quarterly Data Analysis for the monitoring period 01/09/2020 to 16/06/2022</p> <p>Quarterly Data Analysis for the monitoring period 01/08/2017 to 31/01/2019</p>
/06/	<ol style="list-style-type: none"> <li>1. Retailer Training records dated 11/03/2022</li> <li>2. Enumerator Training records dated 06/12/2021 and 25/04/2022</li> </ol>
/07/	Gyapa cookstove product leaflet / stove manual
/08/	Gyapa cookstove production and sales record
/09/	End User Data records and random number generator
/10/	Evidence for the start year of stove production
/11/	<p>KPT records:</p> <ul style="list-style-type: none"> <li>• Equipment: <ul style="list-style-type: none"> <li>○ Photographs of the equipment (Weighing Scale)</li> <li>○ Specifications of the equipment used</li> </ul> </li> <li>• KPT Reports</li> </ul>
/12/	<p>Usage Monitoring Survey:</p> <ul style="list-style-type: none"> <li>• Evidence for random number generator for sampling</li> </ul>
/13/	Quarterly Survey records
/14/	<p>Usage Rate Evidence for:</p> <ol style="list-style-type: none"> <li>1. Awareness Campaign</li> <li>2. End User Training and Follow Up</li> <li>3. Field Team Training and Supervision</li> </ol>
/15/	Daily fuel consumption records of households participating in Kitchen Test (KT)
/16/	Time Lag Survey
/17/	Sample copies of sales receipt / user agreement

## Background Documents

Ref no.	Reference Document
/B01/	Technologies and Practices to Displace Decentralized Energy Consumption (version 2.0)
/B02/	Community Services Activity Requirements (version 1.1) under GS4GG <a href="https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/">https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/</a>
/B03/	<ol style="list-style-type: none"> <li>1. PDD: <ol style="list-style-type: none"> <li>a. Registered PDD, Version 5.0 dated 25/01/2016 and Corresponding validation report.</li> <li>b. Revised approved PDD version 03 dated 07/09/2020 and corresponding validation opinion.</li> </ol> </li> <li>2. Monitoring Report and Verification Report for MP2 (01 August 2017 – 31 January 2019) – Version 04 dated 03/12/2019.</li> <li>3. Monitoring Report and Verification Report for MP3 (01 February 2019 – 31 August 2020) – Version 03 dated 03/03/2021</li> </ol>
/B04/	<p>Standards</p> <ol style="list-style-type: none"> <li>a) CDM Sampling Standard, version 09.0</li> <li>b) Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.</li> <li>c) CDM validation and verification standard for project activities, version 04.0</li> </ol>
/B05/	Site Visit and Remote Audit Requirements and Procedures, version 1.0 dated 17/11/2021 (valid at the time of the onsite visit)
/B06/	<ol style="list-style-type: none"> <li>1. Gold Standard Principles and Requirements version 1.2, dated 24/10/2019</li> <li>2. GS4GG Validation &amp; Verification Standard version 1.0, dated 06/03/2023</li> <li>3. Requirements and guidelines: Usage rate monitoring, v2.0</li> <li>4. GS4GG Monitoring Report template, version 1.1</li> </ol>

## Appendix 5. Clarification requests, corrective action requests and forward action requests

Table 1. FARs from this verification

<b>FAR ID</b>	xx	<b>Section no.</b>		<b>Date:</b>
<b>Description of CAR</b>				
NA				
<b>PP response</b>				<b>Date:</b>
<b>Documentation provided by the CME</b>				
<b>DOE assessment</b>				<b>Date:</b>

Table 2. CARs from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	B.1.1 in MR	<b>Date:</b> 07/02/2023
<b>Description of CAR</b>				
FAR01 from the previous verification: To ensure transparency of sampling process, the PP shall use the online number generator or other traceable techniques. The PP shall maintain the screenshots of random number generation/evidence for the random selection of households for monitoring surveys. All evidence shall be submitted together with the following request for issuances.				
<b>PP response</b>				<b>Date:</b> 15/03/2023
To ensure transparency of sampling process, the PP used a combination of an online number generator and an excel formular to identify the sample frame. Screen shots of the random number generator and the excel sheet formular are included in the excel sheet summary and submitted as evidence ( <i>ref Q1EnduserData_220302 samples and Q2 EnduserData_TSR_Sample frames and Replacements</i> ). A stepwise explanation on how the sample frame was selected is provided in section D.4 of the MR.				
<b>Documentation provided by PP</b>				
EnduserData_220302 samples and EnduserData_TSR_Sample frames and Replacements				
<b>VVB assessment</b>				<b>Date:</b> 31/03/2023
PP has provided the screenshots of the random number generator and the households selected as part of the sampling process. PP has also provided the details of the process in the section D.4 of the MR. CAR01 is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	B.1.1 in MR	<b>Date:</b> 07/02/2023
<b>Description of CAR</b>				
FAR02 from the previous verification: The PP is requested to carry out a study/ survey during the next monitoring period to analyse the period from the sale of the stove to final use by the end user.				
<b>PP response</b>				<b>Date:</b> 13/03/2023
The PP carried out a study/ survey and analysed the period from the sale of the stove to final use by the end user. Based on the survey the total number of days between sale date by manufacturer, through the retailer to 1st day of use by the end-users is 12.5 days ( <i>ref TL_Survey_Sep'22 tab analysis and ref TimeLag_Analysis_Gyapa_Oct12'22 final</i> )				
<b>Documentation provided by PP</b>				
TL_Survey_Sep'22				
<b>VVB assessment</b>				<b>Date:</b> 31/03/2023
PP has carried out the time lag surveys to record the from the sale of the stove to final use by the end user. The time lag survey participants were interviewed by the VVB during the onsite visit. CAR02 is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>	B.1.1 in MR	<b>Date:</b> 07/02/2023
<b>Description of CAR</b>				
FAR03 from the previous verification: The PP shall submit a design change request with a VVB report on validation of design change for changing the usage survey for medium commercial stoves before the submission of next verification.				
<b>PP response</b>				<b>Date:</b> 13/03/2023
For conservativeness and simplicity, the PP has counted all medium commercial stoves as medium domestic				



