



**Verified Carbon
Standard**

DELAGUA CLEAN COOKING GROUPED PROJECT IN RWANDA

Document Prepared by

Carbon Check (India) Private Ltd.



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Summary:

- **A description of the project**

Project: The project " DelAgua clean cooking grouped project in Rwanda", employs VCS methodology; VMR0006 version 1.1 /B02-a/. The project involves distribution of energy efficient cookstoves to the households of Republic of Rwanda. It is intended that under this project high thermal efficient cookstoves will be distributed which will burn wood more efficiently thereby improving thermal transfer to pots, hence saving fuel wood. Apart from halting the progressing deforestation in Rwanda, this project will also reduce health hazards from indoor smoke pollution and time spent on collecting firewood.

- **A description of the validation and verification**

Validation and Verification: DelAgua Health Rwanda (Voluntary) Limited has appointed Carbon Check (India) Private Ltd., to carry out the renewal and periodic and verification of the project" " DelAgua Health Rwanda (Voluntary) Limited", with regards to the relevant requirements of VCS Standard Version 4.4 (dated 17-January-2023). The combined validation and verification are based on the desk review of the VCS Joint PD & MR /01 /and the corresponding supporting emission reduction calculation spread sheets /02/, /03/ and other relevant supporting documents made available to the validation and verification team by the project proponent accompanied by on-site interviews. This verification involves the period of 15 September 2021 to 28 February 2023.

- **The purpose and scope of validation and verification**

Purpose: The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, particularly the project's baseline, monitoring plan and compliance with the relevant VCS and host party criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions. Carbon Check's objective is to perform a thorough, independent assessment and validation of the project activity.

The purpose of the verification is to review the monitoring results and verify that monitoring methodology was implemented according to monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive, and presented in a concise and transparent manner. In particular, monitoring plan, monitoring report and the project's compliance with relevant VCS, UNFCCC and host party criteria are verified in order to confirm that the project has been implemented in accordance with registered design and conservative assumptions, as documented.

Scope: Renewal & periodic verification scope is defined as an independent and objective review of the Project Description section of the Joint PD & MR. The Joint PD & MR is reviewed against the relevant criteria and guidance documents provided by VCS which include the following: VCS Program Guide (v4.3, dated 17-January-2023), VCS Standard (v4.4, dated 17-January-2023), Program Definitions (v4.3, dated 21-December-2022), Registration & Issuance Process (v4.3, dated 17-January-2023) VCS Validation and Verification Manual (v3.2, dated 19-October-2016) applicable at the time in order to confirm that the project meets the applicability conditions of the

selected baseline and monitoring VCS methodology VMR0006 (version 1.1), also assess the claims and assumptions made in the PD without limitation on the information provided by the project participants.

The scope of the verification is:

- To verify the project implementation and operation with respect to the VCS Joint PD & MR.
- To verify the implemented monitoring plan with the VCS Joint PD & MR and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

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

- **The method and criteria used for validation and verification.**

The validation consists of the following four phases:

I. A desk review of the project description documents.

- A review of data and information.
- Cross checks between information provided in Joint PD & MR and information from sources with all necessary means without limitations to the information provided by the project proponent.

II. Onsite interviews with project stakeholders

- Interviews with relevant stakeholders in host country with personnel having knowledge of the project development via telephone, email, or direct on-site visits.
- Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent.

III. Reference to available information relating to projects or technologies similar to projects under validation and review based on the approved methodology being applied for the appropriateness of formulae and accuracy of calculations.

IV. The resolution of outstanding issues and the issuance of the final Joint Validation & Verification report and opinion.

The method and criteria used for verification.

(a) Desk review, involving:

- (i) Review of the data and information presented to verify their completeness.

(ii) Review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.

(iii) Evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

(b) Onsite assessment involving:

- I. Assessment of the implementation and operation of the proposed VCS project activity as per the VCS Joint PD & MR.
- II. Verification of implemented monitoring plan as per the VCS Joint PD & MR and applied baseline and monitoring methodology.
- III. Review of information flows for generating, aggregating, and reporting the monitoring parameters.
- IV. Interview with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan in the VCS Joint PD & MR.
- V. A cross-check between information provided in the monitoring report and data from other sources such as inventories, purchase records, or similar data sources.
- VI. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS Joint PD & MR and the selected methodology.
- VII. Review of calculations and assumptions made in determining the GHG data and emission reductions.
- VIII. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

- **The number of findings raised during validation and verification.**

A risk-based approach has been followed to perform this Gap Validation & Verification. During the course of Joint Gap Validation & Verification, a total of 30 findings were raised, which includes:

27 Corrective Action Request (CAR); 03 Clarification Requests (CLs).

All the raised findings have been successfully resolved by the PP.

- **Any uncertainties associated with the validation and verification.**

There are no uncertainties associated with the joint validation & verification of the project activity. The validation and verification have been done with a reasonable level of assurance.

The VCS Joint PD & MR/01 /, emissions reduction calculations /02//03/ along with the supporting documents provided are in line with all the VCS requirements/B01/. The validation and verification team has detected no further uncertainties or quality restriction.

- **Summary of the validation and verification conclusions**

Carbon Check (India) Private Ltd. concludes the validation and verification with a positive opinion that the VCS Project “ DelAgua clean cooking grouped project in Rwanda’ as described in the Joint PD and MR (version 6, dated 27-February-2024)/01 /, meets all applicable VCS requirements, including those specified in the VCS Standard (v4.4, dated 17-January-2023), relevant methodology, tools, and guidelines.

The selected baseline and monitoring methodology (VMR0006 version 1.1) is applicable to the project and correctly applied. Carbon Check (India) Private Ltd., therefore, requests the registration of the project as a VCS project. The average annual and total GHG emission reduction expected from the project is 5,63,081 tCO₂e and 3,941,567 tCO₂e, respectively, over the first 7-year renewal crediting period.

In CCIPL’s opinion, the emission reductions reported for the “DelAgua clean cooking grouped project in Rwanda” in the Joint PD and MR are fairly and correctly stated. CCIPL is therefore able to certify that the emission reductions for the grouped project “DelAgua clean cooking grouped project in Rwanda”. The registered VCS grouped project has included PAI-1 and PAI-2, wherein operational lifetime of ICS included under PAI-1 has ended during first periodic verification. During current monitoring period the ICS distributed under PAI-2 i.e., 195,227 ICS considered for emission reduction calculation being distribution between 01 March 2016 to 02 November 2016 are operating successfully, further PP will distribute additional 100,000 ICSs (2023-24-50,000 ICSs: 2024-25-50,000 ICSs) under PAI-3. The 1,95,227 numbers of improved cookstove distributed and operational during current monitoring period i.e. 15-September-2021 to 28-February-2023 and the actual emission reduction achieved during current monitoring period is 1,149,391 tCO₂e.

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1 INTRODUCTION

1.1 Objective

DelAgua Health Rwanda (Voluntary) Limited has appointed the VVB, Carbon Check (India) Private Ltd. to perform renewal crediting period and periodic joint validation & verification of the VCS project “DelAgua clean cooking grouped project in Rwanda”. This report summarizes the findings of periodic validation & verification of the project, performed based on the VCS Program Guide (v4.3, dated 17-January-2023), VCS Standard (v4.4, dated 17-January-2023), Program Definitions (v4.3, dated 21-December-2022), Registration & Issuance Process (v4.3, dated 17-January-2023), VCS Validation and Verification Manual (v 3.2, dated 19-October-2016). Validation is required for all VCS project activities intending to register project under the VCS program. The purpose of a renewal of the crediting period validation and periodic verification is to have a thorough and independent assessment of the proposed project against the applicable VCS requirements, in particular, the project’s baseline, monitoring plan and the project’s compliance with relevant VCS and host Party criteria. These are validated in order to confirm that the project design and monitoring report, as documented, is sound and reasonable and meets the identified criteria. Validation and verification are a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions, VCUs.

Through this joint validation and verification activities, it is to be confirmed that:

- The project is implemented as described in the VCS Joint PD & MR /01 /
- The monitoring system is implemented and fully functional to generate emission reductions without any double counting, and
- The data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reductions calculation.

The joint validation and verification followed the requirements of the current version of the VCS standard version 4.4 and VCS program guide (version 4.3)/B02/ to ensure the quality and consistency of the joint validation and verification work and the report.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the project description section of the joint PD & MR/01/, project design, ex-ante emission reduction calculation spreadsheet/02/, the project’s baseline study and monitoring plan and other relevant documents. The joint PD & MR is reviewed against the relevant criteria and decisions by the VCS Program, and against the approved baseline and monitoring methodology. The verification of this project is based on the

Monitoring Report section of the joint PD & MR for this monitoring period, ex-post emission reduction calculation spreadsheets /03-c/, supporting documents made available to the validation and verification team and information collected through performing on-site interviews. Furthermore, publicly available information was considered as far as available and required. Carbon Check has employed a risk-based approach in the combined validation and verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The combined validation and verification of this project is based on the Joint PD & MR /01/ emission reduction calculation spreadsheets /03-c/, supporting documents made available to the validation and verification team /02 – 17/ and information collected through performing onsite visit interviews. Furthermore, publicly available information was considered as far as available and required.

The joint gap validation and verification are carried out on the basis of the following requirements, applicable for this project:

- VCS Program Guide v4.3
- VCS Standard v4.4
- Program Definitions v4.3
- Registration & Issuance Process v4.3
- VCS Validation and Verification Manual v 3.2
- VCS Methodology: VMR0006.: Methodology for Installation of High Efficiency Firewood Cookstoves” (Version 1.1)/B02/.
- Other relevant rules, including the host country legislation.

The scope of this verification, by independent checking of objective evidence, is as follows:

- To verify that the project is implemented as described in the joint VCS Joint PD & MR.
- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent, and free of material error or omission by checking the monitoring records and the ex-post emissions reduction calculation.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.
- The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The method and criteria used for verification consisted of the following phases:

1. Completeness check and desk review
2. On site interviews with stakeholders
3. Resolution of outstanding issues and issuance of final validation and verification report and applicable VCS Validation and Verification Deeds of Representation.

