



IMPROVED COOKSTOVE DISTRIBUTION IN GHANA BY EKI



Document Prepared By LGAI Technological Center, S.A. (Applus+ Certification)

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Summary:

LGAI Technological Center, S.A. (hereafter referred to as “Applus+ Certification”) has been appointed by EKI Energy Services Limited to perform the verification of greenhouse gas emission reductions of the grouped project activity “Improved Cookstove Distribution in Ghana by EKI” (VCS Ref. No. 3801, hereafter referred to as “the grouped project activity”) reported in the monitoring report /1/ during monitoring period 01-March-2023 to 31-January-2024.

The grouped project activity has been validated by Applus+ Certification based on the VCS PDMR /3/ version 03 dated 12-September-2023 and reported in the validation report/4/, version 02.0Aa dated 03-October-2023 as available on <https://registry.terra.org/app/projectDetail/VCS/3801>

The grouped project activity is distribution of fuel-efficient improved cook stoves (ICS) in the Republic of Ghana (Ghana). The Improved cookstove stove distributed through this project replaces low efficient baseline cookstoves withing 3 different regions of host country – Ghana. For the current monitoring period, project proponent has distributed 209,380 ICS which led to emission reduction of 545,780 tCO₂e. During the fixed 10 years of crediting period, the Grouped project activity is expected to reduce GHG emissions through charcoal saving by using efficient ICS distributed free of cost by the PP.

In accordance with the registered joint PD&MR, with the addition of 189,278 ICS during the second monitoring period to the 20,102 ICS installed during 1st monitoring period, the revised estimated average annual GHG emission reductions for the grouped project activity are projected to reach 750,256 tCO₂e. Consequently, the revised total GHG emission reductions over the entire crediting period are expected to amount to 5,251,790 tCO₂e.

Scope of this verification: It is to ensure that reported emission reductions are complete and accurate in accordance with applicable VCS standard and relevant requirements in order to be certified. A desk review and

a site visit have been conducted to verify the data submitted in the monitoring report /1/. Applus+ Certification confirms the following has been reviewed:

- Monitoring plan included in the registered VCS PD /3/;
- Validation report /4/;
- VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstove, version 1.1/7/;
- AMS II.G - Energy efficiency measures in thermal applications of non-renewable biomass, version 13.0/7/;
- VCS standards version 4.6 and VCS program guide version 4.4, as well as relevant VCS And UNFCCC requirements;
- All information and references relevant to the grouped project activity's resulting in emission reductions.

During this verification, following findings were identified related to the monitoring, implementation or operations of the grouped project activity in relation to relevant VCS standards, guidance and UNFCCC requirements and relevant host party criteria and the applied baseline and monitoring methodology etc. Total no. of findings: CL: 04, CAR: 11 an and FAR: 00.

Verification conclusion: Applus+ Certification confirms that the project is implemented in accordance with the registered PD/3/. The monitoring plan complies with the applied methodology VMR0006, version 1.1, AMS II.G, version 13.0/7/ and the monitoring has been carried out in accordance with the registered PD. The monitoring system is in place and the emission reductions are calculated without material misstatements. The level of assurance of the verification is reasonable. Our opinion relates to the project's GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 545,780 tCO₂e emission reductions during period 01-March-2023 to 31-January-2024.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (Applus+ Certification) has been commissioned by EKI Energy Services Limited to perform the verification of greenhouse gas emission reductions of the grouped project activity “Improved Cookstove Distribution in Ghana by EKI” (VCS Ref. No. 3801) reported in the Monitoring Report /1/ during monitoring period 01-March-2023 to 31-January-2024.

LGAI Technological Center, S.A. (Applus+ Certification) as the verification body of the grouped project activity has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2020.

The objective of verification is to have an independent review and ex post determination by a Validation and Verification Body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registration of VCS project. Certification is the written assurance by the VVB that, during a specific time period, a proposed VCS grouped project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification is to verify and certify emission reductions, reported for the “Improved Cookstove Distribution in Ghana by EKI” in Ghana for the period 01-March-2023 to 31-January-2024.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PD, the Project’s baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.6 requirements, UNFCCC rules and associated interpretations.

The verification has been conducted in accordance with the VCS Standard version 4.6, other valid and applicable VCS Regulatory Documents and templates (see Appendix 2 of this verification Report below), UNFCCC rules and requirements (where applicable) and associated decisions of the VCS Secretariat and the UNFCCC Executive Board (where applicable) (hereinafter also can be referred to as regulatory documents).

The verification is not meant to provide any consulting towards the client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the Project monitoring towards reductions in the GHG emissions.

1.3 Level of Assurance

The verification report is based on the VCS-PD, VCS Monitoring Report (MR), supporting evidences made available to the verifier as well as other supporting evidences made available to the VVB and information collected through performing interviews and during the on-site assessment.

Through an exhaustive process of documentary review, interviews with the project proponent, site visits and sampling and survey, assessment on GHG Emission Reductions calculations against applicable methodology and any other regulatory document, and reporting of objective evidences, the VVB is able to reach a reasonable level of assurance on the conduction of the Verification process.

The achieved level of assurance for this verification is thus a reasonable level of assurance as per the requirements set out in the applied VCS Standard version 4.6 clause 4.1.10 (1).

VVB applied a materiality threshold of 1% with respect to omission or misstatements concerning reported quantities as per VCS Standard version 4.6 clause 4.1.10 (4).

Additionally, according to the VCS Validation and Verification Manual version 3.2, while all material errors, omissions and misrepresentations must be addressed for a project to receive a positive validation or verification opinion, when non-material errors have been found in the project documents, the VVB requested the project proponent to correct them and ensured that such errors have been addressed where practicable.

The verification conclusion is assured a reasonable level of assurance.

1.4 Summary Description of the Project

Project title	Improved Cookstove Distribution in Ghana by EKI
VCS reference number	3801
Project Proponents	EKI Energy Services Limited (Project proponent, host country – Republic of Ghana)
Location of the project	Entire republic of Ghana Geographic coordinates: Latitude: 8° 2' 5.5608" N, Longitude: 1° 18' 47.8512" W
Project start date	1 st ICS distribution and commissioning date: 16-January-2023
Version of PD	VCS PD Version 03, dated 12-September-2023
Monitoring period	01-March-2023 to 31-January-2024
First monitoring report	Version 01, dated 21-February-2024
Final monitoring report	Version 04, dated 26-July-2024
Applied Methodology/Version	VMR0006, version 1.1 AMS II.G, version 13.0
Scope/Technical Area	Sectoral Scope 3: Energy Demand Technical area: 3.1

The main purpose of the grouped project activity is distribution of fuel efficient improved cook stoves (ICS) in the Republic of Ghana (Host country). The improved cookstove distributed through this grouped project activity replaced the low efficient baseline cookstoves in the households.

PP has initiated the grouped project activity in the Ghana and initial Project Activity Instances are located in the same country but it may expand further in other parts of Africa. PP has considered one cookstove as one project activity instance for this grouped project activity. The first project activity instance was commissioned on 16-January-2023.

The installed ICS substitutes the charcoal-based mud or three-stone stoves. The baseline scenario established in the registered VCS PDMR is the continued use of non-renewable biomass (Charcoal) by the target household population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.

At the time of registration, PP had added 20,102 ICS and conducted joint validation and verification. registered joint PD&MR. The 1st monitoring period was from 16-January-2023 to 28-February-2023. The detailed distribution of ICS which was checked and confirmed based on desk review and on-site interviews is discussed in appendix 4 along with technical specifications of the cookstoves distributed.

The project resulted in a total emission reduction of 4,291 tCO₂e over the 1st monitoring period. During current monitoring period, 189,278 ICS (project activity instances) are added. Thus, revised estimated average annual GHG emission reductions for the grouped project activity is projected to reach 750,256 tCO₂e. Consequently, the revised total GHG emission reductions over the entire crediting period are expected to amount to 5,251,790 tCO₂e.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS Standard version 4.6, CDM M&P, applied methodologies, the latest version of the VCS Validation and Verification Standard, and relevant VCS and UNFCCC requirements and applying standard auditing techniques.

Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a desk review followed by a site visit. This Verification Report describes the findings of this assessment and their successful closure.

The Verification process has been conducted following the regulatory documents and based on the ISO 14064-3:2019 and ISO 14065:2020 using standard auditing techniques as required by the VCS Standard version 4.6.

The Verification process has been conducted through an onsite inspection (see below), thus, no need for a risk analysis for remote inspections has been determined for this Validation (VCS Standard version 4.6. Para 4.1.13).

No ICT means have been used for the conduction of this Verification process other than those for the provision of documents and transferring information and undertake normal communications with the PP(s). Those ICT means supporting the process in this sense, have been used to an extent sufficient to cover the background necessities of the Verification process and have demonstrated enough effectiveness to conduct it in accordance with the relevant applicable regulatory requirements.

This process has included: the review of data and information presented to verify their completeness; the review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements and the QA/QC procedures; an evaluation of data management; and an evaluation of the QA/QC system in place in the context of its influence on the generation and reporting of emission reductions.

No virtual sites have been included in the verification process according to the definition in the IAF MD4: 2023 document. Instead, the documentation has been provided upon request from the VVB by other means (such as physical documents, mail, transfer applications, etc.)

Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed in accordance with the Applus+ Certification's procedures and policies, that are in accordance with the ISO 14065:2020 regulatory provisions.

Applus+ Certification has completed a strategic review and risk assessment of the project's activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project's emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Based on the above, the VVB prepared a verification plan and applied an evidence-gathering plan designed to collect sufficient and appropriate evidence upon which to base the conclusion and to consider the inherent risk for the verification. The evidence-gathering plan is based on analytical procedures and tests and considers the thresholds for materiality as per the regulatory documents applied for this Verification (1% as per the applied VCS Standard version 4.6).

The applied evidence-gathering plan is used by the VVB to determine the conformity of the statements made by the client against the principles and requirements of the applied regulatory documents during this verification.

The evidence-gathering plan designed by the VVB takes into consideration, as a minimum:

- The selection and management of the data and information;
- The processes for collecting, processing, consolidating, aggregating and reporting the data and information;
- Systems and processes in place to ensure the validity and accuracy of the data and information;
- The design and maintenance of the system to control the data and information;
- Systems, processes and personnel that support system in place, including activities for ensuring data quality;
- The plans for instrument maintenance and calibration where appropriate;
- The results of previous validation activities and verifications, where available and appropriate

Applus+ Certification has verified the implementation of the monitoring plan and the data presented in the latest version of Monitoring Report (MR) for the monitoring period applicable to this verification process.

The process of verification involved the following relevant milestones:

- The signature of the contract for verification between the PP and the VVB;
- A kick-off meeting/communication to require the documentary material to perform an initial desk review;
- An initial desk review of the documentary evidences prepared by the Project Proponent;
- The issuance of findings coming from this initial desk review (if any);
- The conduction of an onsite audit;
- The issuance of findings from the onsite audit and communication of deviations (if any) to the Project Proponent;
- The assessment of their resolution and closure, when appropriate;
- Once all the findings have been closed, the elaboration of this Verification Report, in which such findings (if any) are described;
- The conduction of an independent Technical Review;
- Upon conclusion of the Technical Review, the VVB may perform a final quality check before the issuance of the Final Verification Report (FVR) and signature of the corresponding Verification Deed.

The process of this verification assessment has implied sampling plan and details of the same are mentioned in section 2.3 below.

The information of the assessment team is included in below:

Assessment team

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, LGAI Technological Center S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center S.A. (Applus+ Certification).

The composition of assessment team has to be approved by the LGAI Technological Center S.A. (Applus+ Certification) Central Site during its Contract Review stage, ensuring that the required skills are covered by the team.

The qualification levels for Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Technical Reviewer (TR).
- Other supporting roles such as Country Expert (CE) or Financial Expert (FE)
- Any of the above-mentioned roles in training (iT, e.g. AiT for auditor in training).