stoves. Medium commercial category of stoves has therefore been eliminated. Due to this, there was no need to seek for the design change as specified in FAR#3.

This approach was considered conservative as the emission reductions per stove are lower for domestic medium stoves than for commercial medium stoves (households that use the stove for their own family cooking and some preparation of food they sell outside the home on a “commercial” basis). It has been determined that in some instances a household will cook select food products at home and then sell the food products. The stove is still being used domestically to cook the family meals in contrast to the stove being used in a separate commercial establishment which cooks and serves food such as a restaurant.

**Documentation provided by PP**

GS 407 Combined ER calculations and Survey results Summary 2 tab medium KT

**VVB assessment** **Date: 31/03/2023**

PP has clarified that the medium commercial stoves are also treated as domestic stoves during the monitoring period and thus a design change is not required. However, it is noted that the KPT surveys would record higher biomass used for commercial stoves. PP shall clarify how it has been adjusted for the commercial users. CAR03 remains open.

**PP response** **Date: 12/04/2023**

During usage survey, there were both stoves used for domestic purpose and a few households preparing food to sell for commercial purposes *ref GS 407 Combined ER calculations and Survey results Summary 2, tab medium combined*. For conservativeness and simplicity, the PP has considered all medium stoves as medium domestic stoves and therefore no need for a design change. Further, during the KPT test, the fuel usage considered were for domestic use only to ensure conservativeness in fuel savings calculation. Due to this, there was no need to seek for the design change as specified in FAR#3

**Documentation provided by PP**

GS 407 Combined ER calculations and Survey results Summary 2 tab medium KT, Medium KT domestic, Medium KT commercial and Medium KT amended.

**VVB assessment** **Date: 11/07/2023**

PP has clarified that the households with domestic and commercial use are being considered for domestic use only and the KPTs conducted were based on the domestic usage only. Since, the domestic usage is expected to be lesser compared to the commercial usage, the approach has been accepted by the verification team. CAR03 is closed.

<b>CAR ID</b>	04	<b>Section no.</b>	A.3 in MR	<b>Date:</b>	07/02/2023
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**Description of CAR**

In the section A.3 of the MR, PP is requested to mention about the tools used in the methodology.

**PP response** **Date: 15/03/2023**

PP has included tools that were referenced on the registered PDD in section A.3 of the MR.

**Documentation provided by PP**

Gyapa Monitoring Report\_ version 2 track changes\_ 20230314

**VVB assessment** **Date: 31/03/2023**

PP has provided the details of the tools used in the section A.3 of the MR. CAR04 is closed.

<b>CAR ID</b>	05	<b>Section no.</b>	C in MR	<b>Date:</b>	07/02/2023
---------------	----	--------------------	---------	--------------	------------

**Description of CAR**

In the section C of the MR, under the Monitoring survey and usage survey, PP is requested to mention about the number of households surveyed.

**PP response** **Date:**

For quarterly surveys, the following was the breakdown of stoves surveyed by stove size ref (Gyapa\_Q1\_2022\_data\_MQ(ver2) analysis tab Analysis) and (ref GS 407 Combined ER calculations and Survey results Summary tab Q2 analysis).

Quarters	Q1	Q2
Small	111	114
Medium	104	120
<b>Total</b>	<b>215</b>	<b>234</b>

For KT, the following was the breakdown of number of stoves surveyed by size (ref GYAPA\_KPT\_2022\_final)

Stove Size	Gyapa™ Kitchen Performance Test Sample Size			
	Year 1	Year 2	Year 3	Total
Small	32	40	31	103
Medium	39	37	46	122
<b>Total Sample Size</b>				<b>225</b>

Further, detailed explanation for determination of sample size has been provided under section D.4 of the MR.