CCIPL conducts all its work under strict rules to safeguard impartiality and ensure the independence of the combined validation and verification team. The VVB does not provide any consulting or recommendations to the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

1.3 Reasonableness of Assumptions and Level of Assurance

The joint periodic validation and verification report is based on the Joint PD & MR /01/, supporting documents /02/-/17/ made available to the Validation and Verification team and information collected through performing interviews.

The combined validation and verification have been planned and organized to achieve a:

☒ Reasonable level of assurance as per VCS Standard (v4.4)

☐ Limited level of assurance

The threshold for quantitative materiality with respect to the aggregate of errors, omissions, and misrepresentations, relative to the total reported GHG emission reductions and/or removals was limited to five percent, as required by section 4.1.8 of the VCS Standard version 4.4 /B01/.

1.4 Summary Description of the Project

The project “DeLaGua clean cooking grouped project in Rwanda” is a voluntary Grouped Project (GP) aimed at distributing fuel efficient improved cookstoves (ICS) to households in Rwanda. The Project Participant (PP) of the GP for all the communication, management, and ownership rights of the Greenhouse Gas (GHG) Emission Reduction Units (ERU) is DeLaGua Health Rwanda (Voluntary) Limited (herein after also referred to as “DeLaGua”) and the ICS under this GP will be distributed by DeLaGua which employs of the VCS methodology; VMR0006 version 1.1 /B07/. The project activity includes the distribution of fuel-efficient improved cookstoves (ICS) in Republic of Rwanda. The registered VCS grouped project has included PAI-1 and PAI-2, wherein operational lifetime of ICS included under PAI-1 has ended during first periodic verification. During current monitoring period the ICS distributed under PAI-2 i.e. 195,227 ICS considered for emission reduction calculation being distribution between 01 March 2016 to 02 November 2016 are operating successfully, further PP will distribute additional 100,000 ICSs (2023-24-50,000 ICSs: 2024-25-50,000 ICSs) under PAI-3. The operation of stoves was confirmed by a survey undertaken as part of monitoring requirements of VCS PD and it was found that all the stoves are in use and there was no case of drop out identified during the survey. The results are survey are demonstrated in the ER spreadsheet and shall be furnished to VVB for verification. The first cookstove under this project distributed on 01 March 2016, the cookstoves were distributed in the targeted area for the project. The monitoring survey was undertaken in 28-February-2023 to 04-March-2023 by visiting the sampled households. Sample size was selected by using the latest version 4 of CDM guideline, “Sampling and surveys for CDM project activities and programmes of activities” version 04. The surveyors visited the houses and completed the survey.as provided in Joint PD & MR section 3.2/3/.

This program seeks to improve public health in the Republic of Rwanda. The program will distribute high efficiency ICS to the end-users, thus addressing their several critical public health challenges. Currently, many households in Rwanda cook their meals using unimproved cooking technologies/practices utilizing biomass (firewood & charcoal). In rural areas, firewood remains the most common type of cooking fuel, used by 93% of the households. In total, 79.9% of people in Rwanda are using firewood as their main cooking fuel. About only 2% of the population has access to modern cooking fuels and technologies, concentrated in urban areas and high-income households, while about 15% have access to clean cooking stoves. Three-stone and traditionally manufactured stoves are predominant in rural areas, and 76% of Rwandan households spend more than 7 hours per week acquiring and preparing fuel, posing a high burden on women and girls, who are generally in-charge of these activities. Cooking and childcare consume a large proportion of time for females in households; women and girls spend 15 hours a week on these two tasks alone; the time spent on cooking varies depending on the type of cooking stove used. On the other hand, fetching wood takes much longer in rural areas. Reducing gender inequalities, moving towards greater equity, and building a viable sustainable development path in which women could access an active and participatory role, are all challenges that this program aims to overcome.

The start date for this Grouped Project is 15/09/2014, however, , issuance of credits under VERRA is approved from 01/01/2019. The timeline relevant to the VCS GP Start Date and Verra approval on the same can be accessed in Appendix-2 of this document.

The project crediting period will be seven years, twice renewable, for a maximum total of 21 years. The first renewable crediting period was from 15-September-2014 to 14-September-2021. The second renewable crediting period will be from 15-September-2021 to 14-September-2028

The average annual and total GHG emission reduction expected from the project is 563,081 tCO₂e and 3,941,567 tCO₂e, respectively, over the first 7-year renewal crediting period.

The project activity has been implemented as described in the VCS joint PD and MR /01/ and the emission reductions are calculated conservatively as per the applied methodologies /B07/. The total number of emission reductions for the monitoring period (15-September-2021 to 28-February-2023) are 1,149,391 tCO₂e.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

DelAgua Health Rwanda (Voluntary) Limited has appointed the VVB, Carbon Check (India) Private Ltd., to carry out the joint periodic validation and verification of the project “DelAgua clean cooking grouped project in Rwanda”, with regards to the relevant requirements of VCS Standard Version 4.4 /B01/.

The joint periodic validation and verification include a thorough and independent assessment of the proposed project against the applicable VCS requirements/B01/, in particular, the project’s baseline, additionality, monitoring plan and the project’s compliance with relevant VCS and host party criteria. The validation and verification involves assessment of the project and to confirm that the project meets the applicability conditions of the selected methodology, VMR0006. version 1.1 /B07/ and assess the claims and assumptions made in the Joint PD & MR /01/ without limitation on the information provided by the project participants. The overall joint gap validation and verification was conducted using Carbon Check’s internal procedures.

The Joint validation and verification consist of the following three phases:

1. Completeness check and desk review of the joint PD & MR, monitoring plan, monitoring methodology, applicable tools in particular attention to the frequency of measurements, quality of metering equipment including calibration requirements, QA/QC procedures and other relevant documents.
2. On-site visit interviews (including follow-up interviews with project stakeholders, when deemed necessary). The on-site interviews include the following:
 - An assessment of implementation and operation of project activity with respect to joint PD & MR.
 - Review of information flows for generating, aggregating, and reporting the monitoring parameters.
 - Interview with relevant personals to determine whether the operational and data collection procedures are implemented and in accordance with the monitoring plan of the project.
 - Cross check of information and data provided in the monitoring report with purchase records or similar data sources.
 - Review of assumptions made in calculating the emission reductions (if any).
 - Implementation of QA/QC procedure in-line with the VCS joint PD & MR and methodology requirements.
3. Resolution of outstanding issues and the registration and issuance of the final joint validation and verification report and as applicable the VCS validation and verification Deeds of Representation.

2.2 Document Review

During the document review, CCIPL has applied standard auditing techniques including but not limited to document reviews and on-site interviews, review of the applicable/applied methodology and its underlying formulae and calculations to assess the quality of information provided. The validation and verification were performed primarily based on the review of the VCS joint PD & MR and the supporting documentation. This process included:

- A review of data and information presented by the PP to verify their completeness
- A review of the MP and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the QA/QC procedures, and
- An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of ERs.

The Joint PD and MR /01/ was initially reviewed and CCIPL requested the PP to present the supporting information and documents /02/-/17/. The documents were reviewed by CCIPL. Through the process of

the validation and verification, the revised Joint PD & MR, monitoring report and the supporting documents were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by the CCIPL team.

The list of documents referred during the course of this verification has been provided in Appendix-1.1.

2.3 Interviews

The table below describes the on-site interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the joint PD & MR /01/ and any supporting documents.

Table 01: On-site interview process

SR. No.	Date	Name	Organization	Topic	Interviewer
/01/	18-May-23	Mr. Kharim Murenzi	DeAgua	- Project Design - Project Implementation status - Project start date and Project Location - Baseline Scenario	Mr.Harish Sharma & Mr. Roger Muganga
/02/		Mr. Furaha Ferdinand		- Baseline Identification and Additionality - Qualification and Training - Monitoring and reporting documentation - Quality Assurance – Management and operating system	
/03/		Mr. Sibomana J Piere		- Social and Environmental Impacts - Local Stakeholders meeting process - Compliance with relevant laws - Roles and responsibility, Management Data and Reporting	

SR. No.	Date	Name	Organization	Topic	Interviewer
/04/	18-May-23	Uwanzwenuwe Liberata	HHs	KPT Survey	Mr.Harish Sharma & Mr. Roger Muganga
/05/		Benimana Devota			
/06/		Nyirankaka Angeline			
/07/		Mukagasana Costasie			
/08/		Mukashema Eugenie			
/09/		Mureramanzi Innocent			
/10/		Ingabire Seraphine			
/11/		Tumukunde Josephine			
/12/	19-May-23	Nsekanabo Ildephonse	HHs	Project/Monitoring Survey	Mr.Harish Sharma & Mr. Roger Muganga
/13/		Mukantabana Rosine			
/14/		Nteziryayo Felix			
/15/		Tuyisenge Ezechief			
/16/		Ndagijimana Vianey			
/17/		Nshizirungu Fausin			
/18/		Mukagatare Felicite			
/19/		Hanyurwande Augstin			

Apart from the monitoring survey, VVB has also interviewed the beneficiary and confirmed the baseline cookstove (i.e., Three stone fire) used prior to the implementation of the project stove. Furthermore, through document review registration certificate cum consent deed signed by the beneficiary, VVB could verify that project activity comply with the 10% efficiency requirement as per the applied methodology /B07/.

In accordance with section 3.21.1 of the VCS Standard (version 4.4) /B01/ all documents and records will be kept in a secure and retrievable manner for at least two years after the end of the project crediting period. The data collecting and management methods as provided in section 5.3 of the VCS PD/01/ are acceptable to the validation team. The validation team interviewed representatives of PP and it was established that the database of all the project equipment distributed by PP is created and maintained. The entire database will be kept protected by PP for a period of more than two years. In addition, two samples of equipment invoices were studied and were found to contain information in compliance with the monitoring requirements of the methodology VMR0006 (version 1.1)/B07/.

The validation & verification team considers that the means of implementation of the monitoring plan, including the data management, monitoring equipment, and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the

proposed grouped project therein can be reported ex-post and verified. In addition, the sampling plan meets the requirements of the monitoring methodology VMR0006 (version 1.1) /B07/ and the Standard of Sampling and Surveys of CDM project activities and Programme of Activities (version 09.0) /B08/ and Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04) /B08/.