The Sectoral Scope / Technical Area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team as shown below:

Name	Role	SS/TA Knowledge	Financial Expertise	Host country experience	Attendance to on-site visit
Deepak Pundlik	LA/TE	Yes (3.1)	N/A	YES	YES
Simon Shen	TR	Yes (3.1)	N/A	N/A	N/A

Deepak Pundlik : Mr. Deepak Pundlik has an experience in climate change, waste management and environmental management fields. He is a post graduate in Environment Sciences from Pune university, India. As a GHG consultant, he handled projects from renewable energy and waste management sectors during his stint with different companies like MITCON, Thermax Limited etc. As a GHG auditor, he is involved in validating/verifying projects under various carbon registries from renewable energy, energy demand, waste management sectors. Mr. Deepak Pundlik is based in Pune, India. Currently he is associated with True Quality Certifications Pvt. Ltd. (Applus+ Certification's Outsourced Entity).

Simon Shen: Mr. Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager. Mr. Simon Shen is based in Shanghai, China. Mr. Simon Shen participates in the project's technical review team.

Onsite visit:

An on-site site visit was conducted by LGAI Technological Center S.A. (Applus+ Certification) assessment team who performed interviews and on-site inspection with project's stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below sections.

Resolution of Clarification and Correction Action Request: -

The objective of this phase of the verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification) positive conclusion on the project's monitoring. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the PP and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the appendix 3.

The final version of VCS MR submitted by project proponent serves as the basis for the final assessment presented. Additional changes to the project during the verification were not considered to be significant with respect to the main VCS objectives which are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality Control: -

As final step of a verification of the final documentation including the verification report has to undergo an internal quality control by the technical review committee, i.e., each report has to be finally approved either by the head of the technical review committee or the deputy.

After confirmation of the project proponent the positive verification opinion and relevant documents are submitted to the client(s) for further submission to the VCS Secretariat through the VCS Registry.

2.2 Document Review

The VCS monitoring report /1/ and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, monitoring survey, registered VCS PDMR /3/ in particular the baseline estimations and the monitoring plan, the VCS Validation Report /4/, as well as relevant documents, were reviewed. A detailed document reviewed are listed in Appendix 2 of the report.

2.3 Interviews

A physical site visit interview was made by the assessment team between 18-March-2024 to 22-March-2024.

Since the grouped project activity involved more than 0.2 million project activity instances, PP has conducted sampling to confirm the monitoring parameters. VVB has conducted sampling from the sampled end users by PP.

Implementation of sampling plan:**PP Sampling Approach for Monitoring Survey**

VVB has confirmed that PP sampling approach is in line with applied methodologies. As per the methodology page 12, monitoring survey are allowed to follow requirements of baseline survey and hence

was conducted by sample sizing of >100 (155 for Obapa model, 140 for Gyapa model and 135 for Gyapa stove A model in actual) with in person interviews with the users. The data collected which is presented in the monitoring survey excel sheet follows requirements as per methodology and the latest version of the CDM Standard for sampling and surveys for CDM project activities and programme of activities which is checked and confirmed. The submitted excel sheet was checked and was found appropriate.

By checking the monitoring and usage survey record and samples of "monitoring survey questionnaire", it is confirmed that during this monitoring period, ICS were distributed in the households within the Ghana with each household being distributed one ICS. Through site visit interviews, it is confirmed that all the ICSs are in good condition.

By checking the monitoring survey datasheet based on sampling conducted by PP, it is confirmed that none of the households use the old stoves/traditional low efficient stove in parallel with their ICS after they were provided ICS. Therefore, the number and times of old stoves used after ICS purchase has been zero. The same has been confirmed during the on-site visit interviews with end users.

VVB confirmed that there end users have observed savings in charcoal usage ultimately savings in purchases and less smoke. PP representatives visited the site and ask each sampled household about their daily consumption of charcoal for the project stove. A quantity of charcoal made from the Charcoal stock available with the user and then weighed using a weighing scale. The weight of charcoal used in survey households was then noted down similarly and then averaged for the final value of the parameter. This was cross checked during on-site interviews and confirmed.

VVB also confirmed that there were no major differences in stove and fuel usage in the dry seasons versus rainy seasons. Cooking locations varies seasonally as less people cook outside during rainy season. The same has been confirmed during site visit.

It is confirmed that end users of project stoves have been selected properly using representative sampling techniques, which is complied with the sampling plan contained in the VCS PD.

PP has maintained soft copies of the surveys in a database with a backup as confirmed during on-site visit. The original survey questionnaires filled by the survey team and signed by the users are available in local project office. A backup of the survey results are stored on an electronic medium which were checked and confirmed.

Furthermore, during interviews with the PP and distributors (project implementer), the assessment team confirmed that they explained and demonstrated how to correctly and efficiently use the project cookstoves and the benefits (e.g., save charcoal, clean cooking, environment friendly, healthy, save money etc.) of using the project cookstove when the project cookstoves were distributed.

VVB sampling:

Following "CDM Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0 and "CDM Standard of Sampling and surveys for CDM project activities and programmes of activities" version 09.0, the VVB conducted the verification of sampling results with the following steps:

Take a random sample of the project's sample records;

In order to determine the size of the sample end users for field/onsite check, the acceptable quality level (AQL), i. e. the proportion discrepancies between the PP sample records and the VVB sample records that are acceptable is determined as 1% and the proportion of discrepancies between the PP sample records and VVB sample records that are unacceptable (UQL) is determined as 20% according to "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 09.0.

The maximum errors associated with the determination indicated above should remain at levels indicated below as per "Sampling and Surveys for CDM Project Activities and Programme of Activities":

- (1) A 10% chance that the VVB will wrongly reject the PPs records (producer's risk);
- (2) A 10% chance that the VVB will wrongly accept the PPs records (consumer's risk).

VVB selected the above values based on para 30 and 31 of sampling standard.

Therefore, with the AQL of 1%, the UQL of 20%, the producer's risk of 10% and the consumer's risk of 10%, the size of the acceptance sampling is determined as 18 and the acceptance number is determined as 1 according to Table 2 of "Sampling and Surveys for CDM Project Activities and Programme of Activities".

In order to conduct an on-site interviews, the assessment team randomly selected 18 end users from PP's monitoring and usage survey. Since the proposed project activity involved 3 different models of project cookstoves distributed, 18 random samples were selected from PP's random sampling conducted for these project cookstoves.

Check the acceptability of the data for each record in the sample records based on the expertise;

18 households from PP's project survey samples are randomly selected and these selected end users were interviewed during site visit. The information collected during site visit interviews was found consistent with the PP's project survey results. No discrepancy was observed between PP's sample records and VVB's sample records. And all the households interviewed by the assessment team confirmed that they had participated in the PP's sampling survey.

Based on the number of records where is agreement, determine if the sample records meet the requirements.

As there are no discrepant records, i. e. the discrepant record is less than the acceptance number of 1, the sample records were accepted as per sampling guidelines and tool.

Using acceptance sampling approach, verification team checked the PP's samples results (reported in the monitoring forms) along with the following evidences:

1. Site visit inspection/interview
2. PP household database
3. Thermal capacity/thermal efficiency of the stoves from stove supplier/determined from qualified laboratory

Following the requirement of the paragraph 28 of the Standard "Sampling and surveys for CDM project activities and programmes of activities" version 09.0, the acceptability of data in the random sample chosen from the PP's sample records was determined. Based on the number of records where there was

agreement, it was determined whether the PP's sample records meet the requirements. The acceptability of the data was based on the VVB's professional judgement in line with the para 28 of the Sampling Standard.

All the data records for the 2 parameters ($N_{y,j,j}$, $B_{y=1,new,l,j,survey}$) were in agreement with PP's sample records and no discrepant records was found from the PP's records.

Since no discrepant records were found, therefore, the PP's set of records have been accepted based on the acceptance sampling. This is in line with the paragraph 32 of Standard "Sampling and surveys for CDM project activities and programmes of activities" version 09.0 and found acceptable.

The key personnel interviewed through the sit visit are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Yogesh Mishra	Country manager	EKI Energy Services Limited	Inclusion of new project activity instances
Mr. Rajib Pramanik	Deputy General Manager	EKI Energy Services Limited	Operation of the grouped project activity;
Mr. Sachin Nagarkar	Senior Manager	EKI Energy Services Limited	Implementation of monitoring plan of the grouped project activity;
Mr. Emmanuel Kwabena	Field executive	EKI Energy Services Limited	Data collection and data achievement;
Mr. Charles Asamoah	Field executive	EKI Energy Services Limited	Sampling and survey Data collection and ER calculation.
Mr. George	Field executive	Sustainable Technologies (SETECH) Energy Limited	Sustainable Development Goals (SDGs) Trainings and employment
Mr. Latif	Field executive	Sustainable Technologies (SETECH) Energy Limited	Stakeholder grievance mechanism

Mr. Adutum	Field executive	Jackgk Trust Enterprise	
Mr. Godfred	Field executive	Jackgk Trust Enterprise	

2.4 Site Visits

The assessment team performed the on-site verification in different part of the host country – Ghana during 18-March-2024 to 22-March-2024. The interviewed personnel including the role and organization and objective are listed in above table in the section 2.3. The list of interviewed end users is provided below:

For Obaapa stoves:

Name	ICS no.	Subject discussed
BOAKYE ATTA	EKIGH-22/L1/0005849	Personal details, ICS identification number, signed end user contract, ICS condition, distribution and operation of ICS, seasonal variation in the fuel use, fuel use difference between baseline and project stove, no. of meals prepared, Stakeholder feedback mechanism, SDGs etc.
ESTHER NYAMEKYE	EKIGH-22/L1/0003648	
FORTUNATE WETAGIGA	EKIGH-22/L1/0002925	
OFORI REBECCA	EKIGH-22/L1/0031295	
OSEI ROSE	EKIGH-22/L1/0030675	
CHARLOTTE BOADI	EKIGH-22/L1/0058702	
FATI AWUDU	EKIGH-22/L1/0053140	
GIDEON APPIAH	EKIGH-22/L1/0028782	
JAMES SARPONG	EKIGH-22/L1/0073064	
LUCY APPIAH	EKIGH-22/L1/0060240	
OWUSU ISAAC	EKIGH-22/L1/0075811	
YVON DARKO	EKIGH-22/L1/0027030	
AGYEIWAA AFUA	EKIGH-22/L3/0023820	
BARIKISU SALIFU	EKIGH-22/L3/0020499	
EUNICE BOAKYEWAA	EKIGH-22/L3/0033950	
AKUA GYAMFUAA	EKIGH-22/L1/0044694	
DONKOR GIFTY	EKIGH-22/L1/0062175	
RITA BOAKYE	EKIGH-22/L1/0044950	

For Gyaapa stoves:

Name	ICS no.	Subject discussed
ADJEI PRISCILLA	EKIGH-22/L2/0105471	Personal details, ICS identification number, signed
TETHEY AYERTEY	EKIGH-22/L2/0110932	
ACHEAMPONG GRACE	EKIGH-22/L2/0036795	

MAGLO SOSSEY	EKIGH-22/L2/0036921	end user contract, ICS condition, distribution and operation of ICS, seasonal variation in the fuel use, fuel use difference between baseline and project stove, no. of meals prepared, Stakeholder feedback mechanism, SDGs etc.
GANYO AKU	EKIGH-22/L2/0039716	
ODEIBEA AFUA	EKIGH-22/L2/0053351	
OPAREBEA ETHEL	EKIGH-22/L2/0022565	
PATIENCE ABENA DOVI	EKIGH-22/L2/0070986	
NSOWAH SOPHIA AMA	EKIGH-22/L2/0004881	
YEBOAH ELIZABETH	EKIGH-22/L2/0092522	
AMISSETU IBRAHIM	EKIGH-22/L2/0074571	
ABABIO BRIDGET	EKIGH-22/L2/0080634	
ADDAE GRACE	EKIGH-22/L2/0078057	
ASIEDUA GLADYS	EKIGH-22/L2/0107171	
SERWAA AMA JOSEPHINE	EKIGH-22/L2/0087139	
SENYO AUGUSTINA	EKIGH-22/L2/0106765	
ADUOBE COMFORT DARKOA	EKIGH-22/L2/0104193	
OKYERE PAULINA DARKOA	EKIGH-22/L2/0103580	