<b>Documentation provided by PP</b>	
Gyapa Monitoring Report_ version 2 track changes_ 20230314	
<b>VVB assessment</b>	<b>Date: 31/03/2023</b>
PP has provided the details of samples for quarterly surveys and KT surveys in the section D.4 of the MR. The details of the surveys for time lag surveys have not been provided. CAR05 remains open.	
<b>PP response</b>	<b>Date: 18/05/2023</b>
Details of the survey for time lag have been provided on section D.4 of the MR. The time lag survey indicated an average of 12.5 days from sale by manufacturer to use by customer (ref TimeLag_Survey_Sep'22 tab analysis summary) and this is reflected on the parameters tab of Excel spreadsheet GS407 combined ER calculations and survey results (ref GS 407 Combined ER calculations and Survey results Summary 2 Column C of tab Medium ERs sheet and tab Small Ers sheet).	
<b>Documentation provided by PP</b>	
GS 407 Combined ER calculations and Survey results Summary 2 tab Medium ERs sheet and tab Small Ers sheet column C. TimeLag_Survey_Sep'22 tab analysis summary	
<b>VVB assessment</b>	<b>Date: 24/05/2023</b>
The details of the time lag surveys have also been provided in addition to the quarterly surveys and KT surveys. CAR05 is closed.	

<b>CAR ID</b>	06	<b>Section no.</b>	B.1 in MR	<b>Date: 07/02/2023</b>
<b>Description of CAR</b>				
In the section B.1 of the MR, PP is requested to mention the status of implementation and start date of operation of cookstoves in each project site.				
<b>PP response</b>				<b>Date: 15/03/2023</b>
The project activity covers the production and sell of stoves by artisans and retailers spread out throughout Ghana. The artisans and retailers each join the project individually and are registered by the project at the time of joining. The project therefore does not have specific site start dates. Ref Gyapa_Production_Jan-Dec'22 tab Cers for the names of the manufacturers with the total number of apprentices working under them (this are the artisans). Also, tab Retailers of the same spread sheet indicates the names of the retailers working for the project. The project start date is specified in section B1 as 01/11/2007.				
<b>Documentation provided by PP</b>				
Gyapa_Production_Jan-Dec'22 tab Cers and tab retailers.				
<b>VVB assessment</b>				<b>Date: 31/03/2023</b>
PP has indicated the start date of the project activity in the section B.1 of the MR. Furthermore, it has been clarified that the artisans and retailers join the project randomly and there are no specific start dates. PP has manufacturing facilities across Ghana. PP shall provide the start date of operation for such manufacturing facilities. CAR06 remains open.				
<b>PP response</b>				<b>Date: 18/05/2023</b>
The Gyapa cookstove project uses a decentralized production model through trained artisans to make stoves in various locations in Ghana to produce and market the stoves under the direct supervision of the PP. Most of the artisans, before training, were tinsmiths making different metal/tin products. These artisans are able to join and suspend production of stoves based on their individual preference. It is therefore challenging to determine their start date of operations. However, to support producers in some regions, PP formally acquired plots of land in Papase (for Accra Cluster), Mbole (Ashaiman Cluster) and Akom (Kumasi Cluster) and have developed them into production centers for use by the artisans. Active production at the three sites commenced as follows:				
<ul style="list-style-type: none"> <li>• Akom, Kumasi Cluster - 01 August, 2019</li> </ul>				



<ul style="list-style-type: none"> <li>• Mobole, Ashiaman Cluster - 01 October, 2019</li> <li>• Papase, Accra Cluster - 01 May 2020</li> </ul>
<b>Documentation provided by PP</b>
<b>VVB assessment</b> <span style="float: right;"><b>Date: 24/05/2023</b></span>
The start dates of the production sites have been provided in the section B.1 of the monitoring report. CAR06 is closed.

<b>CAR ID</b>   07	<b>Section no.</b>   D.2 in MR	<b>Date:</b> 07/02/2023
<b>Description of CAR</b>		
The section D.2 of the MR is not in line with the GS MR template. PP is requested to make changes accordingly for the data and parameters monitored table.		
<b>PP response</b>		<b>Date: 15/03/2023</b>
PP has made amendments on section D1 and section D2 of the MR to be in line with the monitoring guide <sup>3</sup> .		
<b>Documentation provided by PP</b>		
Gyapa Monitoring Report_ version 2 track changes_ 20230314 section D1 and D2.		
<b>VVB assessment</b>		<b>Date: 31/03/2023</b>
PP has updated the tables used in the sections D.1 and D.2 of the MR for the monitoring parameters. CAR07 is closed.		

<b>CAR ID</b>   08	<b>Section no.</b>   E.5 in MR	<b>Date:</b> 07/02/2023
<b>Description of CAR</b>		
In the section E.5 of the MR, PP is requested to check the value of total estimated ER, in the column values estimated in Ex- ante calculation of approved PDD under SDG 13 is not in line with the values mentioned in the PDD.		
<b>PP response</b>		<b>Date: 15/03/2023</b>
PP would like to clarify that the values have been amended as per the design change PDD for SDG 13 <sup>4</sup> (ref GS 407 Combined ER calculations and Survey results Summary; tab Baseline Emissions and ref gs407_ Gyapa Cook Stoves Project in Ghana_ PDD Nov 6 2020 clean version (2)).		
<b>Documentation provided by PP</b>		
GS 407 Combined ER calculations and Survey results Summary gs407_ Gyapa Cook Stoves Project in Ghana_ PDD Nov 6 2020 clean version (2)		
<b>VVB assessment</b>		<b>Date: 31/03/2023</b>
PP has clarified that the values for the ex-ante estimates have been updated in accordance with the design change PDD. CAR08 is closed.		