VVB used acceptance sampling during the verification stage of this joint validation and verification to check the households' operational status. The sampling done by VVB reflects the population of the project activity. applying paragraph 39 (c) of the sampling standard, version 09 /B08/, 16 sample were chosen (with no discrepant records). 08 from monitoring and 08 from the baseline survey, based on an AQL of 0.5% and UQL of 20%, producer risk of 10%, and consumer risk of 10%. Acceptance number (c) thus determined for the sample is 0. It was observed that out of the 08 samples from monitoring, all the 08 stoves were found to be operational, and this matched with the PP's records hence no discrepant records were observed with the Joint PD & MR /01/ and ER sheets /03-c/ and thus $c=0$. however, for the baseline survey, 08 samples were interviewed to confirm the baseline as it is found to be in line with a requirement of methodology, Thus, PP's records have been accepted in line with § 33 of the sampling standard, version 09 /B07/. assumptions and calculations made by PP is deemed to be appropriate to Validation and Verification team.

The validation team confirms that the overall monitoring plan complies with the requirements of the methodology VMR0006 (version 1.1)/B07/, the monitoring arrangements describes in the monitoring plan are feasible within the project design and the project proponents will be able to implement the described monitoring plan.

2.4 Site Visits

Carbon Check has conducted an on-site inspection to confirm the implementation and operation status of the VCS project. A reasonable level of assurance has been maintained through the on-site visit for the purpose of validation and verification as follows:

- An assessment of the implementation and operation of the VCS project through on-site interviews with the representatives of project proponent and end users.
- Confirmation of the pre-project scenario
- Confirmation of the applicability of the methodology and monitoring and controlling instruments and operational arrangements.
- Confirm the data collection procedures are implemented in accordance with the MP
- Assessment of the project boundaries
- Assessment of the monitoring provisions by checking the monitoring arrangement.
- A review of information aggregating and reporting of the monitoring parameters

- A check of the observations of monitoring practices against the requirements of the VCS joint PD & MR and the applied monitoring methodologies
- A review of calculations and assumptions made in determining the GHG data and ERs, and
- An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters

2.5 Resolution of Findings

This section summarizes the findings from the joint validation & verification of the project activity. In this section the findings from the document review, assessments and onsite interviews are provided. Material discrepancies identified in the course of the validation are addressed either as CARs, CLs or FARs.

- Clarification requests (CLs): Project reporting lacks transparency and further information is needed to determine if a material discrepancy is present.
- Corrective action requests (CARs): The VVB has identified a material discrepancy or non-conformance that the project proponent must address.

The validation & verification team identified 27 CARs and 03 CLs. All CAR and CLs raised by Carbon Check during this joint validation & verification have been resolved by the PP. Please refer to Appendix 4 below for the details of the CARs/CLs and their closure. If this was not completed, the ERs cannot be certified and recommended for issuance to the VCS Registry.

2.5.1 Forward Action Requests

A forward action request (FAR) should be issued, where:

Forward Action Request (FAR) is to be raised when the monitoring and reporting require attention and/or adjustment for the next verification period. FARs VVBs not relate to VCS requirements for issuance of ERs achieved during subject monitoring.

CC IPL has not raised any FAR during this joint periodic validation and verification.

3 VALIDATION FINDINGS

3.1 Project Details

The project " DelAgua clean cooking grouped project in Rwanda" employs baseline and monitoring methodology; VRM0006 version 1.1 /B02/. The project activity includes the distribution of fuel-efficient improved cookstoves (ICS) in Republic of Rwanda. The ICS distributed through this project will replace the baseline cookstoves i.e., three-stone fire or conventional open fire. The registered VCS grouped project has included PAI-1 and PAI-2, wherein operational lifetime of ICS included under PAI-1 has ended during first periodic verification. During current monitoring period the ICS distributed under PAI-2 i.e., 195,227 ICS considered for emission reduction calculation being distribution between 01 March 2016 to 02 November 2016 are operating successfully, further PP will distribute additional 100,000 ICSs (2023-24-50,000 ICSs: 2024-25-50,000 ICSs) under PAI-3. It is intended that under this project activity single or multi pot EcoZoom Dura model Stove will be distributed, as provided in Joint PD & MR section 3.2/01. The project results in reducing the amount of non-renewable biomass used for cooking. Through reduction in non-renewable biomass consumption, the program will decrease greenhouse gas emissions. The EcoZoom Dura model Stove will burn the wood efficiently, which improves the thermal energy direct to the pot, so conserving non-renewable biomass. Section 1.1. of the VCS Joint PD & MR contains a clear summary description of the projects. The completeness and accuracy of the project description was validated through on-site interviews.

Two PAIs (PAI-1 and PAI-2) have started implementation prior to the time of GP validation. These PAIs are discussed here:

- The ICS distributed under PAI-1 (may be referred to as Group – 1 interchangeably within this document and the ER Sheet) & PAI-2 (may be referred to as Group – 2 interchangeably within this document) involved EcoZoom Dura model ICS and had a thermal efficiency well above the threshold value of 25%, which is stated as a requirement in Section 4 of the methodology. The efficiency value has stayed above this value throughout the crediting period.
- Figure below provides the details of the EcoZoom Dura ICS model that was distributed under PAI-1 & PAI-2 and verified by the VVB on-site at the time of first Verification (Joint Validation & Verification). Along with the ICS, a pot skirt is also provided to the end-users, so that the maximum efficiency of the ICS can be attained at the time of cooking.

This is as per section 1.11 of VCS joint PD & MR /01/.

The registered VCS grouped project has included PAI-1 and PAI-2, wherein operational lifetime of ICS included under PAI-1 has ended during first periodic verification. During current monitoring period the ICS distributed under PAI-2 i.e., 195,227 ICS considered for emission reduction calculation being distribution between 01 March 2016 to 02 November 2016 are operating successfully, further PP will distribute additional 100,000 ICSs (2023-24-50,000 ICSs: 2024-25-50,000 ICSs) under PAI-3

The start date for this Grouped Project is 15/09/2014, however, , issuance of credits under VERRA is approved from 01/01/2019.

The first renewable crediting period was from 15-September-2014 to 14-September-2021. The second renewable crediting period will be from 15-September-2021 to 14-September-2028. This is in accordance with paragraph 3.9.1 of the VCS standard version 4.4/B01/ for non-AFOLU projects.

The indication of the project activity, instance location and the geographic boundaries is provided in section 1.12. of the VCS Joint PD & MR. They are in accordance with paragraph 3.11.1 of the VCS Standard and can confirm that the project activity boundary is uniquely defined. The project location and geographic boundary of the project is Republic of Rwanda. This is in accordance with paragraph 3.6.10 of the VCS standard version 4.4 /B01/, which requires projects to have one or more clearly defined geographic areas within which new project activity instances may be developed.

The VCS Joint PD & MR clearly indicates the project scope, which is scope 3: Energy demand, and more specifically demand-side energy efficiency project. The project includes multiple project activity instances or locations but is developed as a VCS project, this is indicated in section 1.2. of the VCS Joint PD & MR /01/.

The proposed project is an energy efficiency project activity and is located in a non-Annex I country. Therefore, the ER generated would not be part of an emission trading program, nor it is located in a jurisdiction or sector with binding limits. The project proponent intends to claim carbon credits under the VCS program only for the emission reductions achieved. The PP states in the VCS Joint PD & MR that the emission reductions generated by this project will not be used for compliance with an emission-trading program or to fulfil binding commitments. In fact, at the time of this combined validation and verification, no binding targets have been set by Rwanda under the Kyoto protocol, as indicated in the UNFCCC website /B09.

The proposed project activity does not generate another form of environmental credit. The project proponent indicates in the VCS Joint PD & MR that the project does not intend to generate any other form of GHG related environmental credit other than those claimed under this VCS project.

PP will inform the manufacturers of the project stoves and the implementation partner that the Verified Carbon Units (VCUs) may be issued for the greenhouse gas emission reductions and removals under this VCS project. For these VCUs, the PP will be claiming carbon credits under VERRA. PP will further apprise that the ownership of these credits lies exclusively with DelAgua Health Rwanda (Voluntary) Limited to avoid any potential risk of double claiming of Scope 3 energy demand.

Being a Grouped Project Activity, this project will be implemented while fulfilling the eligibility criteria provided in the Table below.

S No	Criterion	How the new project activity instances comply	Evidence
1	Project Activity Instances (PAIs) must	Please refer the subsections below.	Please refer the subsections below.

S No	Criterion	How the new project activity instances comply	Evidence
	meet the applicability conditions set out in the applied methodology.		
1a	Project activities shall be implemented in domestic premises or in community-based kitchens.	Each PAI will distribute technology that is appropriate for domestic use to household end-users	a) Manufacturer's specifications. Project ICS distribution database containing unique household end user information.
1b	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; in case of project stove replacing fossil fuel baseline stove, it shall exclusively use renewable biomass.	ICS distributed in each PAI will have a thermal efficiency of at least 25%, and will be confirmed by the end user that they were using the firewood as the cooking fuel in the project's baseline. Each PAI will record the baseline and project fuel use to ensure that wood fuel is the sole source of energy.	1.Manufacturer's specifications. 2. Information recorded within the baseline KPT and project monitoring surveys on the fuel usage.
1c	Both 'Projects' and 'Large Projects' can use the methodology	PAIs will comply with the GP requirements	The GP is defined as a "Large Project" according to the guidelines set out in the VMR0006 methodology and can therefore apply the methodology.
1d	Non-renewable biomass has been used in the project	Each PAI will demonstrate that Non-renewable biomass has been	Publicly available studies are being used to

S No	Criterion	How the new project activity instances comply	Evidence
	region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	used in the project region since 31 December 1989.	ascertain biomass usage for the PAI within the GP.
1e	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using exclusively renewable biomass (more than one type of biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded.	Biomass residues are not processed as a fuel to be used in the GP. End users will be asked to state their source of energy and baseline appliance at the point of distribution and during the project monitoring. Above information will be stored in the monitoring database.	1. Monitoring surveys. 2. Project ICS distribution poster specific to the end-users (sample photographs)