For Gyapa Stove A stoves:

Name	ICS no.	Subject discussed
SOMA ABENA	EKIGH-22/L3/0038108	Personal details, ICS identification number, signed end user contract, ICS condition, distribution and operation of ICS, seasonal variation in the fuel use, fuel use difference between baseline and project stove, no. of meals prepared, Stakeholder feedback mechanism, SDGs etc.
KWAKYE KWAME	EKIGH-22/L3/0039666	
AMOA GRACE	EKIGH-22/L3/0002094	
AGBODZI PEACE	EKIGH-22/L3/0002252	
ESTHER NUNOO	EKIGH-22/L3/0009666	
MENSAH LINDA	EKIGH-22/L3/0043013	
AIDOO GIFTY	EKIGH-22/L3/0046876	
WIREDU RUBY	EKIGH-22/L3/0040666	
POKU ESTHER	EKIGH-22/L3/0038227	
DAWUSO CHRISTIANA	EKIGH-22/L3/0039459	
ISSAH ELVIS	EKIGH-22/L3/0037145	
ASSIBU JOYCE	EKIGH-22/L3/0013531	
BAAH KWAME	EKIGH-22/L3/0005739	
ASARE LETICIA	EKIGH-22/L3/0005076	
MENSAH ESTHER	EKIGH-22/L3/0009634	
QUAYE ALICE	EKIGH-22/L3/0005801	
EKUFFO MARY	EKIGH-22/L3/0014107	
QUAYE ABIGAIL	EKIGH-22/L3/0009377	

2.5 Resolution of Findings

As an outcome of the verification process, the team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;

- b) Modifications to the implementation, operation and monitoring of the grouped project activity has not been sufficiently documented by the project participants;
- c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

For the current monitoring period, 04 Clarification requests and 11 Corrective Action Requests were raised and successfully closed. More details are presented in appendix 3 below.

2.5.1 Forward Action Requests

A FAR was raised during the joint validation and verification conducted by the earlier VVB. Same is addressed during current verification and details could be found below in appendix 3.

2.6 Eligibility for Validation Activities

Not applicable as LGAI Technological Center, S.A. holds the accreditation for the validation and verification for projects under scope 3.

3 VALIDATION FINDINGS

3.1 Methodology Deviations

Not applicable as no deviation for methodology.

3.2 Project Description Deviations

Based on desk review and on-site visit and interviews conducted, findings were raised which led to project description deviations as mentioned below. VVB noted that the proposed deviations do not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the grouped project remains in compliance with the applied methodology. PP has described and justified the deviations in the monitoring report.

1. Deviation 1

In section 6.1 of the approved joint PD & MR (14.06.2023 PD MR_VCS 3801 .pdf), The value of efficiency of the Gyapa (Stove A) model (η_{p3}) was not mentioned, The Gyapa (Stove A) model is newly added in this monitoring period.

Thus, the details of efficiency of the Gyapa (Stove A) model are now added under the table for “Data and Parameters Available at Validation” under the section 4.1 of this MR.

VVB has checked and confirmed that monitoring report is revised accordingly. The technical specifications including efficiency of the Gyapa (Stove A) were checked during the desk review and confirmed.

The nature of deviation is permanent and this change shall be applicable for the subsequent verifications as well. VVB confirms, this deviation doesn't impact the applicability of the methodology, additionality or appropriateness of the baseline scenario or the emission reduction calculations and is valid. It further confirms that the deviation is appropriately described and justified in the VCS MR, and the project remains in conformance with the VCS rules.

2. Deviation 2

During on-site interviews, the actual procedure followed for grievance/ feedback was found deviated from the details provided in the registered VCS PD hence PP has applied a deviation. The actual procedure followed by the end user is given below which was checked and confirmed during on-site interviews.

In case of any complaint/ issues with the distributed cookstove, the end user of ICS / cookstove user approaches the assembly man (Village Head). The Assembly man conveys this complaint/grievance to the distributor and distributor informs this further to the local agent of PP. On receipt of complaint/grievance, person from EKIESL attend this complaint and get it rectified. End user is requested to fill up a form upon satisfactory resolution of the complaint. A detailed actual procedure which was checked and confirmed during on-site visit is now included in the MR which is acceptable.

The nature of deviation is permanent and this change shall be applicable for the subsequent verifications as well. VVB confirms, this deviation doesn't impact the applicability of the methodology, additionality or appropriateness of the baseline scenario or the emission reduction calculations and is valid. It further confirms that the deviation is appropriately described and justified in the VCS MR, and the project remains in conformance with the VCS rules.

3. Deviation 3

In the section 3.4 of the registered joint PD&MR, PP had mentioned wood as a baseline fuel which was a typographical error as baseline survey has established charcoal as the baseline fuel in traditional cookstoves or three-stone fire stove within the project region. Same had been validated by VVB at the time of joint validation and verification.

Hence, PP has now applied deviation to correct and make baseline scenario consistent as continued use of non-renewable fuel (i.e. charcoal) by the target population to meet similar thermal energy needs as provided by project cookstoves in the absence of project activity.

The nature of deviation is permanent and this change shall be applicable for the subsequent verifications as well. VVB confirms, this deviation doesn't impact the applicability of the methodology, additionality or appropriateness of the baseline scenario or the emission reduction calculations and is valid. It further confirms that the deviation is appropriately described and justified in the VCS MR, and the project remains in conformance with the VCS rules.

4. Deviation 4

As per the registered VCS PDMR, 20,102 ICS were distributed and an average annual GHG emission reduction for the group project activity were expected to be 72,030 tCO₂e which was less than or equal to 300,000 tCO₂e/ year.

During current monitoring period, PP has distributed additional cookstoves and due to this there is a revision in estimated average annual emission reductions. This led to change in the project scale, the project has been shifted to 'large projects' as the amount of average annual GHG emission reductions are now greater than 300,000 tCO₂e/ year.

The nature of deviation is permanent and this change shall be applicable for the subsequent verifications as well. VVB confirms, this deviation doesn't impact the applicability of the methodology, additionality or appropriateness of the baseline scenario or the emission reduction calculations and is valid. It further confirms that the deviation is appropriately described and justified in the VCS MR, and the project remains in conformance with the VCS rules.

5. Deviation 5

In the section 1.6 of the registered joint PD&MR, the name of the other entities who were involved in the distribution process were inadvertently missed out. Same is now mentioned in section 1.5 of the MR.

As a part of on-site inspection, VVB has interviewed other entities except the project proponent which were missing the registered VCS PD&MR.

The nature of deviation is permanent and this change shall be applicable for the subsequent verifications as well. VVB confirms, this deviation doesn't impact the applicability of the methodology, additionality or appropriateness of the baseline scenario or the emission reduction calculations and is valid. It further confirms that the deviation is appropriately described and justified in the VCS MR, and the project remains in conformance with the VCS rules.

PP has also revised materiality requirements for verification as per the large projects, as set out in VCS standard v4.6, Section 4.1.10 which is checked and confirmed. VVB confirms that all the project deviations considered in the registered VCS PDMR are valid and appropriate.

3.3 New Grouped project activity Instances in Grouped Projects

For the current monitoring period, the grouped project has added 189,278 nos. of ICS i. e. project activity instances. These new project activity instances were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period which is checked and confirmed based project database and monitoring survey conducted.

Section 1.4 of the registered VCS PDMR has mentioned eligibility criteria for the new project activity instances which were assessed by VVB as below:

VVB has checked and confirmed that inclusion of new project activity instances is valid as it follows the required criteria mentioned in section 1.4 of registered VCS PDMR and applicable VCS requirements.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
1	Meet the applicability conditions set out in the methodology applied to the project: Applicability conditions which were set out in Section 3.2 of registered joint PD & MR: a) Project activities shall be implemented in domestic premises or community-based kitchen b) The project stove shall have specified high-power thermal efficiency of at least 25% per the manufacturer's specifications and shall exclusively use woody biomass and can be single-pot or multi-pot	New project activity instances (Energy Efficient Cookstoves) were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana. All instances meet the applicability conditions which were set out in Section 3.2 of registered joint PD & MR, where the target of the end-user is household and the ICS deployed is at least 25% of thermal efficiency. The ICS efficiency of distributed cookstove is more than 25% of the thermal efficiency. The technical specification added in section 3.3 of MR.	PP has submitted project database and monitoring survey record. During desk review and on-site visit, project database was randomly checked to confirm that the ICS are distributed within the geographical limits of Republic of Ghana. Each new distributed ICS is given to households and deployed ICS have at least 25% of thermal efficiency as confirmed based on on-site interviews with end users, PP representatives, project database and technical specifications of distributed ICS models. The actual thermal energy requirements for the distributed ICS are as below: Gyapa: 37.00%

			• Obaapa: 36.00% • Gyapa (Stove A): 36.00% Thus this criterion applicability is satisfied.
2	Use the technologies or measures specified in the project description.	The technology used for the project activity is energy-efficient cookstoves. Only energy efficient cook stoves are to be adopted in the project by replacing traditional cookstoves in households.	As per registered VCS PDMR, only energy efficient cook stoves are to be adopted in the project by replacing traditional cookstoves in households. VVB has confirmed the technical specifications of all 3 different models being distributed as a part of current monitoring period to confirm that these cook stoves are energy efficient (more than 25% thermal efficiency) in comparison to traditional cookstoves in the household. This was also cross checked through end user interviews conducted during on-site visit. Thus this criterion applicability is satisfied.
3	Apply the technologies or measures in the same manner as specified in the project description.	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period have used only energy efficient cookstoves adopted in the project by replacing traditional cookstoves in household and same have been provided at free of cost.	As per registered VCS PDMR, only energy efficient cook stoves are to be adopted in the project by replacing traditional cookstoves in households. VVB has confirmed the technical specifications of all 3 different models being distributed as a part of

			current monitoring period to confirm that these cook stoves are energy efficient (more than 25% thermal efficiency) in comparison to traditional cookstoves in the household. This was also cross checked through end user interviews conducted during on-site visit. VVB further confirmed during the on-site interviews with end users and PP representatives that these ICS are distributed free of cost to them. Thus this criterion applicability is satisfied.
4	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	The new project activity instances, specifically the Improved Cookstoves (ICS), meet the eligibility criteria for inclusion as outlined in Section 1.4 (point 4) of the registered Project Description and Monitoring Report (PDMR). These instances are installed within Ghana, which falls within the defined geographical boundary of the grouped project. Consequently, they are subject to the same baseline scenario as determined in Section 3.4 of the registered PDMR, namely the use of a three-stone fire with charcoal as fuel.	As per the registered VCS PDMR, the new project activity instances will be installed within Ghana subject to the same baseline scenario determined in Section 3.4 of the same. VVB during onsite interviews with end users and PP representatives to confirm that the baseline scenario in the absence of improved cook stove was traditional/three stone fire stove using charcoal. Thus the baseline identified in the section 3.4 of registered VCS PDMR is still valid.