<b>CAR ID</b>   09	<b>Section no.</b>   KPI in MR	<b>Date:</b> 07/02/2023	
<b>Description of CAR</b>			
In the KPI of the MR and other following sections, PP has provided the value of the ERs as 1,565,610 tCO <sub>2</sub> e, however, the total ERs calculated in the cell F40 of the Total ERs workbook of the ER sheet provides a value of 1,434,530 tCO <sub>2</sub> e. The vintage wise values are also not consistent with the ER sheet.			
<b>PP response</b>		<b>Date: 15/03/2023</b>	
The value provided for 1,434,530 tCO <sub>2</sub> e was erroneous. The PP has provided the correct values which are 1,343,675 tCO <sub>2</sub> e with a vintage breakdown as below as shown on tab summary of the Ers sheet (ref: GS 407 Combined ER calculations and Survey results Summary 2).			
<b>Current VERs by vintage</b>			
<b>Vintage Breakdown</b>		<b>No. of days</b>	<b>ERs</b>
01/09/2020	31/12/2020	122	251,068
01/01/2021	31/12/2021	365	751,147
01/01/2022	16/06/2022	167	343,675
<b>Total</b>		<b>654</b>	<b>1,343,675</b>

<sup>3</sup> [TEMPLATE GUIDE - Monitoring Report \(goldstandard.org\)](https://goldstandard.org)

<sup>4</sup> [SustainCERT Platform \(sustain-cert.com\)](https://sustain-cert.com)

<b>Documentation provided by PP</b>	
GS 407 Combined ER calculations and Survey results Summary Gyapa Monitoring Report_ version 2 track changes_ 20230314 table 2	
<b>VVB assessment</b>	<b>Date: 31/03/2023</b>
PP has revised the values for ERs as provided in the ER sheet. CAR09 is closed.	

**Table 3. CL from this verification**

<b>CL ID</b>	01	<b>Section no.</b>	D.2 in MR	<b>Date:</b>	07/02/2023
<b>Description of CL</b>					
In the section D.2 of MR, under the SDG parameter- 3, the values of monitored parameters of SD assessment small and medium is not in line with the values provided in the Data MQ analysis sheet.					
<b>PP response</b>					<b>Date: 15/03/2023</b>
The values reported for SDG 3 are in line with the values analysed on <i>GS 407 Combined ER calculations and Survey results Summary tab Q1 and Q2 combined analysis tables SD assessment medium and SD assessment small. The values in MQ are for Q1 surveys whereas the values used on the referenced sheet above are an average for both Q1 and Q2 as indicated on the tab labeled, Q1 and Q2 combined analysis. See breakdown below.</i>					
<b>SD ASSESSMENT MEDIUM</b>					
		<b>Average Q1</b>	<b>Average Q2</b>	<b>Average both periods</b>	
<b>Where do you often cook with the Gyapa ?</b>					
Outdoor		65%	67%	66%	
Indoor		35%	33%	34%	
<b>Smoke generation</b>					
Yes		2%	0%	1%	
No		98%	100%	99%	
<b>Irritation of the throat or eyes, get headaches or feel dizziness</b>					
Yes		0%	0%	0%	
No		100%	100%	100%	
<b>SD ASSESSMENT SMALL</b>					
		<b>Average Q1</b>	<b>Average Q2</b>	<b>Average both periods</b>	
<b>Where do you often cook with the Gyapa ?</b>					
Outdoor		62%	66%	64%	
Indoor		38%	34%	36%	
<b>Smoke generation</b>					
Yes		5%	0%	3%	
No		94%	100%	97%	
<b>Irritation of the throat or eyes, get headaches or feel dizziness</b>					
Yes		0%	0%	0%	
No		100%	100%	100%	
<b>Reference</b>					
GS 407 Combined ER calculations and Survey results Summary 2 tab Q1 and Q2 combined analysis Gyapa Monitoring Report_ version 2 track changes_ 20230314 section D.2					
<b>VVB assessment</b>					<b>Date: 31/03/2023</b>
PP has clarified that the results for SDG3 are average of values for the Q1 and Q2 as reported in the section D.2 of the MR. CL01 is closed.					

<b>CL ID</b>	02	<b>Section no.</b>	E.5 in MR	<b>Date:</b>	07/02/2023
<b>Description of CL</b>					
1.In the section E.5 of the MR, the comparison of the ERs/stove has been provided only for small and					

medium domestic. Large and Medium commercial has not been provided for comparison even though the stove types have been listed in the section B.1 of the MR. Furthermore, PP has stated in the section E.6 of the MR that the reason for increase of SDG 13 is due to the number of units increasing from ex-ante estimates, even though there is increase in per unit ERs as well. Also, PP shall justify why the ex-ante estimates on the stoves to be distributed was not considered during the renewal of crediting period.