S No	Criterion	How the new project activity instances comply	Evidence
1f	The Project Design Document shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g. programme logo)	To avoid double counting of emission reductions through the method of distribution, each cookstove has a unique identifier number and the distribution of each stove is logged onto a database which includes unique information for each recipient Each PAI will have system for avoiding double counting with data being collected via a smartphone app (where possible), or via paper forms, including: 1. Date of distribution 2. A unique serial number on each technology 3. Available end-user data: name, phone number, address/physical location, ID number	1. Project (GP) Distribution database can be checked to verify the distribution approach, along with the distribution system (includes both plan and execution steps) established by the PP. The distribution database is an electronic document system. 2. The VCS GP ICS units will have unique engravings or text specifically mentioning the unit is strictly “not for sale” along with the DelAgua logo.
1g	The Project Design Document shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	The End User Agreement will confirm that the ownership rights of the ER/VCUs generated by the PAI reside with the PP. The signature of each end user confirming their understanding of this agreement will be collected at the point of distribution. The End User Agreement will be in English and translated into a local language where required. If necessary, it will be read out to the End User.	a) End users will be asked to sign the End User Agreement and this information will be a part of the agreement, and then stored in the monitoring database. b) Each PAI will include a statement on the uniqueness of the

S No	Criterion	How the new project activity instances comply	Evidence
		All rights to distribute the delivered stoves and claim the resultant GHG emissions reductions belong to the PP. The GP will not include any PAI that has been rejected by another GP, or PA-DDs of any other GHG programs.	Project and by listing other similar activities (from other GHG programme registries) that are taking place within the project boundary to demonstrate its uniqueness.
2	Use the technologies or measures specified in the project description.	Only ICS that conform with the GP description are to be distributed in the project. The ICS will be chosen to deliver a level of service at least equivalent to the baseline appliance.	Manufacturer's specifications.
3	Apply the technologies or measures in the same manner as specified in the project description.	The ICS distributed in the PAIs will adhere to the GP description and replace biomass burned in the baseline scenario.	Manufacturer's specifications.
4	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	All new PAIs will be implemented only in regions within the geographic borders of Rwanda subject to the same baseline scenario determined in Section 3.4 in this Project Description. The geographical location of the project ICS can be traced through the information provided in the distribution database, which includes the location data of the ICS distributed.	ICS Distribution database

S No	Criterion	How the new project activity instances comply	Evidence
5	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	All new PAIs will use the activity method for demonstration of additionality. Step 1: Regulatory Surplus There is no government mandated programme or policy in host country of this project ensuring the distribution of new 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. Where the project activity installs or distributes stoves at zero cost to the end-user and has no other source of revenue other than the sale of GHG credits, the project activity shall be deemed additional.	The evidence can be provided in the form of the following: a) An analysis of Rwandan government programmes or policy for cookstoves will be conducted in the PAI design document. See Section 3.5. b) The End User Agreement will confirm that the PAI “installs or distributes stoves at zero cost to the end-user and has no other source of revenue other than the sale of GHG credits.
6	Where a capacity limit applies to a project activity included in the project, no PAI shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows:	The GP does not have any specified capacity limits applicable, since there are no capacity limits defined within the applied methodology, VMR0006, ver. 1.1. Therefore, this eligibility criteria is not applicable.	N/A

S No	Criterion	How the new project activity instances comply	Evidence
	Each device 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.		
Eligibility conditions specific to inclusion of New PAIs			
7	The new PAI must occur within one of the designated geographic areas specified in the project description	The distribution of the ICS will be based on a MoU signed with the Government of Rwanda, and therefore, the project activity only distributes to the beneficiaries that are provided in Ubudehe	1. Sample list of the beneficiaries that are to be provided the project ICS will be shared.

S No	Criterion	How the new project activity instances comply	Evidence
		based list of the districts. There is no way this program/GP can distribute ICS in the boundaries of the neighbouring countries of Rwanda. This requires passing of the project ICS through customs and other procedural regulations.	2. The MoU with the Rwanda government will be shared.
8	The new PAI must 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.	The eligibility criteria set must be complied by the PAIs at all points in time throughout the crediting period. If at any point, it is found that the PAI is not complying with the set of eligibility criteria, then it may be excluded from the crediting for the duration of the monitoring period, until it is able to demonstrate the compliance of the eligibility criteria.	The MR will act as the documentary compliance summary. However, for each specific eligibility criteria (as laid down above), the supporting evidence will be provided by the PP.
9	The new PAI must 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.	The new PAI will include all the technical, financial, geographic and other relevant information related to the compliance of the applicable set of eligibility criteria & also enable sampling by the VVB.	The MR for the specific monitoring period will act as the supporting evidence for the stated condition/requirement.
10	The new PAI must be validated at the time of verification against the	The new PAI(s) shall be part of the monitoring, and therefore, will be validated against the criteria	The Verification Report based on the VCS template, shall be issued by the approved VVB. This

S No	Criterion	How the new project activity instances comply	Evidence
	applicable set of eligibility criteria.	specified, by a VCS accredited/approved VVB.	will act as the supporting evidence against this requirement.
11	The new PAI must 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).	The PAI related evidence on the project ownership will be in the form of a distribution end user receipt poster. This will be signed by the end user, and a photograph of him/her holding the poster along with the ICS will be saved in the PAI database.	1. A photograph of the PAI distribution first end user holding the poster along with the ICS. 2. A scan of the poster, which will show the first distribution date. 3. The distribution database of the GP will provide the start date in the form of the first sales made by the PAI.
12	The new PAI must have a start date that is the same as or later than the grouped project start date.	The new PAI will have a start date later than the GP start date.	This can be verified through the GP distribution database, wherein each new PAI can be verified for its start date.
13	The new PAI must be eligible for crediting from the start date of the instance through to the end of the project crediting period (only).	The PAI will be only eligible for the crediting from its start date through to the end of the project crediting period (only).	1. The start date of the PAI can be checked through the distribution database. 2. The end date of the GP crediting shall be referenced from the VCS Project Registry webpage. 3. The overlap of monitoring periods may be checked through the previous monitoring reports (available publicly on VCS project registry)

S No	Criterion	How the new project activity instances comply	Evidence
			webpage for those periods).
14	The new PAI shall not leave one VCS project and subsequently enroll in another VCS project.	It will be ensured that the PAI that is being enrolled under the VCS GP was not previously enrolled under any other VCS project, and will not be enrolled under other VCS project if it is removed from the VCS GP.	This will be evidenced through a declaration signed by the implementer/investor of the PAI that is enrolled under the VCS GP.

3.2 Participation under Other GHG Programs

It has been confirmed through the description in Joint PD & MR /01/ and through interviews that the project activity does participate as a CPA under CDM PoA9626 in CDM emission trading program. After that project has applied under VCS for registration.

Every PAI that is being added to this Grouped Project, will be required to demonstrate whether they have been registered, or are seeking registration, under any other greenhouse gas programme.

Where the project activity instance has been (or is simultaneously planning to be) registered under any other greenhouse gas programme, the registration number and details will be provided.

Since PAI-2 was registered under CDM, the information is provided in Appendix – 5 of this report.

3.3 Safeguards

3.3.1 No Net Harm

As identified by PP in section 2.1 of the Joint PD & MR /01/, the project has no negative impact.

The validation and verification team confirms that the project does not pose any potential negative environmental and socio-economic impacts. A local stakeholders meeting was conducted for the project and there was no negative feedback.

3.3.2 Local Stakeholder Consultation

The local stakeholder consultation was held between 10 January 2022 to 09 February 2022 in different parts of Rwanda, for both the CPAs, details of which have been provided in the section of 2.2 of the joint PD & MR /01/.

The key comments made by the local stakeholders were all answered during the local stakeholder consultation meetings and have also been provided in the section of 2.2 the joint PD & MR /01 /.

The Project Proponent has reported its feedback and grievance redressal procedure in Section 2.2 of the joint PD & MR /01 /, and the policy is outlined in the document “Project Grievance Redress Mechanism”. In the opinion of the assessment team, based on the onsite inspection interviews and observations, the grievance redressal procedure will address issues that may arise during project planning and implementation.

The grievance redressal process has been designed where beneficiaries and stakeholders have PP’s contact information and the understanding that they should contact the organization with any problems, questions, or grievances. During the onsite inspection interviews and based on document review, it can be confirmed that grievance addressal procedure has been designed and is implemented according to section 2.2 of the Joint PD & MR /01 / and that it is effective in its aim.

VVB confirms the procedure and method for engagement, method for documenting the outcomes of local stakeholders’ consultation and account of all inputs received. The project proponent has represented in the JPDMR that no grievance/input/ feedback received during current monitoring process, the VVB during its onsite audit for current monitoring period has confirmed from the stakeholders about the feedback and grievance options available with them to insure if the end users/stakeholders are aware about the feedback and grievance mechanism. During onsite interviews respondents were found to be aware of the available options (like toll free number and field workers) to establish contact, and no respondent has raised any grievance/complaint. On the basis of its assessment, VVB deemed the local stakeholders ongoing communication as appropriate.

3.3.3 Environmental Impact

No negative environmental impacts have been identified from the project and Environment Impact Assessment is not required for the project.

3.3.4 Public Comments

This Grouped Project was available for public comment during the period 17 March 2022 – 16 April 2022. The public consultation period is over, and no comments were received during this period.

3.3.5 AFOLU-Specific Safeguards

This Grouped Project does not allow for AFOLU project activity instances, and therefore, this section is not applicable.

3.4 Application of Methodology

3.4.1 Title and Reference

The Project provides for projects that use one of the VCS approved methodologies:

- VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1

The associated tools and guideline documents in the Project include:

- Tool 30: Calculation of the fraction of non-renewable biomass, Version 4.0
- Standard: Sampling and Surveys for CDM project activities and programmes of activities, Version 09.0
- Tool 11, “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (version 03.0.1)”

Guidelines:

- Sampling and surveys for CDM project activities and programmes of activities, Version-04.0

3.4.2 Applicability

Table 02: The applicability criteria of the applied methodology VMR0006 version 1.1 is justified as below:

S. No.	Applicability Condition	Justification of applicability
1	Project activities shall be implemented in domestic premises or in community-based kitchens.	Each PAI will distribute technology that is appropriate for domestic use to household end users
2	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; in case of project stove replacing fossil fuel baseline stove, it shall exclusively use renewable biomass.	ICS distributed in each PAI will have a thermal efficiency of at least 25% Each PAI will record the baseline and project fuel use to ensure that wood fuel is the sole source of energy.
3	Both ‘Projects’ and ‘Large Projects’ can use the methodology	PAIs will comply with the GP requirements
4	Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	Each PAI will demonstrate that Non-renewable biomass has been used in the project region since 31 December 1989.