			The newly added project activity instances are included within the geographical boundary of Republic of Ghana and hence re-assessment of baseline is not required is confirmed and acceptable. Thus this criterion applicability is satisfied.
5	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period are using the below activity method for demonstration of additionality. Step 1: Regulatory Surplus There is no mandated government programme or policy in host country of this project ensuring the distribution of new energy efficient cookstoves for each project activity instances. Step 2: Positive List The inclusion of new project activity instances will comply with the positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology because the ICS will be distributed free of cost to the end users and project has no other source of revenue other than the sale of GHG credits. Thus, it is evident that the newly added instances share the same additionality characteristics and are	VVB has checked and confirmed that the host country of Ghana has not mandated any government programme or policy regarding use of improved cook stoves by the households in the country. Thus,. Step 1 of the activity method is satisfied. VVB during on-site interviews with end users and PP representatives confirmed that the ICS are given to end users free of cost. This was further confirmed from the contract signed between PP and end user which confirms that ICS will be distributed free of cost to them. Thus VVB confirms that newly added project activity instances are additional as per requirement set in the registered VCS PDMR. Thus this criterion applicability is satisfied.

		consistent with the initial instances for the specified project activity and geographic area.	
6	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: Each project activity instance that exceeds one percent of the capacity limit shall be identified. Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period does not exceed the applicable limit, which is 180 GWh_{th}/y. Since the project activity instances have same model, hence expected annual energy saving for each instance is 0.0191 GWh_{th}/y which is less than 0.02% of the threshold limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters.	VVB noted that with current project activity instances distribution, total project activity instances added within the grouped project are 209,380 nos. None of the project activity instance has higher energy savings than 0.0191 GWh_{th}/y which is less than 0.02% of the threshold limit. VVB confirms that as the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters. Thus this criterion applicability is satisfied.

	(Ref. section 3.6.8 of the VCS standard v4.6)		
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As per registered VCS PDMR, along with the above points, the Inclusion of New Project Activity Instances follows the below criteria for the inclusion of new project activity instances subsequent to the initial validation of the project.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
1	Occur within one of the designated geographic areas specified in the project description	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period. These regions are all located within the geographic boundaries of Ghana, as specified in registered joint PD & MR.	VVB has checked the project database and monitoring survey records to confirm that newly added project activity instances are located within the geographic boundaries of Ghana. Thus this criterion applicability is satisfied.
2	Comply with at least one complete set of eligibility criteria for the inclusion of new project activity instances. Partial compliance with multiple sets of eligibility criteria is insufficient.	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period are included in the project activity instances comply with complete set of eligibility criteria as mentioned above.	VVB has checked and confirmed that newly added project activity instances included in the current monitoring period satisfies the eligibility criteria as assessed in the above table. Thus this criterion applicability is satisfied.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
3	Be included in the monitoring report with sufficient technical, financial, geographic and other relevant information to demonstrate compliance with the applicable set of eligibility criteria and enable sampling by the validation/verification body.	Sufficient technical, financial, geographic and other relevant information on the new project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period instances information have been included in the current monitoring report to demonstrate compliance with the applicable set of eligibility criteria and enable sampling by the validation/verification body	VVB has checked and confirmed that new project activity instances information which is included in the monitoring report has sufficient technical, financial, geographic, and relevant information which demonstrated compliance with the applicable set of eligibility criteria and enable sampling by the validation/verification body based on submitted monitoring report, project database, technical specifications of ICS, interviews with end users, PP representatives. Thus this criterion applicability is satisfied.
4	Be validated at the time of verification against the applicable set of eligibility criteria	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period have been included by validating eligibility criteria as mentioned in this document	VVB has checked and confirmed that newly added project activity instances included in the current monitoring period satisfies the eligibility criteria as assessed in the above table. Thus this criterion applicability is satisfied.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
5	Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance (i.e., the date upon which the project activity instance began reducing or removing GHG emissions)	All new project activities, added Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period, have documented ownership by the project proponent from their respective start dates.	VVB during the desk review has checked the end user contracts which confirmed that the project ownership lies with EKI for all the project activity instances. This was cross checked with the end users during on-site interviews. Thus this criterion applicability is satisfied.
6	Have a start date that is the same as or later than the grouped project start date	Start date of each of the new project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period has been included in the project activity instances are after the start date of grouped project activity. As per distribution data base submitted to VVB the start date of each of the new project activity instances included in the project activity instances are after the start date of grouped project activity.	VVB has checked the project database, monitoring survey report which confirmed that newly added project activity instances have start date post the grouped project start date i. e. 16-January-2023. Thus this criterion applicability is satisfied.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
7	Be eligible for crediting from the start date of the instance through to the end of the project crediting period (only). Note that where a new project activity instance starts in a previous verification period, no credit may be sought for GHG emission reductions or removals generated during a previous verification period (as set out in Section 3.4.4 of VCS standard version 4.1) and new instances are eligible for crediting from the start of the next verification period	New project activity instances which were added in Ashanti, Eastern, Central, Northern & Greater Accra regions of Ghana in the current monitoring period are eligible to claim credits from crediting period start date to the end of the project crediting period.	VVB has checked and confirmed that new project activity instances added during the current monitoring period will be eligible to claim credits from crediting period start date to the end of the project crediting period. This is confirmed based on the project database which confirmed that all the newly added project activity instances have start date post crediting period start date. Thus this criterion applicability is satisfied.
8	Only eligible for crediting from the start of the verification period in which they were added to the grouped project.	New project activity instances will adhere to this criterion by being eligible for crediting only from the beginning of the verification period in which they are included in the grouped project	VVB has checked and confirmed that new project activity instances added during the current monitoring period will be eligible to claim credits from the beginning of the verification period in which they are added. PP will claim credits for these newly added project activity instances from start of date of current monitoring period i. e. 01-March-2023.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
			Thus this criterion applicability is satisfied.
9	Not be or have been enrolled in another VCS project.	New project activity instances will not be previously registered or currently enrolled in any other VCS project.	VVB has checked the project database which confirm that each ICS has got unique serial number. This ensures that the project will not be double counted which is acceptable. Further, VVB referred to projects undergoing validation/registration with VCS and confirmed that these projects do not have same ICS model as distributed by the PP. PP has also provided declaration that project activity instances included are not previously registered or currently enrolled in any other VCS project. Thus this criterion applicability is satisfied.
10	Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in 3.6.8 -3.6.9.	In line with section 3.6.8 of the VCS standard v4.6 all singular project activity instances within ten kilometres of another instance of this project activity with EKI Energy Services Limited will be consider within this current project activity only Project ID 3801).	PP has 2 grouped projects implemented in the host country. The one is current project and other one is under validation (https://registry.verra.org/app/projectDetail/VCS/3983) . PP confirms that it has ensured that all the project activity instances within 10 km of other instances are included in this project.

No.	Criterion	How the new project activity instances comply the requirement	VVB assessment
			Assessment with respect to para 3.6.9 is already discussed in the above table and found appropriate. Thus this criterion applicability is satisfied.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

Not applicable as the project does not undergo baseline reassessment during the monitoring period.

4 VERIFICATION FINDINGS

4.1 Project Details

Item	Evidence gathering activities, evidence checked, and assessment conclusion:
Audit history	<i>By checking registered PDMR /3/ and information on the VERRA website, the audit history mentioned in the MR has been confirmed to be correct</i>
Double counting and participation under other GHG programs	<i>Through reviewing the registered PDMR /3/ and validation report /4/, it was validated that the project has been registered as a VCS project with reference No. 3801 which is available at https://registry.verra.org/app/projectDetail/VCS/3801. Sufficient information has been provided for confirming whether the project is registered or seeking registration under any other GHG programs or rejected by another GHG program. The project does not participate in other emissions trading program is confirmed by checking public information on Internet, interviewing PP representatives and statement issued by project</i>

	proponent. Also, it has not been rejected by another GHG program as evident from review of other GHG registries. During the 1st crediting period i. e. from 16-January-2023 to 15-January-2030, the project would claim only for VCUs. Therefore, Applus+ Certification consider the project is eligible to participate under the VCS Program as there is no double counting for the emission reduction during any period.
No double claiming with emissions trading programs or binding emission limits	The GHG emission reductions or removals generated by the project have not become included in an emissions trading program or any other mechanism that includes GHG allowance trading. The same has been checked through declaration from the project proponent and review of GHG registries. The host country of the project does not have a national registry and thus the project's registration with host country's remission reduction program/registry is not possible. Therefore, Applus+ Certification confirm no double claiming with emissions trading programs or binding emission limits.
No double claiming with other forms of environmental credit	The grouped project activity has not received or sought any other form of environmental credits or has become eligible to do so since validation or previous verification. The same has been checked through declaration from the project proponent. Therefore, Applus+ Certification confirm no double claiming with other forms of environmental credit.
Supply chain (scope 3) emissions double claiming	The grouped project activity includes distribution of fuel-efficient ICS thereby replacing the use of inefficient cookstoves and does not involve in supply chain (scope 3) emissions double claiming.
Sustainable development contributions	By checking registered VCS PD /3/, 17 SDGs defined by United Nations Development Program (UNDP), interviewing with end users, other stakeholders during site visit, the verification team confirmed that the grouped project activity would contribute sustainable development in the region. The specific sustainable development goals that the grouped project activity achieved for this monitoring period are as below: SDG 13.0 - Tonnes of greenhouse gas emissions avoided or removed

The project reduces use of charcoal through use of efficiency cookstoves as confirmed based on registered VCS PDMR, current monitoring report and on-site visit. For the current monitoring period, the expected GHG emission reductions and removals are 545,780 tCO₂e as confirmed based on submitted ER calculations.

SDG 1.1.1 - Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)

VVB checked the employment records and attendance sheets along with salary records for the 308 people employed by the project on sample basis to confirm that they receive minimum income of GHS 1,200 to 1,800 per month. VVB noted that this salary is more than the limit mentioned under International Poverty Line¹ and noted that this brings them over and above the same. The actual salary receipt by the employed people is confirmed based on interviews, salary records submitted and declaration by distributors regarding the same.

SDG 3.9.3 - Project-specific indicator: Number of households experiencing reduction in particulate matter

VVB has checked project database, monitoring survey results and interviewed end users on sample basis to confirm that 209,380 ICS are distributed (out of which 189,278 ICS were distributed in the current monitoring period) which has led to reduction in particulate matter which was also confirmed by interviewed end users during on-site visit.

SDG 7.1.2 Proportion of population with primary reliance on clean fuels and technology

¹ https://databankfiles.worldbank.org/public/ddpext_download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF000A/current/Global_POVEQ_GHA.pdf

	VVB has checked project database, monitoring survey results and interviewed end users on sample basis to confirm that 209,380 ICS (out of which 189,278 ICS were distributed in the current monitoring period) are distributed which has led to use of clean fuel and technology which was also confirmed by interviewed end users during on-site visit who confirmed that baseline stoves are no more in use and they are using only project cookstove. SDG 8.3.1 Project specific indicator: Total Number of jobs created. VVB checked the employment records and attendance sheets along with salary records on sample basis for the 413 people employed by the project to confirm that they are being employed due to this project activity. SDG 15.3.1 Proportion of land that is degraded over total land area VVB noted that the project activity has distributed fuel efficient ICS which reduces requirement of charcoal thus leading to reduction in forest cutting for preparation of charcoal. The calculated value of 324,791 tonnes of biomass saved was checked and accepted.
Additional information relevant to the project	No commercially sensitive information has been excluded from the public version of the PD or MR. The details are presented transparently to the assessment team for analysis which lead to positive conclusion for this verification.