2. In section E.5 of the MR, the average charcoal consumption has increased from ex-ante estimates to the monitored values significantly. PP shall clarify how this leads to savings of energy in the ex-post monitored values.

**PP response** **Date: 15/03/2023**

1. Although three different sizes of stoves (small, medium and large) are distributed by the project, the emission reductions and other SDG benefits for the large stoves have not been claimed for simplification of monitoring and conservativeness. On the same note, the benefits from medium stoves have calculated assuming all medium stoves are used for domestic application only although some medium stoves are also used for commercial applications and safe more fuel. This approach was considered conservative as the emission reductions per stove are lower for domestic medium stoves than for commercial medium stoves (households that use the stove for their own family cooking and some preparation of food they sell outside the home on a “commercial” basis). It has been determined that in some instances a household will cook select food products at home and then sell the food products. The stove is still being used domestically to cook the family meals in contrast to the stove being used in a separate commercial establishment which cooks and serves food such as a restaurant. (Refer section B.1 of the MR for further explanation) (*ref Gyapa Monitoring Report\_230118 version 2 track changes section B.1*).

For the same reason above, the comparison of the Ers per stove in section E.5 has only been carried out for small and medium stoves

Further, PP has made amendments under SDG 13 to reflect the latest PDD (design change PDD<sup>5</sup>). There has been an increase in the ERs claimed per stove for the small stoves only to 1.087 compared to the baseline scenario where the value was 0.9244, this is because there is more charcoal savings as compared to the baseline scenario for small stoves.

PP would also like to clarify that the design change which was approved on 23/11/2020 was requested since the stove numbers previously estimated was more that the actual figures hence there was a need to request for a design change.

2. Section E.5 has been amended using the correct values which shows that charcoal consumption has actually reduced from ex-ante estimates leading to energy savings.

**Reference**

Gyapa Monitoring Report\_ version 2 track changes\_ 20230314 section E.5

**VVB assessment** **Date: 31/03/2023**

1. PP has provided a justification for not reporting comparison of the ERs/stove for medium commercial and large stoves as no emission reductions are claimed for large stoves and medium commercial have been considered as domestic for conservativeness. Furthermore, PP has also revised the ex-ante ERs value based on the design change PDD. CL02.1 is closed.
2. PP has revised the values in the section E.5 of the MR based on the revised PDD submitted for design change. CL02.2 is closed.

<b>CL ID</b>	03	<b>Section no.</b>	ER sheet	<b>Date: 07/02/2023</b>
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**Description of CL**

1. In the Medium combined workbook of the ER sheet, the date and time of survey is not provided for the user ‘Sister Dorothy’.
2. In the Medium combined workbook of the ER sheet, the purpose of the stoves has been found out to be commercial and both for some of the users, even though emission reductions summary sheet only lists small and medium domestic stoves. PP shall clarify the inconsistency observed. Furthermore, during the surveys, some of the small stove users have also been found to have the stoves for commercial purpose with number of users as high as 251. PP has listed the use of small stoves as domestic only. It shall be clarified, how such stoves have been accepted in the project activity without appropriate baseline survey.
3. In the small combined workbook of the ER sheet, the households Helena Peterson and Akua Achiaa have been listed as two households with comment as different households. PP shall clarify how the households were determined to be different even though the stove vintage is same for both the respondents in both the cases. Also, PP shall clarify if more than 1 stove have been provided to the same household users.

**PP response** **Date: 15/03/2023**

<sup>5</sup> [SustainCERT Platform \(sustain-cert.com\)](https://sustain-cert.com)