S. No.	Applicability Condition	Justification of applicability
5	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using exclusively renewable biomass (more than one type of biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded.	Biomass residues are not processed as a fuel to be used in the GP.
6	The Project Design Document shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g. programme logo)	In order to avoid double counting of emission reductions through the method of distribution, each cookstove has a unique identifier number and the distribution of each stove is logged onto a database which includes unique information for each recipient Each PI will have system for avoiding double counting with data being collected via a smartphone app (where possible), or via paper forms, including: 4. Date of distribution 5. A unique serial number on each technology Available end-user data: name, phone number, address/physical location, ID number
7	The CDM-PDD or CDM-PoA-DD/CPA-DD shall also explain how the proposed	The End User Agreement confirms that the ownership rights of the ER/Vcus

S. No.	Applicability Condition	Justification of applicability
	procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	generated by the PAI reside with the PP. The signature of each end user confirming their understanding of this agreement will be collected at the point of distribution. The End User Agreement will be in English and translated into a local language where required. If necessary, it will be read out to the End User. All rights to distribute the delivered stoves and claim the resultant emissions reductions belong to the PP. The GP will not include any PAI that has been rejected by another GP, or PA-DDs of any other GHG programs.

Table 1:Tool 30 - Calculation of the fraction of non-renewable biomass

Applicability criterion	How the project complies
This tool may be used by: (a) DNAs to submit region- or country-specific default fNRB values, following the procedures for development, revision, clarification and update of standardized baselines (SB procedures); or (b) project participants to calculate project- or PoA-specific fNRB values.	Option (b) applied to calculate the project specific fNRB value as described under in the separate fNRB spreadsheet submitted to VVB.
Project participants and DNAs shall identify and clearly delineate the applicable area for which fNRB is determined. For project- or PoA-specific fNRB values, project participants shall assess and use the area from which woody biomass is sourced for end-users included in the project activity and justify the selection of the area in CDM project design documents. For region- or country-specific fNRB values, DNAs shall specify the applicable area.	The PP has chosen host country Rwanda as region for the project activity.

Project participants and DNAs may choose between the following two options to determine the value of fNRB: (a) Use the default value as provided in TOOL33; or (b) Calculate fNRB by determining the share of renewable and non-renewable woody biomass in the total quantity of woody biomass consumption for the country/region or the project area (hereinafter referred as the applicable area) following the procedure and requirements in the paragraphs below. The project participants shall compare and analyse the calculated values against the values for fNRB reported in relevant scientific literature and justify any differences. This analysis shall be included in the appropriate section of the PDD. The relevant scientific literature should include at least: (i) Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015). The carbon footprint of traditional woodfuels. Nature Climate Change, 5(3), pp. 266–272.	The PP has chosen option b), wherein a third-party consultant has established the fNRB for host country. Please refer Appendix for calculation details and comparison with literature.
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3.4.3 Project Boundary

The Project boundary is defined as per VMR0006. “Methodology for Installation of High Efficiency Firewood Cookstoves, (Version 1.1)”.

The sources of greenhouse gas identified in the Joint PD & MR /01/ are deemed to be appropriate and assessed below:

Table 03: Project Boundary

Source		Gas	Included?	Justification/Explanation
Baseline	Source 1 – for ICS (Emission from burning of non-renewable Biomass, i.e. Woody Biomass for household cooking requirements)	CO ₂	Yes	Major source
		CH ₄	Yes	Major source
		N ₂ O	Yes	Major source

Source		Gas	Included?	Justification/Explanation
		Other	No	No other source identified
Project	Source 1 – for ICS (Emission from burning of non-renewable Biomass, i.e. Woody Biomass for household cooking requirements)	CO ₂	Yes	Major source
		CH ₄	Yes	Major source
		N ₂ O	Yes	Major source
		Other	No	Not applicable

The project boundary consists of the physical, geographical locations of the distributed ICS limited to Republic of Rwanda. This includes: “The Nonrenewable biomass used by the project cooking system”.

3.4.4 Baseline Scenario

The project activity will use methodology VMR0006 version 1.1/B07/. This is the most recent valid version available on the VERRA site at the time of this combined validation and verification. Since the project activity that apply the indicative simplified methodology VMR0006 version 1.1.

As per paragraph 3.9.8 of the VCS Standard (version 4.4), “Where it is determined that the original baseline scenario is still valid, the GHG emissions associated with the original baseline scenario shall be reassessed using the latest version of the CDM Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period.”

For this Tool 11, “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (version 03.0.1)” has been used. The tool provides a step wise procedure to evaluate validity of the baseline and to update the baseline for the new crediting period. The validity of the baseline is assessed by the following steps:

Step 1: Assess the validity of the current baseline for the next crediting period:

The validity of the current baseline is assessed using the following Sub-steps:

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies.

The current baseline is in compliance with the national and sectoral policies of the host country. There is no mandate imposed by the government of Rwanda on distribution of improved cookstove to the households.

In the absence of the project activity households would have continued the practice of usage of conventional inefficient stoves . There have been no changes in policies which could impact the applicability of the baseline scenario of the project activity. Thus, the current baseline is in compliance with the relevant policies.

Step 1.2: Assess the impact of circumstances.

At the time of validation of the project activity, the baseline scenario was the continuation of current practices. In this case, this would mean that, if the project proponent would not have invested in the project equivalent amount of CO₂ emission would have been generated. There are no rules by government of Rwanda which mandate the investor on selection of this technology and distributing them to the households. The project activity is completely voluntary.

Furthermore, the project proponent has taken the latest data for fNRB calculations at the time of renewal of the crediting period, which itself considered all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission.

Apart from the above, there are several documentaries evidence in the form of recently published reports and papers that can support the fact that the project’s baseline was usage of firewood and unimproved cooking devices.

Some of these are listed below:

1. Ministry of Infrastructure: Biomass accounts for 85% of all energy consumed . Under the National strategy for transformation, the sector objective is to halve the number of households using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass through promotion of most energy efficient technologies.
2. Rwanda Integrated Household Living Conditions Survey, EICV5: In rural areas, firewood remains the most common type of cooking fuel, used by 93% of the households .
3. Rwanda first Biennial Report to UNFCCC: Biomass (mostly wood fuel), is the most used fuel in households for cooking (83 % of households in 2019) and as a source of energy (86.3 % in 2016/2017)

Thus, the people of Rwanda are still dependent of fuelwood for cooking and other thermal purposes. Thus, baseline scenario remains the same.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

This step is not applicable as the project was a new investment by the project proponent.

Step 1.4: Assessment of the validity of the data and parameters:

For the project activity, the fNRB to be determined only once for the crediting period. The parameter is calculated based on geospatial surveys. The results which arise from such surveys has been taken as the values for the parameters which re appropriate.

Steps 1.1, 1.2, 1.3 and 1.4 demonstrate that while the baseline scenario remains unchanged, the fNRB value needs to be updated as per the survey results.

Thus, the parameters have been updated accordingly.

Step 2: Update the current baseline and the data and parameters.

As it is seen from Step 1 that the current baseline needs to be updated, the following sub-steps are used.

Step 2.1: Update the current baseline:

As per the latest version of the approved methodology, VMR0006, version 1.1, the baseline scenario is same as that of the registered VCS-PD. Hence, the current baseline is not required to be updated. As the same version of methodology was used at the time of validation of the project, there is no change in the terminology of any parameters too.

Also, there has been no change in the design or technical parameters of the project activity. Thus, the baseline of the project activity remains the same as that of the registered PD.

Step 2.2: Update the data and parameters:

The applicable parameters, i.e., Bold, η_p , Lifespan, NCVbiomass, EFWT CO₂, EFWT non-CO₂, Leakage factor, fNRB, have been updated accordingly.

VVB based on review of the VCS Joint PD & MR /01 / confirms that the documentary evidence used in determining the above baseline scenarios are relevant, and correctly quoted and interpreted in the project description. The baseline scenario for the applied methodology were also confirmed through on-site interviews with the end users of technologies and representatives of PP.

VVB confirms that the baseline scenario opted by the VCS project is in accordance with the requirements of the applied methodology /B07/ and is justified.

Data source for the key parameters used to calculate emission reductions is furnished below.

Key Parameter	Description	Applied Value/Unit	Data Source
B_{old}	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices	4.4092 ¹ tons/annum	Baseline KPTs, conducted according to KPT Version 4.0
η_p	Efficiency of project stove at the start of project activity	1) Kuniokoa Generation • 0.4387 for project stove without skirting² • 0.51 for project stove with pot skirting³ 2) Dura Woodstove	Certification by the Centre for Research in Energy and Energy Conservation (CREEC) lab. CREEC is a certifying agent recognized by the Rwandan Standards Bureau (RSB).

¹ A baseline firewood consumption of 12.08 kg/HH/day converted into tons/hh/annum. Calculations may be checked in the ER Sheet.

² Certification report provided to the VVB

³ Certification report provided to the VVB

Key Parameter	Description	Applied Value/Unit	Data Source
		0.449 for project stove with skirting⁴ 0.409 for project stove without pot skirting⁵	
Lifespan	State the operating lifetime of project device for projects opting Equation 6 (above) for updating project stove efficiency during project crediting period.	1) Burn Kuniokoa Generation 2 = 10 years 2) Dura Woodstove=7 years	Manufacturer's specifications
NCV _{biomass}	Net calorific value of the non-renewable woody biomass	0.0156 TJ/tonne	VMR0006 V1.1/IPCC Default value
EF _{WT CO2}	CO ₂ emission factor for woody biomass	112 ton CO ₂ /TJ	IPCC Default value.
EF _{WT non-CO2}	Non-CO ₂ emission factor for woody biomass	26.23 ton CO ₂ /TJ	IPCC Default value.
Leakage factor	Net to gross adjustment factor to account for the leakage	0.95	Default value as per methodology
f _{NRB}	Fraction of woody biomass that can be established as non-renewable biomass	0.91	Third party fNRB report in line with TOOL30 Version-4

⁴ Certification report provided to the VVB

⁵ Certification report provided to the VVB

The actual emission reductions will be calculated ex post, based records and data, which are reliable and verifiable.