4.2 Safeguards and Stakeholder Engagement

4.2.1 Stakeholder Identification

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Stakeholder identification	<i>By checking registered PD MR /3/, and confirmed during on-site visit, the stakeholders involved in the project has been correctly identified in the MR and in line with the same in the PD as below:</i>

	<i>The project is located in various regions of Ghana. The selected stakeholders in the registered PDMR has remained the same and were found acceptable.</i> <i>The assessment team considers the stakeholder identification of the grouped project activity as reasonable.</i>
Legal or customary tenure/access rights	<i>By checking end user contracts signed, it is confirmed that the project proponent has the legal right to distribute project cookstoves and claim carbon credits for the same.</i> <i>During on site visit interviews with PP representatives and end users, it is confirmed the project activity instances are not involved in land issues.</i> <i>Therefore, it was verified the grouped project activity does not violate any legal or customary tenure/access rights to territories and resources, including collective and conflicting rights, held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.</i>
Stakeholder diversity and changes over time	<i>Consider there are no change for the grouped project activity since the validation and the project is implemented as the design mentioned in the PD, the stakeholder diversity and changes over time is highly unlikely and this is the same as actual scenario as no stakeholder diversity and changes occurs. VVB noted that for the current verification, the new project activity instances are distributed in regions where the initial distribution had not taken place. However, in the registered VCS PDMR, the whole country was considered as a part of project boundary and stakeholders diversity was considered accordingly, VVB notes no change over time is possible.</i>
Expected changes in well-being	<i>Following expected changes in well-being has been identified and confirmed to be correct through the site visit:</i> <i>Economic well-being – the grouped project activity is likely to provide employments to the locality thus economic well beings are expected;</i> <i>Environmental well-being – As this grouped project activity reduces the carbon emissions in atmosphere through use of efficient cook stoves, it will bring environmental well-being in the locality.</i>
Location of stakeholders	<i>By site visit, it is confirmed that the location of stakeholders is various regions of the host country of Republic of Ghana.</i>

Location of resources	<i>By site visit, it is confirmed that the location of resources is in various regions of the host country of Republic of Ghana</i>
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4.2.2 Stakeholder Consultation and Ongoing Communication

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Ongoing consultation	<i>VVB during on-site visit has interviewed sample end users and PP representatives who have confirmed that, end users have the option of directly contacting a representative from a distribution channel partner. These partners typically reside in proximity to the beneficiary communities and visit the beneficiaries periodically, for the purpose of recording their complaints.</i> <i>Also, the end user can approach the Assembly Man (Village Head) in case of any complaint/ issues with the distributed cookstove. The Assembly man further conveys it to the distributor and distributor inform this to the local agent. The local agent communicates to EKI Energy Services Limited (EKIESL). A person from EKIESL attend this complaint/ issue and get it rectified. End user is requested to fill up a form upon satisfactory resolution of the complaint/ issue.</i>
Date(s) of stakeholder consultation	<i>During on-site interviews with PP representatives and end users, it is confirmed that a local stakeholder consultation meeting was held on 05-March-2024 by the project proponent. Before the stakeholder consultation meeting, the project information with contact information and the stakeholder meeting notice were published on the bulletins at and nearby the project site on 23-February-2024 to invite Local stakeholders.</i> <i>During the meeting, the project information and the continuous input / grievance mechanism have been introduced to the local stakeholders. The project information with contact information has also been posted on the bulletins at and nearby the project site.</i> <i>VVB has checked the meeting report and as confirmed during on-site visit, during this monitoring period, 1 meeting was organized at Kumasi on 05-March-2024 to collect comments from all stakeholders, such as representatives of local government, end users, and the project proponent and so on.</i>

Communication of monitored results	VVB has checked the meeting report and confirmed that the local stakeholder has no negative comments for the ongoing grouped project activity.
Consultation records	VVB has checked the meeting report and confirmed the PP explained about the project and its ongoing progress. PP also discussed and explained about ongoing grievance mechanism. The meeting report also confirmed that all the consultation records are maintained and is available in the local office of PP. The project information with contact information of local distribution team was made available to the stakeholders. The end users were aware of the same.
Stakeholder input	By checking meeting report, filled up questionnaires, grievance register and on-site visit, it is confirmed that there were no negative inputs received during the current monitoring period.

4.2.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Consent	VVB noted that launching and operating a improved cookstove program did not need a consent from government body when the project was registered with VCS. The review of sample end user agreements and on-site interviews with end users has confirmed that PP has legal ownership of carbon credits. VVB has checked periodic stakeholder meeting report, questionnaires, grievance records and through on-site visit that the local stakeholders held full right for FPIC. Therefore, it was verified the grouped project activity does not violate any legal rights held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.
Outcome of FPIC discussion	As mentioned above, the grouped project activity does not need any legal permit for operation from the host country as no such information is available for the concerned host country – Ghana and

	<i>the local stakeholders have no negative comments for the operation of the grouped project activity.</i> <i>The grouped project activity involves distribution of cookstoves and has not encroached on land, relocated people without consent, and forced physical or economic displacement.</i> <i>The assessment team confirmed that the local stakeholders held full right for FPIC. and the grouped project activity does not violate any legal rights held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.</i>
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4.2.4 Grievance Redress Procedure

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Grievance received and steps taken to resolve the grievance including the outcomes of the resolution	<i>Not applicable as no negative comments have been received for the grouped project activity during the current monitoring period. Also, the assessment team confirm the procedure is easily accessible to stakeholders for ongoing consultation as described as above.</i>
Grievance redress procedure	<i>Not applicable as no negative comments have been received. Also, the assessment team confirm the procedure is easily accessible to stakeholders for ongoing consultation as described as above.</i>

4.2.5 Public Comments

Comments received	Actions taken by the project proponent	Evidence gathering activities, evidence checked, and assessment conclusion
<i>No negative comments received from public channel.</i>	<i>Not applicable as no negative comments received from public channel.</i>	<i>By checking meeting report, grievance records, VERRA website and through on-site visit, it is confirmed that there were no negative inputs received during both construction and operation phase.</i>

4.2.6 Risks to Local Stakeholders and the Environment

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Risks to stakeholder participation	VVB during on-site visit noted that no risks have been identified to stakeholder participation. Therefore, it was verified no risks have been identified to stakeholder participation.
Working conditions	During the on-site visit, it is confirmed that the staff of the project is working under as per internationally approved working conditions. No risks identified for working conditions.
Safety of women and girls	During the on-site visit it was confirmed that, the project involves distribution of efficient cookstoves, leading to safety of women and girls through not using baseline stoves.
Safety of minority and marginalized groups, including children	VVB noted that the country has strict prohibition for child labour. Thus, project does not involve child labour during operation of the grouped project activity. In the HR policy of PP, it is also mentioned that no child labour will be entertained. The same was confirmed by the assessment team through checking HR Records and Staff Roaster and on-site interviews. During the site visit, it is confirmed that no minors have been hired by the project proponent. No child labor detected working for the grouped project activity. No risks identified for safety of minority and marginalized groups, including children as not applicable for the project.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	The current grouped project activity does not involve generation of any pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials) etc. The project cookstoves generate ash from charcoal burning which is disposed of in the nearby area by the end users as confirmed during the site visit.

4.2.7 Respect for Human Rights and Equity

4.2.7.1 Labor and Work

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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Discrimination and sexual harassment	VVB has checked the declaration provided by PP about no discrimination or sexual harassment which was cross checked during the on-site visit interviews and confirmed. The project does not create any direct or indirect impacts on gender equality and/or the situation of women: a. Minors under the age of 16 are not allowed to be recruited. Through the site interview and checking employment records, the assessment team was able to confirmed that no minors under the age of 16 were employed, women or girls older than 16 were employed on a voluntary basis, and no slavery, imprisonment, physical and mental drudgery, punishment or coercion to women and girls. b. The Project will not restrict women's rights or access regarding natural resources. c. Marital status is completely irrelevant to the Project. The PP does not discriminate on gender, caste, religion etc.
Management experience	VVB during desk review and on-site visit has confirmed that PP has selected 03 partners for manufacturing and distribution of project cookstoves. The details of these entities as presented in the MR were checked and their representatives were interviewed during on-site visit to confirm the managerial experience.
Gender equity in labor and work	VVB noted that PP ensures that there is no violation for Gender equity in labor and work detected. By checking employment records and interviewing PP representatives, it was verified the Project design neither increase women's workload nor prevent them from engaging in other activities. The grouped project activity has equal opportunity for women and men to contribute both in volunteer and working positions. The PP has a HR policy and same is followed equally. The project proponent has a specified HR policy that considers participation by both men and women. Besides, Ghana also ratified relevant ILO core conventions on equality, namely Equal Remuneration Convention (Convention No 100). Therefore, it is confirmed equal opportunities have been provided by the grouped project activity in the context of gender equity and pay for labor and work.

Human trafficking, forced labor, and child labor	VVB noted that forced labor is an illegal activity in the host country and the local labor compliance takes into account of the same. Further, Ghana is a party to ILO and forced labour is illegal in Ghana. Ghana has strict prohibition for child labour. The grouped project activity does not involve in operation of grouped project activity. In the HR policy is also mentioned that no child labour will be entertained. The same was confirmed by the assessment team through checking HR Records and site interview. By site visit, it is confirmed no human trafficking, forced labor, and child labor detected.
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4.2.7.2 Human Rights

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Human rights	VVB has confirmed that the grouped project activity does not discriminate with regards to participation and inclusion. It abides the rules of equality accordingly and does not involve and is not complicit in any form of discrimination. Specific to gender equality, detailed enforcement rules are regulated in “Women’s Rights Protection Law” to provide support and benefits to women.

4.2.7.3 Indigenous Peoples and Cultural Heritage

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Preservation and protection of cultural heritage	VVB based on desk review and onsite visit confirmed that no indigenous peoples present in or within the area of influence of the project activity instances, the grouped project area does not include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. Hence not applicable for the grouped project activity.

4.2.7.4 Property Rights

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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Disputes over rights to territories and resources	<i>Not applicable as no IPs', LCs', and customary rights holders' property rights was identified.</i>
Respect for property rights	<i>Not applicable as no IPs', LCs', and customary rights holders' property rights was identified.</i>

4.2.7.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Summary of the benefit sharing plan	<i>Not applicable as no property rights involved for the project.</i>
Benefit sharing during the monitoring period	<i>Not applicable as no property rights involved for the project.</i>

4.2.8 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Impacts on biodiversity and ecosystems	<i>No risk identified</i>
Soil degradation and soil erosion	<i>No risk identified</i>
Water consumption and stress	<i>No risk identified</i>
Usage of fertilizers	<i>No risk identified</i>

4.2.8.1 Rare, Threatened, and Endangered species

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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Species or habitat	No risk identified
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4.2.8.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
Not applicable	No risk identified

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
Not applicable	No risk identified

4.2.8.3 Ecosystem conversion

Item	Evidence gathering activities and evidence checked
Ecosystem conversion	No risk identified.

4.3 Accuracy of Reduction and Removal Calculations

Desk review and on-site visit conducted has confirmed that all physical features of the grouped project activity in the registered VCS PDMR /3/ are in place and the PP has operated the project activity instances as per registered VCS PDMR /3/. The grouped project activity consists of a 209,380 improved cookstoves (ICS) as confirmed based on desk review and on-site visit.

There are few deviations in the registered VCS PDMR which are assessed and found acceptable as discussed above in section 3.2 of this report. There was no special event which could affect the monitoring of the grouped project activity during the monitoring period.

Desk review of the submitted documents as mentioned in the appendix 2 below and on-site interviews with the end users and PP representatives were instrumental to confirm the accuracy of reductions and removals, including accuracy of spreadsheet formulae, conversions and aggregations, and consistent use of the data and parameters. Assessment also checked and confirmed that the methods and formulae set out in the project description for calculating baseline emissions, project emissions and leakage emissions are followed and the default values considered are appropriate in the monitoring report and the values are in conformance with the VCS Program rules.