<ol style="list-style-type: none"> <li>1. Date and time of Survey for Sister Dorothy has been provided GS 407 Combined ER calculations and Survey results Summary 2 tab medium combined row 60.</li> <li>2. While large stoves are used mostly for commercial application in food outlets, small and medium stoves are used mostly for domestic applications only (cooking for household members only). However, some small and medium stoves are used to not only cook for the household members only but are also used to cook food that is sold commercially on the streets. This explains why some small and medium stoves are used to cook for many people (many more than a typical household size). Because commercial application consumes and save more fuel in the baseline and project scenarios, respectively, all stoves have been treated as domestic for simplification and conservativeness. This has been further explained in Section B.1 of the amended MR.</li> <li>3. PP would like to confirm that indeed, these are different households, there was no repetition. PP has provided a support document labelled addressing CL ID 03 which proves that indeed this are different households.</li> </ol>	
<b>Reference</b>	
GS 407 Combined ER calculations and Survey results Summary 2 tab medium combined row 60 CL ID 03	
<b>VVB assessment</b>	<b>Date: 31/03/2023</b>
<ol style="list-style-type: none"> <li>1. Date and time of survey has been updated for the user in the ER sheet. CL03.1 is closed.</li> <li>2. PP had reported the use of Small stoves for domestic use in the revised PDD. It shall be justified, how the use of small stoves for commercial purpose does not require a design change. CL03.2 remains open.</li> <li>3. PP has not provided the document labelled CL ID 03 to the verification team. PP shall provide evidence to confirm that the households are different. CL03.3 remains open.</li> </ol>	
<b>PP response</b>	<b>Date: 18/05/2023</b>
<ol style="list-style-type: none"> <li>2. PP would like to clarify that there were no small commercial stoves but rather all stoves are used for domestic use with some stove users using stoves to sell their food. Based on this, a design change is not required for the small stoves.</li> <li>3. PP has provided document labelled <i>Addressing CL ID 03</i> as evidence to confirm that the households are different.</li> </ol>	
<b>Documentation provided by PP</b>	
Gyapa_Q1_2022_data_analysis tab small KT GS 407 Combined ER calculations and Survey results Summary 2 tab	
<b>VVB assessment</b>	<b>Date: 30/05/2023</b>
<ol style="list-style-type: none"> <li>1. Closed.</li> <li>2. PP has clarified that the stoves are used for domestic purpose only and do not constitute usage of stoves for commercial purpose. CL03.2 is closed.</li> <li>3. PP has clarified based on the geographical location check of the households to confirm that they are indeed different. PP shall also submit the evidence to SustainCERT. CL03.3 is closed.</li> </ol>	

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

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	$EF_{b,CO_2}$
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	112
<b>Purpose of data</b>	To determine the CO <sub>2</sub> emission factor of the wood fuel
<b>Source of verification of the source</b>	IPCC default emission factor. The values have been cross-checked with the revised approved PDD/B03-1b/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	$EF_{b,nonCO_2}$
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	0.00
<b>Purpose of data</b>	To determine the Non- CO <sub>2</sub> emission factor arising from the use of fuels in the baseline scenario
<b>Source of verification of the source</b>	IPCC defaults are applied in conjunction with credible published literature. The values have been cross-checked with the revised approved PDD/B03-1b/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	$EF_{p,CO_2}$
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	112
<b>Purpose of data</b>	To determine the CO <sub>2</sub> emission factor of the wood fuel
<b>Source of verification of the source</b>	IPCC default emission factor. The values have been cross-checked with the revised approved PDD/B03-1b/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	$EF_{p,nonCO_2}$
<b>Data unit</b>	tCO <sub>2</sub> /t <sub>fuel</sub>
<b>Default values used</b>	0.00
<b>Purpose of data</b>	To determine the CH <sub>4</sub> emission factor of the wood fuel
<b>Source of verification of the source</b>	IPCC defaults are applied in conjunction with credible published literature. The values have been cross-checked with the revised approved PDD/B03-1b/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	NCV <sub>b</sub>
<b>Data unit</b>	TJ/ton
<b>Default values used</b>	0.0295
<b>Purpose of data</b>	To determine the calorific value of charcoal fuel used in the baseline
<b>Source of verification of the source</b>	IPCC 206 default values, project- relevant measurement reports, or project – specific testing. The values have been cross-checked with the revised approved PDD/B03-1b/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate Action
<b>Parameter</b>	NCV <sub>p</sub>
<b>Data unit</b>	TJ/ton
<b>Default values used</b>	0.0295
<b>Purpose of data</b>	To determine the net calorific value of the fuels used in the project
<b>Source of verification of the source</b>	IPCC 2006 default values, project- relevant measurement reports, or project- specific testing. The values have been cross-checked with the revised approved PDD/B03-1b/.

**Annex 2: Assessment of data and parameters monitored**

<b>Monitoring Parameter Requirement</b>	<b>Assessment/ Observation by the DOE</b>
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	$f_{NRB,i,y}$
<b>Unit</b>	Fractional non- renewability
<b>Measuring frequency/Time Interval:</b>	Fixed by baseline study for this current crediting period
<b>Reported value</b>	0.99
<b>Verified Source of Data</b>	Applicable NRB assessment
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised-approved PDD/B03/.
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 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.

<b>Monitoring Parameter Requirement</b>	<b>Assessment/ Observation by the DOE</b>
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
<b>Data / Parameter:</b>	$P_{b,y}$



<b>(as in monitoring plan of PDD):</b>	
<b>Unit</b>	Kg/ household-day
<b>Measuring frequency/Time Interval:</b>	Updated every two years
<b>Reported value</b>	On average, 2.54 and 2.64 kilograms of charcoal per used per day for small and medium stoves respectively.
<b>Verified Source of Data</b>	Kitchen Test report
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the monitoring plan/B03/ and the monitoring methodology/B01/.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	The details of the weighing scales have been provided in the MR. All the images and serial numbers of the weighing scales are also provided/11/.
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 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?	A temporary deviation (COVID_DEV 303) has been applied by the project participant. The required frequency of kitchen performance tests is every two years. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters.