3.4.5 Additionality

The additionality of the VCS project has been demonstrated by the PP as per the methodology para 7, step 2 which is further demonstrated under section 3.5 of the Joint PD & MR. The methodology uses an activity method for the demonstration of additionality. As per the methodology, the VCS project activity falls under the active method and positive list of technologies and project activity types that are defined as automatically additional. PP has demonstrated regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the VCS Standard and it can be confirmed that the project is not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework.

Furthermore, the project meets all the applicability conditions of the applied methodology VMR0006, version 1.1 /B07/ and where the project activity installs or distributes stoves at zero cost to the end-user and has no other source of revenue other than the sale of GHG credits, the project activity shall be deemed additional.

The additionality has also been included in the eligibility criteria in the PD. Each project activity instance shall meet the requirements of eligibility criteria in order to be included in the grouped project. As per the program definitions of VCS joint PD & MR 'Grouped Project' is defined as, "A project to which additional instances of the project activity, which meet pre-established eligibility criteria, may be added subsequent to project validation" and Project Activity Instance (Instance) is defined as, "A particular set of implemented technologies and/or measures that constitute the minimum unit of activity necessary to comply with the criteria and procedures applicable to the project activity under the methodology applied to the project". Therefore, each ICS is considered as a project activity instance.

Therefore, through document review and on-site interviews with the PP representatives, Validation and Verification team confirms that the grouped project is additional, and all the project activity instances that will be included in the grouped project will meet the eligibility criteria. "DelAgua clean cooking grouped project in Rwanda" is additional – the emission reductions achieved by the project would be below those that would have occurred without the implementation of the project.

3.4.6 Quantification of GHG Emission Reductions and Removals

The equations and choices provided in the methodology and all other methodological tools are correctly quoted in the Joint PD & MR /01 /. The emission reductions of the project instances of the project would be calculated using the formulae mentioned in the applied methodology; VMR0006 (version 1.1) /B07/.

VVB based on the review of the Joint PD & MR /01 /, confirms that the formulae are correctly presented for the determination of emissions reductions at project instance level. The parameters and equations presented in the Joint PD & MR /01 /, as well as other applicable documents, have been compared with the information and requirements presented in the methodology respectively. An equation comparison

has also been made to ensure consistency between all the formulae presented in the Joint PD & MR/01 / and ER spreadsheet/v6/ and methodology VMR0006 (version 1.1) /B07/.

The improved cookstove is introduced as energy efficiency measure in the project, therefore equations 1 and 2 of the methodology VMR0006 will be applied to calculate the net GHG emission reductions.

$$ER_y = \sum_i \sum_j ER_{y,i,j} \quad \text{Equation (1)}$$

Where

i	=	Indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire.
J	=	Indices for the situation where there is more than one batch of improved cookstove of type i .
ER_y	=	Emission reductions during year y in t CO ₂ e
$ER_{y,i,j}$	=	Emission reductions by improved cookstove of type i and batch j during year y in t CO ₂ e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \quad \text{Equation (2)}$$

Where:

$B_{y,savings,i,j}$	=	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
$NCV_{wood\ fuel}$	=	Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)
EF_{wf,CO_2}	=	CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO ₂ /TJ)
$EF_{wf,non\ CO_2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ)
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

The quantify of woody biomass saved due to implementation of improved cookstoves to be estimated using equation below:

$$B_{y,savings,i,j} = B_{y=1,new,i,survey} \times \left(\frac{\eta_{new,y,i,j}}{\eta_{old}} - 1 \right) \quad \text{Equation (4)}$$

Where

- η_{old} = Efficiency of baseline cookstove
- $\eta_{new,y,i,j}$ = Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y . Alternatively, efficiency may be determined using Equation 4.
- $B_{y=1,new,i,j,survey}$ = Annual quantity of woody biomass used by improved cookstoves 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.

$$\eta_{new,y,i,j} = \eta_p \times (DF_n)^{y-1} \times 0.94 \quad \text{Equation (5)}$$

Where,

- η_p = Efficiency of project stove (fraction) at the start of project activity.
- $(DF_n)^{y-1}$ = Discount factor to account for efficiency loss of project cookstove per year of operation (fraction). This value may be based on actual monitoring or based on manufacturer's declaration on expected loss in efficiency or through publicly available literature on relevant industry standards. Alternatively default value of 0.99 efficiency loss per year can be considered.
- 0.94 = Adjustment factor to account for uncertainty related to project cookstove efficiency test.

This project would achieve an estimated total emission reduction of 3,941,567 tCO₂e in the 7-year crediting period and an average of 563,081 tCO₂e per year, as indicated Joint PD & MR /01 / and also in the ex-ante ER spread sheet /01 /. The value of fNRB consider while calculating ER value is 0.91.

In conclusion, all values used in the VCS Joint PD & MR to calculate emission reductions are considered reasonable in the context of the proposed project "DeAgua clean cooking grouped project in Rwanda" and calculation approach is correct.

3.4.7 Methodology Deviations

No methodology deviations have been applied to the project activity.

3.4.8 Monitoring Plan

The project employs baseline and monitoring methodology namely VMR0006, version 1.1 /B07/. According to section 6.1 and 6.2 of Joint PD & MR /01 / the parameters determined ex-ante and those to be monitoring ex-post as per the requirements of the methodology are given below.

The following parameters are determined ex-ante and mentioned in section 6.1 of the PD:

Table 05: Parameters Determined ex-ante

Parameter	Unit	Value	Assessment
B_{old}	tons/annum	4.4092	-Fixed ex-ante -The value of B_{old} can be sourced from historical data or baseline survey. Alternatively, a default value of 0.5t/capita/year may be used.
η_p	Fraction	Kuniokoa Generation 2: 0.4387 for project stove without skirting 0.51 for project stove with pot skirting	- Fixed ex-ante - This value is based on manufacturers specification - Stove efficiency tests performed by CREEC on the Kuniokoa Generation 2:
$EF_{wf,CO2}$	tCO ₂ /TJ	112	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$EF_{wf,non\ CO2}$	tCO ₂ /TJ	26.23	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
NCVbiomass	TJ/ton	0.0156	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$f_{NRB,y}$	Fraction	0.91	- Fixed ex-ante -This value is calculated in line with the applicable methodological CDM Tool 30, version 4.0. The calculation is demonstrated in an excel sheet which has been assessed by the validation team and was found to be acceptable /16/
Leakage Factor	Fraction	0.95	- Fixed ex-ante

Parameter	Unit	Value	Assessment
Life Span	Years	Burn Kuniokoa Generation 2 = 10 years	- Fixed ex-ante -Manufacturer's specifications

Parameters Monitored ex-post

Monitoring of the project activity involves all the parameters necessary for calculation of GHG emission reduction by the proposed project activity. These parameters are mentioned in section 6.2 of the PD. The parameters, which are to be monitored include:

Table 06: Parameters monitored ex-post

Parameter	Unit	Value	Assessment																										
$N_{y,i,j}$ Number of project devices of type i and batch j operating during year y	Number	PAI-2: 195,227 (distributed in 2016) Year-2023-24: 50,000 Year-2024-25: 50,000	This parameter will be monitored at least once every two years based on the monitoring survey.																										
η_{old}	Fraction	0.1	If the device is a three stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney, a default value of 0.1 is used as per the applied methodology; for other types of devices, a default value of 0.2 is used, then as per VMR0006, ver. 1.1, the applied value will be 0.1.																										
$\eta_{new,i,j}$	Fraction	Dura efficiency value for the crediting period years: <table><tr><th rowspan="2">Crediting Period Year</th><th colspan="2">Kumukooa Efficiency value</th></tr><tr><th>With pot skirt</th><th>Without pot skirt</th></tr><tr><td>Year-1</td><td>0.4794</td><td>0.4124</td></tr><tr><td>Year-2</td><td>0.4746</td><td>0.4083</td></tr><tr><td>Year-3</td><td>0.4699</td><td>0.4042</td></tr><tr><td>Year-4</td><td>0.4652</td><td>0.4001</td></tr><tr><td>Year-5</td><td>0.4605</td><td>0.3961</td></tr><tr><td>Year-6</td><td>0.4559</td><td>0.3922</td></tr><tr><td>Year-7</td><td>0.4513</td><td>0.3882</td></tr></table>	Crediting Period Year	Kumukooa Efficiency value		With pot skirt	Without pot skirt	Year-1	0.4794	0.4124	Year-2	0.4746	0.4083	Year-3	0.4699	0.4042	Year-4	0.4652	0.4001	Year-5	0.4605	0.3961	Year-6	0.4559	0.3922	Year-7	0.4513	0.3882	Calculation done as per equation (5)
Crediting Period Year	Kumukooa Efficiency value																												
	With pot skirt	Without pot skirt																											
Year-1	0.4794	0.4124																											
Year-2	0.4746	0.4083																											
Year-3	0.4699	0.4042																											
Year-4	0.4652	0.4001																											
Year-5	0.4605	0.3961																											
Year-6	0.4559	0.3922																											
Year-7	0.4513	0.3882																											

Parameter	Unit	Value	Assessment																										
		<table><tr><td rowspan="2">Crediting Period Year</td><td colspan="2">Dura Efficiency value</td></tr><tr><td>With pot skirt</td><td>Without pot skirt</td></tr><tr><td>Year-1</td><td>0.4221</td><td>0.3845</td></tr><tr><td>Year-2</td><td>0.4178</td><td>0.3806</td></tr><tr><td>Year-3</td><td>0.4137</td><td>0.3768</td></tr><tr><td>Year-4</td><td>0.4095</td><td>0.3730</td></tr><tr><td>Year-5</td><td>0.4054</td><td>0.3693</td></tr><tr><td>Year-6</td><td>0.4014</td><td>0.3656</td></tr><tr><td>Year-7</td><td>0.3974</td><td>0.3620</td></tr></table>	Crediting Period Year	Dura Efficiency value		With pot skirt	Without pot skirt	Year-1	0.4221	0.3845	Year-2	0.4178	0.3806	Year-3	0.4137	0.3768	Year-4	0.4095	0.3730	Year-5	0.4054	0.3693	Year-6	0.4014	0.3656	Year-7	0.3974	0.3620	
Crediting Period Year	Dura Efficiency value																												
	With pot skirt	Without pot skirt																											
Year-1	0.4221	0.3845																											
Year-2	0.4178	0.3806																											
Year-3	0.4137	0.3768																											
Year-4	0.4095	0.3730																											
Year-5	0.4054	0.3693																											
Year-6	0.4014	0.3656																											
Year-7	0.3974	0.3620																											
py	Fraction	0.90 for Kuniokoa Stove 0.75 for Dura stove	If both the improved cookstove and baseline cookstoves are used together, then surveys shall be conducted to record the average continued operation of baseline cookstoves in a sample of households. The surveys should be designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline cookstoves, by formulating questions and/or collecting evidences to determine the frequency of usage of both the improved cookstoves and baseline cookstoves.																										