The monitoring has been conducted in accordance with the monitoring plan contained in the registered VCS PDMR /3/. All parameters were monitored and determined as per the monitoring plan which is listed in below table:

Data / Parameter:	N _{y,j,j}
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Data unit:	Number																																
Description:	Number of project devices of type I and batch j operating during year y																																
Purpose of the data:	Calculation of emission reductions																																
Parameter value:	209,380 (20,102 ICS in 1st Monitoring Period + 189,278 ICS add on in 2nd monitoring Period) <table><tr><th rowspan="2">Sl. No.</th><th rowspan="2">Model</th><th colspan="3">Cookstove Distributed in each Monitoring period</th></tr><tr><th>1st Monitoring period from 16-January-2023 to 28-February-2023</th><th>2nd Monitoring period from 01-March-2023 to 31-January-2024</th><th>Total Cookstove distributed</th></tr><tr><td>1</td><td>Gyapa</td><td>18,893</td><td>104,920</td><td>123,813</td></tr><tr><td>2</td><td>Obaapa</td><td>1,209</td><td>58,810</td><td>60,019</td></tr><tr><td>3</td><td>Gyapa(Stove A)</td><td>0</td><td>25,548</td><td>25,548</td></tr><tr><td colspan="2">Total Cookstove distributed</td><td>20,102</td><td>189,278</td><td>209,380</td></tr></table>					Sl. No.	Model	Cookstove Distributed in each Monitoring period			1 st Monitoring period from 16-January-2023 to 28-February-2023	2 nd Monitoring period from 01-March-2023 to 31-January-2024	Total Cookstove distributed	1	Gyapa	18,893	104,920	123,813	2	Obaapa	1,209	58,810	60,019	3	Gyapa(Stove A)	0	25,548	25,548	Total Cookstove distributed		20,102	189,278	209,380
Sl. No.	Model	Cookstove Distributed in each Monitoring period																															
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3	Gyapa(Stove A)	0	25,548	25,548																													
Total Cookstove distributed		20,102	189,278	209,380																													
Source of data used:	Monitoring survey records. The proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value. The details of monitoring survey are mentioned in section 4.3 of MR which were checked and confirmed. All the interviewed stakeholders mentioned in section 2.4 above during on-site interviews have confirmed that their ICS are operational and are in use from the date of installation which further confirmed the PP's choice to consider proportion of operational stoves as 100%.																																
Monitoring method, frequency and equipments:	At least once every two years.																																
Calibration:	Not applicable																																
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.																																

Means of verification:	VVB during on-site visit and desk review confirmed that PP has distributed one ICS per household and the same is followed for each project activity instance.
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Data / Parameter:	$\eta_{new,y,i,j}$																																
Data unit:	Fraction																																
Description:	The efficiency of the improved cook stove type i and batch j (i.e Gyapa project stove, Obaapa Clean stove and Gyapa (Stove A) respectively) determined as per equation 5 of methodology during year y																																
Purpose of the data:	Calculation of emission reductions																																
Parameter value:	For ex-ante calculation, the value of - Gyapa project stove below is applied <table border="1"> <thead> <tr> <th>Year(y)</th><th>$\eta_{new,y,i,j}$</th></tr> </thead> <tbody> <tr><td>1</td><td>34.78%</td></tr> <tr><td>2</td><td>34.43%</td></tr> <tr><td>3</td><td>34.09%</td></tr> <tr><td>4</td><td>33.75%</td></tr> <tr><td>5</td><td>33.41%</td></tr> <tr><td>6</td><td>33.08%</td></tr> <tr><td>7</td><td>32.74%</td></tr> </tbody> </table> - Obaapa Clean stove below is applied <table border="1"> <thead> <tr> <th>Year(y)</th><th>$\eta_{new,y,i,j}$</th></tr> </thead> <tbody> <tr><td>1</td><td>33.84%</td></tr> <tr><td>2</td><td>33.50%</td></tr> <tr><td>3</td><td>33.17%</td></tr> <tr><td>4</td><td>32.83%</td></tr> <tr><td>5</td><td>32.51%</td></tr> <tr><td>6</td><td>32.18%</td></tr> <tr><td>7</td><td>31.86%</td></tr> </tbody> </table>	Year(y)	$\eta_{new,y,i,j}$	1	34.78%	2	34.43%	3	34.09%	4	33.75%	5	33.41%	6	33.08%	7	32.74%	Year(y)	$\eta_{new,y,i,j}$	1	33.84%	2	33.50%	3	33.17%	4	32.83%	5	32.51%	6	32.18%	7	31.86%
Year(y)	$\eta_{new,y,i,j}$																																
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	Gyapa (Stove A) below is applied <table> <tr> <th>Year(y)</th><th>$\eta_{new,y,i,j}$</th></tr> <tr> <td>1</td><td>33.84%</td></tr> <tr> <td>2</td><td>33.50%</td></tr> <tr> <td>3</td><td>33.17%</td></tr> <tr> <td>4</td><td>32.83%</td></tr> <tr> <td>5</td><td>32.51%</td></tr> <tr> <td>6</td><td>32.18%</td></tr> <tr> <td>7</td><td>31.86%</td></tr> </table>	Year(y)	$\eta_{new,y,i,j}$	1	33.84%	2	33.50%	3	33.17%	4	32.83%	5	32.51%	6	32.18%	7	31.86%
Year(y)	$\eta_{new,y,i,j}$																
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2	33.50%																
3	33.17%																
4	32.83%																
5	32.51%																
6	32.18%																
7	31.86%																
Source of data used:	Technical specifications of ICS distributed and calculations for annual degradation in line with methodology																
Monitoring method, frequency and equipments:	Once at the time of project stove installation																
Calibration:	Not applicable																
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.																
Means of verification:	VVB noted that efficiency values are selected as per Option V from the applied methodology i. e. “Efficiency of the improved cookstoves can also be estimated ex-ante using equation 5 above where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored”. Since during current monitoring period, new ICS model – Gyapa Stove A was introduced, details about the same are also added. Efficiency of ICS depends on the installation date of the ICS. And VVB confirmed that for each of the newly added ICS, the efficiency was calculated from year 1 of ex ante.																

Data / Parameter:	$B_{y=1,new,i,j,survey}$
Data unit:	Tonnes
Description:	Annual quantity of fuel wood used by improved cook stoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey.

Purpose of the data:	Calculation of emission reductions
Parameter value:	1. For Gyapa project stove - 8.55 kg/device/day or equal to 3.119 tonnes/device/year. 2. For Obaapa Clean stove - 8.36 kg/device/day or equal to 3.051 tonnes/device/year. 3. For Gyapa (Stove A) - 6.62 kg/device/day or equal to 2.415 tonnes/device/year.
Source of data used:	Monitoring survey
Monitoring method, frequency and equipments:	Determined in the first year of project implementation.
Calibration:	VVB has checked the weighing scales used for measuring the charcoal consumption are periodically calibrated.
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.
Means of verification:	VVB has checked the survey records and noted that fuel consumption was measured on sample basis and data is available for review. During on-site visit, VVB also conducted fuel consumption checks using the same calibrated weighing scales. The detailed calculation presented in MR and ER sheet was checked and found appropriate.

Data / Parameter:	$\eta_{old,ij}$
Data unit:	Faction
Description:	The efficiency of baseline cookstove
Purpose of the data:	Calculation of emission reductions
Parameter value:	0.2
Source of data used:	Default value as per the methodology
Monitoring method, frequency and equipments:	Not applicable
Calibration:	Not applicable
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.

Means of verification:	VVB noted that the baseline survey has established baseline device as a three-stone fire using charcoal, or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney, hence default value of 0.2 is considered for Efficiency of the baseline cookstove in line with the applied methodology.
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Data / Parameter:	<i>Life span</i>
Data unit:	years
Description:	Operating lifetime of project device for projects opting Equation 5 for determining project stove efficiency
Purpose of the data:	Calculation of emission reductions
Parameter value:	7 (Applicable for Gyapa, Obappa & Gyapa (stove A) models)
Source of data used:	Manufacturer's specification
Monitoring method, frequency and equipments:	This is ex-ante fixed value based on manufacturer's specifications and hence accepted.
Calibration:	Not applicable
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.
Means of verification:	Not applicable

Parameters available at validation stage:

Below data has been verified against the data sources and the registered VCS PDMR, for the rest of parameters are not used in the calculation of ER in this monitoring period.

Parameter title	Description	Data	Source
$F_{NRB,y}$	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass	0.8197 (calculated as per meth tool)	PP has calculated f_{NRB} by determining the share of renewable and non-renewable woody biomass in the total quantity of woody biomass consumption for the country/region.
$NCV_{wood\ fuel}$	Net calorific value of the non-renewable	0.0156 TJ/tonne	2006 IPCC Guidelines for National Greenhouse Gas Inventories;

	woody biomass that is substituted or reduced		Volume 2 Energy, Chapter 1 Introduction
EF_{wf, CO_2}	CO ₂ emission factor for the use of wood fuel in baseline scenario	112 tCO ₂ /TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
$EF_{wf, non-CO_2}$	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario	26.23 tCO ₂ /TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
η_{p1}	The efficiency of the Gyapa project stove at the start of the project activity.	37.00%	Manufacturer's specification
η_{p2}	The efficiency of the Gyapa stove A project stove at the start of the project activity.	36.00%	Manufacturer's specification
η_{p3}	The efficiency of the Obaapa project stove at the start of the project activity.	36.00%	Manufacturer's specification
DF_n	Discount factor to account for efficiency loss of project cookstove per year of operation	0.99	As per methodology, default value of 0.99 efficiency loss per year
Leakage factor	Discount factor to account for leakage	0.90	Default value In-line with the applied methodology VMR0006, ver. 1.1 Section 8.3.

Assessment team has checked the submitted ER sheet, registered VCS PDMR, project ICS database, applied methodology and tools and confirmed that no manual transposition errors between datasets have occurred.

In conclusion, the assessment team confirmed GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.

By checking the original record, crosscheck with the supporting evidences, checking calibration related documents and interview with PP representatives and end users during the site visit, the VVB is able to confirm there are no transposition errors between data sets. All data are consistent in all data sets.

4.4 Quality of Evidence to Determine Reductions and Removals

The monitoring has been carried out in accordance with registered VCS PDMR.

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the MR Report and ER Calculation Spreadsheet /2/ and are consistent with the applied methodology VMR0006, version 1.1 and AMS II.G, version 13.0 and the registered monitoring plan. The parameters are complete in this monitoring period.

By checking the original record, crosscheck with the supporting evidences, checking calibration related documents and interview with PP representatives and end users during the site visit, the VVB is able to confirm there are no transposition errors between data sets. All data are consistent in all data sets.

For the current monitoring period, a new stove model named – Gyapa is added in the project. Thus, for this project, the parameter - $By=1,j,survey$ is calculated for this project as it is to be calculated in the 1st year of implementation. The detailed calculation presented in the MR and replicated in the ER sheet is checked and found acceptable.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the ER Calculation Spreadsheet and the MR Report. The verification process for the same has been clearly described above in section 4.3 of the report.

By checking the original record, crosscheck with the supporting evidences, checking calibration related documents and interview with PP representatives and end users during the site visit, the VVB is able to confirm there is sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the reductions and removals.

4.5 Non-Permanence Risk Analysis

Not applicable

5 VERIFICATION OPINION

5.1 Verification Summary

LGA Technological Center S.A. (hereinafter referred to as Applus+ Certification) has been appointed by EKI Energy Services Limited to perform the verification of greenhouse gas emission reductions of the grouped project activity “Improved Cookstove Distribution in Ghana by EKI” (VCS Ref. No. 3801).

The management of EKI Energy Services Limited is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the VCS PDMR. Thus, GHG statement is responsibility of EKI Energy Services Limited.

The project conforms with the verification criteria for grouped project activities and their GHG emission reductions or carbon dioxide removals set out in VCS Version 4.6, including the required qualifications or modifications. The new added project activity instances conform with the validation criteria for grouped projects set out in VCS Version 4/6, including required qualifications or modifications

We confirm that the grouped project activity has been implemented in accordance with the project description and subsequently validated variations.

Our verification approach was based on the requirements as defined under the applicable VCS standards, relevant UNFCCC requirements and ISO 14064-3: 2019. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered PDMR;
- the monitoring plan in the registered PDMR is as per the applied methodology;
- the monitoring complies with the registered PDMR;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “Improved Cookstove Distribution in Ghana by EKI” during the monitoring period 01-March-2023 to 31-January-2024 as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated.