<b>Monitoring Parameter Requirement</b>	<b>Assessment/ Observation by the DOE</b>
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	P <sub>p,y</sub>
<b>Unit</b>	Kg/ household-day
<b>Measuring frequency/Time Interval:</b>	Updated every two years
<b>Reported value</b>	On average, 1.47 and 1.54 kilograms of charcoal per used per day for small and medium stoves respectively
<b>Verified Source of Data</b>	Kitchen Test Report
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the monitoring plan/B03/ and the monitoring methodology/B01/.



Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	The details of the weighing scales have been provided in the MR. All the images and serial numbers of the weighing scales are also provided/11/.
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 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?	A temporary deviation (COVID_DEV 303) has been applied by the project participant. The required frequency of kitchen performance tests is every two years. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE									
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)									
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	$U_{p,y}$									
<b>Unit</b>	percentage									
<b>Measuring frequency/Time Interval:</b>	Annual or more frequently, in all cases on time for any request for issuance									
<b>Reported value</b>	<table border="1"> <thead> <tr> <th>Usage</th> <th>%</th> <th>Capped Value</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>92.3%</td> <td>90%</td> </tr> <tr> <td>Medium</td> <td>91.5%</td> <td>90%</td> </tr> </tbody> </table> <p>The usage values have been capped based on the Requirements and guidelines: Usage rate monitoring, v2.0/B06-3/. PP has demonstrated compliance with Good Practice Monitoring Requirements in the section D.4 of the MR/02/. The survey values for the MP2 have been considered for the values reported for MP3, as the values for MP2 were more conservative. Thus, ERs have been discounted to account for the over-issuance during the previous verification.</p>	Usage	%	Capped Value	Small	92.3%	90%	Medium	91.5%	90%
Usage	%	Capped Value								
Small	92.3%	90%								
Medium	91.5%	90%								
<b>Verified Source of Data</b>	Surveys									
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the monitoring plan/B03/ and the monitoring methodology/B01/.									

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 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?	A temporary deviation (COVID_DEV 303) has been applied by the project participant. The required frequency of usage survey is annually. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters. The survey values for the MP2 have been considered for the values reported for MP3 as the values for MP2 were more conservative. Thus, ERs have been discounted to account for the over-issuance during the previous verification.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	$N_{p,y}$
<b>Unit</b>	Project technologies credited (units)
<b>Measuring frequency/Time Interval:</b>	Continuous
<b>Reported value</b>	113,192 small stoves and 1,045,711 medium stoves (1,158,903 cumulative numbers)
<b>Verified Source of Data</b>	Total sales record
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.
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 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.
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Indicator 13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	LE <sub>p,y</sub>
<b>Unit</b>	tCO2 per year
<b>Measuring frequency/Time Interval:</b>	Every two years
<b>Reported value</b>	2.096% as conservative estimate based on the previous monitoring period (MP3)
<b>Verified Source of Data</b>	Monitoring Surveys and KT
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.
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 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?	A temporary deviation (COVID_DEV 303) has been applied by the project participant. The required frequency of leakage is once in two years. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
<b>Relevant SDG Indicator</b>	SDG 3: Ensure healthy lives and promote well- being for all at all ages

	Indicator 3.9.1 Mortality rate attributed to household and ambient air pollution			
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	Perceived air quality			
<b>Unit</b>	Survey observations and interviews			
<b>Measuring frequency/Time Interval:</b>	Quarterly			
<b>Reported value</b>	<b>SD ASSESSMENT SMALL</b>			
	<b>Where do you often cook with the Gyapa</b>	<b>Average Q1</b>	<b>Average Q2</b>	<b>Average both periods</b>
	Outdoor	62%	66%	64%
	Indoor	38%	34%	36%
	<b>Smoke generation</b>			
	Yes	5%	0%	3%
	No	94%	100%	97%
	<b>Irritation of the throat or eyes, getting headaches or feeling dizziness</b>			
	Yes	0%	0%	0%
	No	100%	100%	100%
	<b>SD ASSESSMENT MEDIUM</b>			
	<b>Where do you often cook with the Gyapa</b>	<b>Average Q1</b>	<b>Average Q2</b>	<b>Average both periods</b>
	Outdoor	65%	67%	66%
	Indoor	35%	33%	34%
	<b>Smoke generation</b>			
	Yes	2%	0%	1%
	No	98%	100%	99%
	<b>Irritation of the throat or eyes, getting headaches or feeling dizziness</b>			
	Yes	0%	0%	0%
	No	100%	100%	100%
	Applied 2019/2020 survey values which were more conservative to adhere to deviation requirement.			
	Presence of Smoke or not when cooking indoor?		Presence of smoke when cooking outdoor	
	<b>Period</b>	<b>No</b>	<b>No</b>	
Q 1-2019	65%	78%		
Q 2 -2019	75%	59%		
Q 3-2019	95.2%	87.5%		
Q 4 -2019	74%	86%		
Q 1-2020	88%	73%		
<b>Average</b>	<b>79.44%</b>	<b>76.70%</b>		

<b>Verified Source of Data</b>	Surveys
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.
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 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?	A temporary deviation (COVID_DEV 303) has been applied by the project participant. The required frequency of the parameter is quarterly. A deviation was allowed to the PP due to COVID to use the results obtained during the surveys conducted in 2022 to assess the above parameters. The survey values for the MP2 have been considered for the values reported for MP3 as the values for MP2 were more conservative. Thus, ERs have been discounted to account for the over-issuance during the previous verification.