Parameter	Unit	Value	Assessment
Life Span	Number of years	7 years	The life span of the stove is based on stove manufacturer's specifications and will be monitored once at the time of project stove installation. If the stove life is less than the crediting period, then the PP will either replace the ICS after the end of its life with an equivalent device to continue claim credits or otherwise shall cease claiming credits after the rated lifespan.
Date of commissioning of batch j	Date	01-March-2016 (distribution of first ICS)	The start date of second renewable crediting period is from 15-September-2021.

Assessment of f_{NRB}

PP has contracted an independent party "C4Ecosolutions" for a study and calculation of f_{NRB} as per CDM Methodological Tool: "Calculation of fraction of non- renewable biomass" (v04.0). Validation team confirms that it has checked f_{NRB} calculation spread sheet /11/ prepared by C4Ecosolutions. As per the applied methodological tool, In the case of ex ante calculation of f_{NRB} , the parameter f_{NRB} shall be estimated using the most recent historical year for which data is available. Review of f_{NRB} report /11/ prepared by C4Ecolution revealed that all the data used for the calculation is latest available data at the time of validation.

Review of f_{NRB} calculation spread sheet /11/ prepared by C4Ecosolutions reveals that the total woody biomass consumption in a country comprises its domestic, non-domestic energy and non-domestic non-

energy consumption. For Rwanda, this total is estimated using consumption data sourced from the FAO Forest Products Databases and World Bank population statistics. The reported volumes of fuelwood consumed in cubic meters are converted to metric tonnes using the FAO default conversion factor. The reported value of charcoal consumption is converted to the equivalent woody biomass using the latest CDM Tool 30 v04.0 2022, default charcoal-to-wood biomass conversion factor. Finally, consumed volumes of commercial forest products – including industrial roundwood, sawn wood, veneer sheets and wood-based panels— are converted to metric tonnes using a biomass conversion and expansion factor provided for the region.

Domestic woody biomass consumption is estimated by multiplying the 2019 per capita consumption rates for wood fuel obtained from FAO with Rwanda's total 2021 population. Accordingly, the total domestic woody biomass consumption is conservatively estimated to be 3,811,688 t/yr. The FAO accounts for non-users as the per capita consumption rate of fuel wood is estimated by dividing the total consumption of fuelwood in 2019 by the total population in 2019.

The non-domestic woody biomass consumption is estimated using 2019 per capita consumption rates obtained from FAO and disregards the deforestation likely occurring because of the conversion of land for agricultural use and informal or illegal harvesting, as available data for these activities are scarce. Non-domestic energy consumption is reported as the quantity wood charcoal, and non-domestic non-energy consumption is reported as the quantity of industrial roundwood, sawn wood, veneer sheets and wood-based panels. The 2019 per capita consumption rates were multiplied by the national 2021 Rwandan population for each consumption category and the required units' conversions completed.

Rwanda's non-domestic energy and non-domestic non-energy consumption values are estimated to be 212,424 t/yr and 2,170,711 t/yr, respectively. Rwanda's total woody biomass consumption (H) is the sum of domestic, non-domestic non-energy and non-domestic energy consumption, estimated to be 6,194,823 t/yr.

In Rwanda one ecological zones have been found i.e., Tropical Mountain system, the same was verified by referring the Rwanda ecological zones for FAO forest reporting. The resulting average MAI estimates for Rwanda is 1.82 t/ha/year for the Tropical Mountain system forest. Table below provides the validated total, protected and remote forest cover extent, mean annual increment and renewable biomass by ecological zone for Rwanda.

Table 2: Total, protected, and remote forest cover extent, mean annual increment (MAI), and renewable biomass (RB) by Global Ecological Zone for Rwanda.

Ecological Zone	Total forest cover (ha)	Protected area cover (ha)	Remote area cover (ha)	MAI(t/ha/yr)	Annual growth (t/yr)
Tropical mountain system	467,239	137,289	12,681	1.82	578,495

Ecological Zone	Total forest cover (ha)	Protected area cover (ha)	Remote area cover (ha)	MAI(t/ha/yr)	Annual growth (t/yr)
Total	467,239	137,289	12,681		578,495

The quantity of renewable biomass (RB) for Rwanda as per the verified f_{NRB} report and calculation sheet /11/ is estimated to be 578,495 t/yr. The calculation is based on the equation -04 of tool 30 v04. /B10/, checked and deemed appropriate by the VVB.

The difference between total woody and renewable biomass consumption is non-renewable biomass (NRB) utilization in Rwanda is estimated at 5,598,738 t/yr.

The fraction of non-renewable biomass (f_{NRB}) is the quotient of the non-renewable and the total biomass. The f_{NRB} for Rwanda is, therefore, estimated to be 0.91. From the review of this report/spread sheet /11/ and interviews with the CME and C4 EcoSolutions (Pty) Ltd, validation teams confirm the following:

The report has been prepared by an independent party (i.e., C4 EcoSolutions (Pty) Ltd.), who is experienced in conducting such study.

- The detailed methodology (including the calculation) of conducting the study has been provided in the report /spread sheet /11/.
- The study has been done in accordance with the CDM Methodological Tool: “Calculation of fraction of non- renewable biomass” (v4.0) including the equitation used and the data source as required by the tool.
- All the reference and data source used for the calculation/study has been listed and assessed by the VVB.

In line with tool 30 v4 /B10/, f_{NRB} value has been compared with peer reviewed literature such as “The carbon footprint of traditional wood fuels” by Bailis and colleagues using the WISDOM method”. It has also been observed by the VVB that the resulting value is higher than the expected as per the cited peer reviewed literature. While direct comparisons between the WISDOM and CDM methodologies are only sometimes appropriate, given the different approaches of the methodologies, the following factors can contribute to variations in the f_{NRB} estimates between the two methods:/11/

In accordance with section 3.25.1 of the VCS Standard (version 4.4) /B01/ all documents and records will be kept in a secure and retrievable manner for at least two years after the end of the project crediting period. The data collecting and management methods as provided in section 6.3 of the VCS Joint PD & MR /01/ are acceptable to the validation and verification team. The validation and verification team interviewed representatives of PP and it was established that the database of all the project equipment distributed by PP is created and maintained. The entire database will be kept protected by PP for a period of more than two years after the end of crediting period.

The validation and verification team considers that the means of implementation of the monitoring plan, including the data management, monitoring equipment and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project therein can be reported ex post and verified. In addition, the sampling plan meets the requirements of the monitoring methodology VMR0006 (version 1.1) /B07/ and the Standard of Sampling and Surveys of CDM project activities and Programme of Activities (version 09.0) /B08/ and Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04) /B08 /.

Validation and verification team confirms that the overall monitoring plan complies with the requirements of the methodology VMR0006 (version 1.1) /B07, the monitoring arrangements describes in the monitoring plan are feasible within the project design and the project proponents will be able to implement the described monitoring plan.

3.5 Non-Permanence Risk Analysis

This is not applicable to the project activity as the Project is not an AFOLU (Agriculture, Forestry and Other Land Use) project.

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology and all other methodological tools are correctly quoted in the Joint PD & MR /01/. The emission reductions of the project instances of the project and project activity are calculated using the formulae mentioned in the applied methodologies; VMR0006 version 1.1/B07/. The validation and verification team has reviewed the emission reduction spread sheets (ER sheets) and checked all the formulae and found they are correct and are in accordance with the monitoring plan of the PD and the applied monitoring methodology.

According to applied methodology VMR0006 (version 1.1) /B07/ the emissions are calculated as below:

Baseline Emission

$$ER_y = \sum_i \sum_j ER_{y,i,j} \quad \text{Equation (1)}$$

Where,

- i = Indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire
- j = Indices for the situation where there is more than one batch of improved cookstove of type i
- ER_y = Emission reductions during year y in t CO₂e
- $ER_{y,i,j}$ = Emission reductions by improved cookstove of type i and batch j during year y in t CO₂e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \quad \text{Equation (2)}$$

Where,

- $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
- $f_{NRB,y}$ = Fraction of woody biomass that can be established as non-renewable biomass (fNRB)
- $NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)

EF_{wf,CO_2}	=	CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO ₂ /TJ)
$EF_{wf,non\ CO_2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ)
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

The quantify of woody biomass saved $B_{y,savings,i,j}$ due to implementation of improved cook stoves will be estimated using Equations 3 of applied approved methodology:

$$B_{y,savings,i,j} = B_{old} \times \left(\frac{1-\eta_{old}}{\eta_{new,i,j}} \right) \quad \text{Equation (4)}$$

Where

$\eta_{new,y,i,j}$	=	Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y Alternatively, efficiency may be determined using Equation 4.
B_{old}	=	Annual quantity of woody biomass that would have been used in the absence of the project activity (in tonnes per device) to generate useful thermal energy equivalent to that provided by the improved cook stove. The value of Bold can be sourced from historical data or baseline surveys.

The efficiency of the project stoves can be estimated using equation below:

$$\eta_{new,y,i,j} = \eta_p \times (DF_n)^{y-1} \times 0.94 \quad \text{Equation (5)}$$

Where,

η_p = Efficiency of project stove (fraction) at the start of project activity.

$(DF_n)^{y-1}$ = Discount factor to account for efficiency loss of project cookstove per year of operation (fraction). This value may be based on actual monitoring or based on manufacturer's declaration on expected loss in efficiency or through publicly available literature on relevant industry standards. Alternatively default value of 0.99 efficiency loss per year can be considered.

0.94 = Adjustment factor to account for uncertainty related to project cookstove efficiency test.