Our verification approach was based on the requirements as defined under the applicable VCS standards, relevant UNFCCC requirements and ISO 14064-3: 2019.

5.2 Verification Conclusion

Our verification approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The achieved level of assurance for this verification is thus a reasonable level of assurance as per the requirements set out in the applied VCS Standard version 4.6 clause 4.1.10 (1). Based on the information we have seen and evaluated, we confirm the following statement:

Verification period: From 01-March-2023 to 31-January-2024

Verified GHG emission reductions and carbon dioxide removals in the above verification period:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCUs (tCO ₂ e)	Removal VCUs (tCO ₂ e)	Total VCUs (tCO ₂ e)
01-Mar-2023 to 31-Dec-2023	-	-	-	480,925	0	0
01-Jan-2024 to 31-Jan-2024	-	-	-	64,855	0	0
Total	0	0	0	545,780	0	545,780

5.3 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Mar-2023 to 31-Dec-2023	628,982	480,925	-23.54	Conservative as lower ER achieved
01-Jan-2024 to 31-Jan-2024	63,720	64,855	1.78	Almost the same as difference of only 1.78% moreover, VVB noted that newly distributed cookstoves have maintained same efficiency though technically, decrease in efficiency was expected.
Total	692,702	545,780	-21.21	Conservative as lower ER achieved

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

<i>Section</i>	<i>Information</i>	<i>Justification</i>	<i>Assessment method and conclusion</i>
<u>Not applicable</u>	<u>Not applicable</u>	<u>Not applicable</u>	<u>Not applicable</u>

APPENDIX 2: REFERENCE LIST

1.	Monitoring report Version 01, dated 21-February-2024 and version 04, dated 26-July-2024
2.	ER calculation spreadsheet version 02 dated 14-March-2024
3.	VCS Joint PDMR version 03, dated 12-September-2023
4.	VCS Validation report version 2.0Aa 03-October-2023
5.	VCS standard version 4.6 VCS program guide, version 4.3 VCS Validation and Verification manual, version 3.2
6.	VCS Methodology: VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1 CDM approved methodology AMS II.G :Energy efficiency measures in thermal applications of non renewable biomass, version 13 TOOL30: Calculation of the fraction of non renewable biomass, version 4.0
7	VCS project 3801 listing https://registry.verra.org/app/projectDetail/VCS/3801
8	CDM sampling standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0
9	Technical specifications of distributed cookstoves from the manufacturers, Jacgk Trust Enterprise and Sustainable Energy Technologies Limited (SETECH Ghana)
10	a. Thermal efficiency test certificate issued by Technology Consultancy Centre, Knust, Kumai dated 31 August 2022 for the model Obaapa Clean Stove. b. Thermal efficiency test certificated issued by Technology Consultancy Centre, Knust, Kumai dated 25 September 2020 for the model Gyapa. Anmd Gyapa Stove A model.
11	Monitoring survey results submitted by the project participant, EKI Energy Services
12	Declarations from household to transfer the ownership rights of the carbon assets
13	a. Declaration/Undertaking from Sustainable Energy Technologies (SETECH) (manufacturer) for no ownership of carbon credit/double counting dated 29-March-2023. b. Declaration/Undertaking from Sustainable Energy Technologies (SETECH) (distributor) for no ownership of carbon credit/double counting dated 05-April-2023. c. Declaration/Undertaking from EKI Energy Services for the ownership, no double counting of ICS dated 27-March-2023 d. Declaration/Undertaking from EKI Energy Services dated 12-September-2023 to confirm that there is no improved cookstove units has been distributed/implemented under other two proposed VCS projects (ID 3983 and 3982).
14	Sample End User Agreement s executed with the end users to confirm the ownership of carbon credits with PP in line with interviewed end users
15	ICS distribution database maintained by the project participant for all the ICSs distributed

16	.kml file for geographical boundary of the host country Ghana
17	Stakeholder consultation meeting records
18	Employment records, salary slips, training records
19	2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories , Volume 4: Agriculture, Forestry and Other Land https://www.ipccnggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf
20	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion https://www.ipccnggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf
21	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction https://www.ipccnggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

APPENDIX 3: FINDINGS FROM THE VERIFICATION

Table 1: Forward Action Requests from previous validation/verification (if any)

FAR ID	01	Section no.	3.3	Date : 25-March-2024
Description of CL				
Since the project participant has two other proposed VCS projects in Ghana (ID 3983 and 3982), At the time of inclusion on new project activity instance it shall be confirmed that all singular project activity instances fall within ten kilometres of another instance of this project activity and there is no overlap of activity instances of the other two project proposed VCS cookstoves projects of the project participant in Ghana.				
Project participant response				Date: 30-March-2024
NA				
Documentation provided by project participant				
NA				
VVB assessment				Date: 04-April-2024
VVB during the verification noted that the other VCS grouped project activities by the same PP are still under validation and not yet registered. Thus, all the new project activity instances included during the current verification period for this grouped project activity does not have overlap of other proposed grouped project activity.				

Table 2: Clarification Requests (CLs)

CL ID	01	Section no.	3.2	Date : 25-March-2024
Description of CL				
- VVB noted that in the registered VCS PD, PP has not mentioned that new ICS models will be added in the current project. For the current monitoring period, PP has added new ICS model as Gyapa (Stove A). - Further, during on-site visit, it was noted that all the 3 models are having the same specifications. The distributed ICS does not have manufacturer / sr. no. or other details engraved/attached/added to the ICS. It is not clear how PP / PP representatives and /or 3rd party can differentiate between these 3 models.				
Project participant response				Date: 30-March-2024
- The new ICS model as Gyapa (Stove A) is mentioned under section 3.2 and the details are mentioned in section 4.1 of the revised monitoring report - The improved cookstoves are distributed region wise with no overlap. From the region it is easily identified which type of cookstove is distributed. Also, the end users are given the card at the time of cookstove distribution which bears the serial no which is stored in the database.				

In the database the serial number is saved along with the type of cookstove. So, from the region as well as from the database it is differentiated the model of the cookstove.	
Documentation provided by project participant	
1. Revised monitoring report 2. End user card-sample copy	
VVB assessment	Date: 04-April-2024
1. PP has added a deviation 1 in section 3.2 of revised MR for the new ICS added and its technical specifications are now mentioned in section 3.1 of revised MR. This is checked and confirmed. Hence this part of CL is closed. 2. PP response is accepted. During on site visit, VVB noted that PP is ensuring that there is no overlap between the three identified regions where distribution is conducted. Moreover, it was confirmed during on-site visit that each end user has a card with its name, ICS serial number written on the same which is also entered in the project database by the PP in the electronic form. Hence this is accepted and this part of CL is closed.	
CL 01 is closed.	

CL ID	02	Section no.	3.4	Date : 25-March-2024
Description of CL				
In section 1.1, the baseline stoves mentioned are not consistent. E.g. mud or three-stone stoves, open fire. As per the registered PD, charcoal based mud or three stone stoves were used for daily cooking in the baseline.				
Project participant response				Date: 30-March-2024
The baseline stoves mentioned in the section 1.1 of the revised monitoring report are made consistent with the registered PD.				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP has revised section 1.1 and same is found consistent with the registered PD.				
CL 02 is closed.				

CL ID	03	Section no.	4.1	Date : 25-March-2024
Description of CL				
Section 1.1 mentions start date of distribution as 16-January-2023. PP shall include end date of distribution for better clarity.				

Further, the section mentions 2 nd monitoring survey was conducted on 04-September-2023 and same section further mentions it was conducted during 01-March-2023 to 31-January-2024.	
Project participant response	Date: 30-March-2024
The end date for the ICS distribution is mentioned in the revised monitoring report. The paragraph in the section 1.1 is revised for better clarity.	
Documentation provided by project participant	
Revised monitoring report	
VVB assessment	Date: 04-April-2024
Section 1.1 now mentions distribution period as 16-January-2023 to 25-August-2023 which is checked and confirmed. Hence this part of CL is closed. Section 1.1 now mentions monitoring survey period as 04-September-2023 to 28-September-2023 which is checked and confirmed. Hence this part of CL is closed. CL 03 is closed.	

CL ID	04	Section no.	4.1	Date : 25-March-2024
Description of CL				
Section 1.6 mentions that the first project activity instance was implemented on 16-January-2023 and same is the start date. As per VCS requirement, the start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or carbon dioxide removals. It is not clear how PP ensured that the implementation date was the GHG emission reduction date.				
Project participant response				Date: 30-March-2024
The justification provided in the section 1.6 is revised in accordance with the project start date as per VCS Standard v4.5.				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP has revised section 1.6 to mentions that first project activity instance was commissioned on 16-January-2023 which conforms to VCS requirements. Hence this CL is closed. CL 04 is closed.				

Table 3: Corrective Action Requests (CAR)

CAR ID	01	Section no.	3.3	Date : 25-March-2024
Description of CAR				
In section 3.1, details about new entities added, new ICS model introduced are not mentioned. Further, the registered VCS PD does not provision for addition of new ICS model in the grouped project in section 1.4 project design - eligibility criteria.				
Project participant response				Date: 30-March-2024
The technical details of the newly added ICS model are added in the section 3.1 of the revised monitoring report.				
The addition of the new ICS model in grouped project is added as a deviation in section 3.3.3 of the revised monitoring report.				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP in the revised section 3.1 of MR has added details of new entities and new ICC model being added which is checked and confirmed.				
PP has take a deviation for new ICS model which is mentioned in section 3.3.3 of the MR which is checked and confirmed.				
CAR 01 is closed.				

CAR ID	02	Section no.	4.1	Date : 25-March-2024
Description of CAR				
1. As per the MR template requirements, please correct the format for the file name of the completed document i. e. in line with VCS MR Project ID DDMMYYYY-DDMMYYYY' 2. PP shall use VCS terminology throughout the MR. E.g. PP is mentioned as Project Promoter in section 1.1.				
Project participant response				Date: 30-March-2024
1. As per the MR template requirements, the format for the file name of the completed document is corrected in line with VCS MR Project ID DDMMYYYY-DDMMYYYY' 2. The VCS terminology is applied throughout the revised monitoring report.				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024

1. PP has corrected and mentioned format of file name in line with VCS requirements which is checked and confirmed. Hence this part of CAR is closed.
2. PP has now corrected the terminology and PP is now correctly mentioned as project participant in the revised MR which is checked and confirmed. Hence this part of CAR is closed.

CAR 02 is closed.

CAR ID	03	Section no.	4.1	Date : 25-March-2024
Description of CAR				
Section 1.5 mentions mail ID for other entities as Gloriaojo3@gmail.com and Bismarkasamoah88@gmail.com . As per the template requirements, the email address domain must match that of the organization.				
Project participant response				Date: 30-March-2024
The other parties mentioned in section 1.5 of the monitoring report do not have company name in their email address domain, hence the available IDs of the owner partner are provided.				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP response is accepted. VVB noted though it is diversion from template requirements but the concerned parties do not have their domain name and hence are using the mail address without company name which is acceptable.				
CAR 03 is closed.				

CAR ID	04	Section no.	4.1	Date : 25-March-2024
Description of CAR				
As per the template requirements in section 1.12,				
• Provide a summary description of project activities implemented during the monitoring period that result in SD contributions (i.e., technologies/measures implemented, activity location). • An explanation of how project activities result in the SD contributions described in Table 1 of this report. • Identification of which SD contributions described in Table 1 of this report contribute to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting these.				