<b>Monitoring Parameter Requirement</b>	<b>Assessment/ Observation by the DOE</b>																				
<b>Relevant SDG Indicator</b>	SDG 1: End poverty in all its forms everywhere Indicator 4.1: Proportion of population living in households with access to basic services																				
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	Equivalent monetary savings																				
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<b>Measuring frequency/Time Interval:</b>	Quarterly																				
<b>Reported value</b>	<table border="1"> <thead> <tr> <th colspan="5"><b>MONETARY SAVINGS</b></th> </tr> <tr> <th></th> <th><b>Q1</b></th> <th><b>Q2</b></th> <th><b>Daily Average Savings</b></th> <th><b>Annual Average Savings</b></th> </tr> </thead> <tbody> <tr> <td><b>Small</b></td> <td>5.77</td> <td>4.72</td> <td>5.25</td> <td>1915.15</td> </tr> <tr> <td><b>Medium</b></td> <td>4.58</td> <td>5.36</td> <td>4.97</td> <td>1814.97</td> </tr> </tbody> </table>	<b>MONETARY SAVINGS</b>						<b>Q1</b>	<b>Q2</b>	<b>Daily Average Savings</b>	<b>Annual Average Savings</b>	<b>Small</b>	5.77	4.72	5.25	1915.15	<b>Medium</b>	4.58	5.36	4.97	1814.97
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE																																							
<b>Relevant SDG Indicator</b>	SDG 8: Decent work and economic growth Indicator 8.5.1 “Average hourly earnings of female and male employees, by occupation, age and persons with disabilities”																																							
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<b>Verified Source of Data</b>	Project Records																																							
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.																																							
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Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions	Yes, the data management ensures correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place.																																							



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?	The employment figures have been correctly recorded by the project proponent and thus the complete data is available.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
<b>Relevant SDG Indicator</b>	SDG 13: Climate Action Number of people/households with access to the energy efficient cook stoves and the usage rates of efficient cook stoves.
<b>Data / Parameter: (as in monitoring plan of PDD):</b>	Number of people or households with access to the energy efficient cook stoves and the usage rates of efficient cook stoves
<b>Unit</b>	Number of stove users and usage rates
<b>Measuring frequency/Time Interval:</b>	Annual
<b>Reported value</b>	1,158,903
<b>Verified Source of Data</b>	Stove database records and surveys
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.
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 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?	The stove numbers have been correctly recorded by the project participant and thus the complete data is available.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
<b>Relevant SDG Indicator</b>	SDG 8: Decent work and Economic growth Indicator 8.8.1: Frequency rates of fatal and non- fatal occupational injuries, by sex and migrant status

<b>Data / Parameter: (as in monitoring plan of PDD):</b>	Frequency rates of fatal and non- fatal occupational injuries. (Safe and healthy working environment) and training on stove value chain
<b>Unit</b>	Number of staff training and the number of protective gear provided
<b>Measuring frequency/Time Interval:</b>	Annual
<b>Reported value</b>	<ul style="list-style-type: none"> <li>• The manufacturers- both the metal artisans and the ceramicist are visited regularly (one-on-one sessions) to ensue their productions meet the required standards. Other issues related to good business management and technical standards are also discussed during the sessions. Most of the current producers have been with the project for a considerable length of time and have improved their skills and competencies in the production and marketing of the stoves- hence the Project no longer organizes any workshop format training sessions. Instead, training sessions are more based on one-on-one interactions to address specific needs of each producer.</li> <li>• Provision of Essential protective gear (overall uniform, hand gloves, helmets. Boots, ear and nose protectors) given to 241 stove producers and 66 ceramicists.</li> <li>• Improved production environment through the construction of storage and production facilities for: <ul style="list-style-type: none"> <li>○ Kumasi – 285.71- meter square working space and warehouse completed and in use. All production currently takes place in a purpose-built facility.</li> <li>○ Ashaiman/ Mobole- 304.77- meter square- also completed and hand over to the producers.</li> <li>○ Papaase- A 320- meter square warehouse facility has been provided for the use of the artisans- most of whom relocated from the Timber Market Cluster.</li> <li>○ A 7- tonner truck has also been procured to help with stove distribution and other operational task to improve efficiency and profitability for the value chain.</li> </ul> </li> </ul>
<b>Verified Source of Data</b>	Project records
<b>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</b>	Yes, the reported frequency is in accordance with the registered/ revised approved PDD/B03/.
<b>Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:</b>	NA



<p>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?</p>	<p>Yes, the data management ensures correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place.</p>
<p>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?</p>	<p>The details on the production facilities have been correctly recorded by the project participant and thus the complete data is available.</p>