Project participant response	Date: 30-March-2024
The section 1.12 is revised in accordance with the template requirement	
Documentation provided by project participant	
Revised monitoring report	
VVB assessment	Date: 04-April-2024
PD has revised section 1.12 to - Include a summary description of project activities implemented during the monitoring period that result in SD contributions (i.e., technologies/measures implemented, activity location) which is checked and confirmed. - To provide explanation of how project activities result in the SD contributions described in Table 1 of this report which is checked and confirmed. - Add details about SD contributions described in table 1 which is checked and confirmed. CAR 04 is closed.	

CAR ID	05	Section no.	4.1	Date : 25-March-2024
Description of CAR				
In section 2.3.1, as per the template requirements, If a new entity is now involved in project design or implementation, demonstrate the management experience of such entities. This is applicable since, the entities mention in section 1.5 are not part of registered VCS PD.				
Project participant response				Date: 30-March-2024
The section 2.3.1 is revised in accordance with the template requirement				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP has revised section 2.3.1 to provide more details on the new entities involved which is checked and confirmed. CAR 05 is closed.				

CAR ID	06	Section no.	4.2	Date : 25-March-2024
Description of CAR				
In section 2.1.2 of MR, 1. Please refer to section 3.18.5 and 3.18.6 of VCS Standard 4.5 and revise the section accordingly 2. Please explain how a 'feedback register kept at the project site office where any stakeholder can come and share his/her feedback' is appropriate since this project is spread over a country. Moreover, the on-site interviews with end users confirmed that in case of any grievance,/feedback, the above mentioned procedure as per registered VCS PD is not followed. 3. In 'Communication of monitored results', PP shall provide correct details for the current monitoring period instead of details at the time of project's registration. 4. In 'Stakeholder input' and 'Consultation records', details for the current monitoring period shall be mentioned. In section 2.1.4, as per the template 'Where no grievances were raised, indicate this with NA and demonstrate that the procedure is easily accessible to stakeholders for ongoing consultation.'				
Project participant response				Date: 30-March-2024
1. Section 2.1.2 of the MR is revised as per section 3.18.5 and 3.18.6 of VCS Standard 4.5 2. A deviation is applied for the actual procedure followed for the grievance/ feedback in the revised monitoring report. 3. In 'Communication of monitored results', correct details for the current monitoring period are provided in the revised monitoring report. 4. In 'Stakeholder input' and 'Consultation records', details for the current monitoring period are provided in the revised monitoring report 5. In section 2.1.4, as per the template 'Where no grievances were raised, it is indicated with NA and demonstrated the procedure is easily accessible to stakeholders for ongoing consultation in the revised table.'				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
1. PP has revised section 2.1.2 in line with section 3.18.5 ad 3.1.8.6 which is checked and confirmed. Hence this part of CAR is closed. 2. PP has taken a deviation which is mentioned in section 3.2.2 explaining the actual grievance mechanism followed and hence accepted. This part of CAR is closed. 3. PP has revised section 2.1.2 now as 'The monitoring results are communicated from the distributors to the end users through the distributor's representatives' which is found appropriate. Hence this part of CAR is closed. 4. PP has revised section 2.1.2 and details for current monitoring period are now mentioned in 'Stakeholder input' and 'Consultation records' which is checked and confirmed. Hence this part of CAR is closed. 5. PP has revised section 2.1.4 which is checked and confirmed. Hence this part of CAR is closed.				

CAR 06 is closed.

CAR ID	07	Section no.	4.3	Date : 25-March-2024
Description of CAR				
1. Section 4.1 mentions value for $NCV_{wood\ fuel}$ as 0.0156 TJ/tonne. As per https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf table 1.2, this is the value for wood/wood waste and not for Charcoal. As per the registered VCS PD section 3.4, the project is displacing charcoal which was the baseline fuel. 2. With reference to the above, VVB noted the registered VCS PD does not provide consistency in the baseline fuel. Section 3.4 mentions baseline as charcoal and use of non-renewable wood fuel also.				
Project participant response				Date: 30-March-2024
1. The PP utilizes a value of 0.0156 TJ/tonne for the Net Calorific Value (NCV) of wood fuel, for wood or wood waste. As PP uses the default wood-to-charcoal conversion factor of 6 kg of firewood per kg of charcoal, as stated in paragraph 35 of AMS II.G, version 11, has been applied. Therefore, the calculation aligns with the NCV value (0.0156 TJ/tonne) for wood. 2. A Deviation is applied in the revised monitoring report, to provide the consistency in the baseline fuel as charcoal				
Documentation provided by project participant				
VVB assessment				Date: 04-April-2024
1. PP response is found acceptable and hence this part of CAR is closed. 2. PP has added a deviation in section 3.2.2 of revised MR for consistency in the baseline fuel which is checked and confirmed. Hence this part of CAR is closed.				
CAR 07 is closed.				

CAR ID	08	Section no.	4.4	Date : 25-March-2024
Description of CAR				
1. Section 4.1 has added a new parameter as η_{p3}. However details about the same are not mentioned in section 3.1 or 3.2 of the MR. 2. Parameter $B_{y=1,new,l,j,survey}$ in Section 4.2 provide value for Gyapa (Stove A). The sample survey report for the same shall be submitted to VVB. 3. PP shall submit calibration certificate of weighing scale used to measure the biomass quantity as a part of the survey. 4. For the parameter 'life span' value for Gyapa (Stove A) shall be added and evidence for the same shall be submitted.				

Project participant response	Date: 30-March-2024
1. In Section 4,1 a new parameter is added as η_{p3} and the details about the same are mentioned in section 3.1 / 3.2 of the revised MR. 2. The sample survey report for Parameter $B_{y=1,new,l,j,survey}$ for Gyapa (Stove A) is submitted to VVB. 3. Calibration certificate of weighing scale used to measure the biomass quantity as a part of the survey is submitted to VVB 4. For the parameter 'life span' value for Gyapa (Stove A) is added in the revised MR and evidence for the same is submitted to VVB	
Documentation provided by project participant	
1. Revised monitoring report 2. Sample survey report of Parameter $B_{y=1,new,l,j,survey}$ for Gyapa (Stove A) 3. Calibration certificate of weighing scale used to measure the biomass quantity as a part of the survey 4. Evidence for Life span value for Gyapa (Stove A)	
VVB assessment	Date: 04-April-2024
1. PP has now applied for deviation for addition of this new parameter which is found acceptable. Hence this part of CAR is closed. 2. PP has submitted survey report for the new ICS model added to the grouped project. The report confirmed the the value mentioned in the MR. Hence this part of CAR is closed. 3. PP has submitted copy of calibration certificate for the weighing scales used. Hence this part of CAR is closed. 4. PP has submitted technical datasheet for new ICS model and the parameter value is added in the revised MR. Hence this part of CAR is closed.	
CAR 08 is closed.	

CAR ID	09	Section no.	4.4	Date : 25-March-2024
Description of CAR				
Sample size mentioned in section 4.3 is inconsistent with the submitted sample survey results and shall be corrected. The section further mentions, 'Therefore, project proponent has selected 20% over samples during samples selection'. The submitted survey results does not abide by this 20% value. The table under 'Data to be collected as apart of sampling' shall provide actual timing of the survey conducted. This section further mentions that as a back up PP has stove purchase contracts.				
Project participant response				Date: 30-March-2024
Sample size mentioned in section 4.3 of the revised MR is made consistent with the submitted survey results and the section is revised accordingly.				

The table under 'Data to be collected as apart of sampling' provided with actual timing of the survey conducted in the revised monitoring report.

Since the stoves are not sold to end users, the paragraph is revised.

Documentation provided by project participant

Revised monitoring report

VVB assessment

Date: 04-April-2024

PP has revised section 4.3 and sample size for each ICS surveyed is now correctly mentioned correcting the % values. Hence this part of CAR is closed.

The table is now revised in section 4.3 which is checked and confirmed. Hence this part of CAR is closed.

PP has revised and the mentioning of stove purchase contracts is removed and same is not applicable. Hence this part of CAR is closed.

CAR 09 is closed.

CAR ID	10	Section no.	4.4	Date : 25-March-2024
Description of CAR				
PP shall correct the vintage period mentioned in section 5.4 in line with the template requirement.				
Project participant response				Date: 30-March-2024
Vintage period is correctly mentioned in section 5.4 of the revised monitoring report in line with the template requirement				
Documentation provided by project participant				
Revised monitoring report				
VVB assessment				Date: 04-April-2024
PP has revised section 5.4 to correctly mention the vintage period.				
CAR 10 is closed.				

CAR ID	11	Section no.	4.4	Date : 25-March-2024
Description of CAR				
The registered PDMR in section 1.1 mentions that, 'The average annual GHG emission reductions for the group project activity are expected to be 72,030 tCO ₂ e, and hence, total GHG emission				

reductions over the entire crediting period are expected to be 504,210 tCO₂e.’ and hence the scale of the project in section 1.10 is selected as ‘project’.

For the current monitoring period, it was noted that PP has mentioned that total 209,380 ICS are distributed i. e. annual emission reductions are expected to be 651,012 tCO₂e (209,380 * 3.11 per ICS). This leads to change in the scale of the project from ‘project’ to ‘large project’.

Corrective action sought.

Project participant response

Date: 05-April-20204

At the time of validation, only 20,102 ICS were distributed and an average annual GHG emission reductions for the group project activity were expected to be 72,030 tCO₂e which was less than or equal to 300,000 tCO₂e/ year. However, due to increase in the number of improved cookstove distributed after the first monitoring period, the project has been shifted to large projects as the amount of average annual GHG emission reductions are now greater than 300,000 tCO₂e/ year. This is permanent type of deviation and doesn't have any impact on the applicability of the methodology, VMR 0006, v 1.1.

Materiality requirements for verification are also adopted as per the large projects, as set out in VCS standard v4.6, Section 4.1.10.

A deviation is applied in the revised monitoring report.

Documentation provided by project participant

Revised Monitoring report

VVB assessment

Date: 04-April-2024

PP has added a deviation in section 3.2.2 of revised MR for change in the scale of the project. The submitted project database has confirmed that total distributed ICS are more than 200,000 nos. thus it satisfies the requirements for project scale as large project. Further PP has revised materiality requirements for verification which are appropriate.

CAR 11 is closed.

APPENDIX 4: TECHNICAL SPECIFICATIONS OF COOKSTOVES AND DISTRIBUTION RECORDS

The technical details of all the 3 models is the same as confirmed based on submitted technical datasheets and on-site interviews conducted and are as below:

Technical Details of GYAPA, GYAPA (STOVE A) & OBAAPA Models				
A)	Cook Stove Type/Category	Type:- GYAPA, GYAPA (STOVE A) & OBAAPA MODELS		
		Category - Natural Draft		
B)	Secondary Air Supply	Through Natural Draft		
C)	Stove Material Used	Body		Aluzinc Sheet
		Body Material Thickness		0.5 mm
D)	Physical Structure	External Dimension		Width: - 290 mm
				Height: - 260 mm
E)	Feeding Process	Continuous Feeding Front Loading		
F)	Expected life of the stove	7 Years		
G)	Guarantee /Warranty Period	1 Year		
H)	Thermal Efficiency	GYAPA	GYAPA (STOVE A)	OBAAPA
		37%	36%	36%

The assessment team further checked and confirmed that during the current monitoring period, new ICS model was introduced and same is discussed as a part of project description deviations below in section 3.2.

During current monitoring period more ICS were added and their distribution is as below based on the ICS models supplied to end users.

- 1) Gyapa cookstove – 104,920 nos
- 2) Obaapa clean stove - 58,810 nos
- 3) Gyapa (Stove A) – 25,548 nos

The actual distribution as checked from the project distribution database is as below:

Sr.No.	Monitoring period	Cookstove model	Total cookstoves distributed (nos)
1	1 st monitoring period : 16-January-2023 to 28-February-2023	Gyappa	18,893
		Obaapa	1,209
		Gyappa (Stove A)	0
2	2 nd monitoring period : 01-March-2023 to 31-January-2024	Gyappa	104,920
		Obaapa	58,810
		Gyappa (Stove A)	25,548