The PAI-2 involves distribution of only one type of ICS i.e. Dura cookstoves and all ICS under project considered for emission reduction calculation from 15th September 2021 to 28th February 2023 (Both days included).

Calculation for year 15-September-2021 to 31-December-2021:

Parameter	Unit	Value	Source
$N_{y,i,j}$	Number	195,227	Distribution database
$NCV_{wood\ fuel}$	TJ/Tonne	0.0156	IPCC default value for wood fuel
f_{NRB}	fraction	0.91	Third party fNRB report in line with TOOL30
$EF_{wf,non\ CO_2}$	tCO ₂ e/TJ	26.23	IPCC default value for wood fuel
EF_{wf,CO_2}	tCO ₂ e/TJ	112	IPCC default value for wood fuel
η_{old}	fraction	0.1026	Values established as per monitoring survey of HHs and distribution records
$\eta_{new,i,j}$	fraction	0.3888	Weighted average calculated in ER sheet
$B_{old_adjusted}$	Tonne/HH/year	2.953	After adjusting baseline stove usage.
$B_{y,savings,i,j}$	Tonne/HH/year	2.174	Calculated
μ_y	fraction	0.6698	As per survey report conducted from 28-Feb-23 to 04-Mar-23

The emission reduction is calculated as below for ICS operational during 15-September-2021 to 31-December-2021 is calculated based on number of days of operation.

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \times \mu_y$$

$$= 234,105\ tCO_2e$$

$$ER_{y,2021} = 234,105\ tCO_2e$$

$$ER_{2022} = 788,326\ tCO_2e$$

$$ER_{2023} = 126,960\ tCO_2e$$

Sample VCU estimates (based on the calculation for first year of ICS monitoring estimates):

If the baseline stove usage is 10.0% of the total cooking in the first year, then the factor μ will be 0.1. The B_{old} value is applied using the available baseline data.

Sampling approach: -

In situations where the monitoring of a parameter is based on data, which is being recorded only once at the time of implementation/distribution, particularly for distribution projects, where there are large/dispersed numbers of project technology, the VV team will do an assessment of the accuracy of such data/information during the onsite verification through document review and where applicable through acceptance sampling.

As assessed in this section, emission reductions for the project “DelAgua clean cooking grouped project in Rwanda ” have been claimed for this monitoring period and the total population of the stoves for this monitoring period 01/01/2021 -28/02/2023 is 1,95,227 ICS.

As per sample size calculated the number of samples comes less than 100, however the actual sample size considered for the during current verification is 157 samples, which is conservative. The sample survey carried out from 28-February-2023 to 04-March-2023. The sampling survey results shows that all the ICS were found operational during current monitoring period. Further, during monitoring survey it was also found that 33.02% baseline stove usage along with project stove, the same has been considered for adjustment in B_{old} for emission reduction calculation. Further, as per monitoring survey pot skirt usage rate found as 53.97%, the same has been used to calculate weighted average of improved cookstove efficiency for emission reduction calculation. The sampling was undertaken by complying the 95/10 confidence precession as survey sample conducted for the project activity. As per survey results the project have achieved the required confidence and precision level as margin of error is less than 1%, which in line with the applied methodology VMR 0006 version 1.1/B07/. As the VCS Joint PD & MR /01/ mentions the option for simple random sampling procedure, it is acceptable to the validation and verification team.

The sampling surveys have been carried out by the well-trained personnel /18/. Monitoring parameters $N_{y,j}$ and μ are monitored through monitoring sample surveys. Monitoring of the parameters ensures compliance with the applied methodology VMR0006, version 1.1 /B07/. The Validation and verification team has checked the survey records /19/. Parameter $N_{y,j}$ monitors the number of stoves in operation and the parameters $B_{y=1,new,i,j}$ survey monitors quantity of woody biomass used by project device.

VVB used acceptance sampling during the verification stage of this joint validation and verification to check the households' operational status. The sampling done by VVB reflects the population of the project activity. applying paragraph 39 (c) of the sampling standard, version 09 /B04/, 16 sample were chosen (with no discrepant records). 08 from monitoring and 08 from the baseline survey, based on an AQL of 0.5% and UQL of 20%, producer risk of 10%, and consumer risk of 10%. Acceptance number (c) thus determined for the sample is 0. It was observed that out of the 08 samples from monitoring, all the 08 stoves were found to be operational, and this matched with the PP's records hence no discrepant records were observed with the Joint PD & MR /01/ and ER sheets /02/ and thus $c=0$. however, for the baseline survey, 08 samples were interviewed to confirm the baseline as it is found to be in line with a requirement of methodology, Thus, PP's records have been accepted in line with § 33 of the sampling standard,

version 09 /B08/. assumptions and calculations made by PP are deemed to be appropriate to Validation and Verification team.

The monitoring parameters to be monitored through the sampling plan are:

- Number of project devices operating during year y ($N_{y,j}$)
- Adjustment to account for any continued use of pre-project devices during the year y ($\mu_{y,i,j}$).

As per the applied methodology VMR0006 version 01.1 section 9.2 /B02/. The necessary confidence / precision of 90/10 each of the parameters are met. This has been cross verified by the verification team from the supporting documents submitted/13/.

On site assessment of Monitoring parameters ($\mu_{y,i,j}$ and $N_{y,i,j}$) was conducted based on following two methods.

- Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign $\mu_{y,i,j}$ and survey on stove operation (for the parameter $N_{y,i,j}$).
- Assessment of Competence of personnel involved in conducting standardized tests and surveys: Verification team has reviewed the abilities, qualifications, and recognition of involved personnel. The verification team based on the onsite inspection interviews confirms that the team was qualified to carry out the monitoring of the parameters in line with the methodology.

During the onsite interviews with PP's representative, VVB was able to understand the process in line with the methodology VMR0006 version 1.1/B02/ and the PP monitoring procedure in line with the VCS Joint PD & MR /01/.

It is worth to note here that PP has selected the same households for both parameters above and for the same reason, VVB's sample for acceptance sampling was the same for both the parameters. VVB could verify the original survey forms /07/ and data/information flow to sampling sheet/08/ and ER spread sheet/03-c/. No discrepancy was found in the data/information flow. As per section 2.3 above the end users were not interviewed in a single day. Hence, the survey process deemed acceptable to the verification team.

Furthermore, the database /09/ and sample sales invoice /16/ were also checked/cross verified to confirm the number cookstoves for the parameter $N_{y,i,j}$.

As per paragraph 25 of the Sampling Standard, version 09 /B04/, the verification team has to verify whether the project participants entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- (a) Whether the required confidence/precision has been met
- (b) Whether the selected sample was representative of the population.

Emission reductions have been calculated in accordance with the applied methodology VMR0006 version 1.1 /B07/. The PP has used monitored data and ex-ante fixed data including default values as mandated/permitted by the applied methodology. The values used for calculation of GHG emission reductions have been thoroughly checked by the validation and verification team and was found appropriate and correct. The Parameters Determined ex-ante is listed in section 6.1 of this Joint validation and verification report. The spread sheet submitted by the PP clearly and transparently mentions values

of the data parameters used for calculation of emission reductions. The input values have been verified from the reliable and authentic sources including monitoring records (distribution records) /09/, VCS Joint PD & MR /01/ and applied methodology /B07/. The emission reductions calculated were compared with the ex-post emission reduction spread sheet /02/ and found to be correct. No significant reporting risks have been identified for the data reported.

The monitoring parameters to be monitored through the sampling plan are:

Table 4:- Parameters monitored ex-post

Monitoring Parameter Requirement	Assessment/ Observation by the VVB		
Data / Parameter: (as in monitoring plan of VCS PD):	Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)		
Measuring frequency/Time Interval:	At least once every two years		
Reporting frequency:	At least once every two years		
Reported value:	ICS considered as operational for the monitoring period – 2: <table border="1"> <tr> <td>PAI-2</td><td>195,227</td></tr> </table> During current monitoring period all the ICS units distributed under PAI-2 are considered for the VCU calculation. The sampling was undertaken by complying the 95/10 confidence precession as survey sample conducted for the project activity. As per survey results the project have achieved the required confidence and precision level. All the ICS units distributed during current monitoring period are considered for the VCU calculation, as the monitoring surveys provide a 100% operational rate.	PAI-2	195,227
PAI-2	195,227		
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes		
Details of monitoring equipment:	Value obtained from monitoring survey of samples		
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not	NA		

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with monitoring survey records /08/ and the ER sheet /02/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB		
Data / Parameter: (as in monitoring plan of VCS PD):	Efficiency of the improved cookstove type i and batch j during year y ($\eta_{new,y,i,j}$)		
Measuring frequency/Time Interval:	Annually		
Reporting frequency:	Annually		
Reported value:	Year (y) Crediting Period	$\eta_{new,y,i,j}$ stove with skirt	$\eta_{new,y,i,j}$ stove without skirt
	2021	0.4054	0.3693
	2022	0.4014	0.3656
	2023	0.3974	0.3620
	Only Dura stove distributed and operational during current monitoring period under PAI-2.		
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes		
Details of monitoring equipment:	Value is calculated in the ER spread sheet /02/		
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA		
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA		
Is the calibration interval in line with the monitoring plan of VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD		

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR/01/ has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS PD):	<i>η_{old}</i> Efficiency of baseline stove
Measuring frequency/Time Interval:	Annually
Reporting frequency:	Annually
Reported value:	0.1026
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Details of monitoring equipment:	Value is calculated in the ER spread sheet /02/
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR/01/ has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
conservative assumption theoretically possible been applied or has a request for deviation been approved?	

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS PD):	Date of commissioning of batch j
Measuring frequency/Time Interval:	Annually
Reporting frequency:	Annually
Reported value:	01-March-2016 (distribution of first ICS) The start date of second renewable crediting period is from 15-September-2021.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value is calculated in the ER spread sheet /02/
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD
Company performing the calibration (internal or external calibration):	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR/01/ has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS PD):	μy
Measuring frequency/Time Interval:	At least once every two years
Reporting frequency:	At least once every two years
Reported value:	0.6698
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from ER calculation /02/

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Calibration of weighing scales used for measuring the fuel wood was done in house before start using on site. QA/QC procedures stated in MR/01/ comply with VCS PD
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data from monitoring survey and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
theoretically possible been applied or has a request for deviation been approved?	
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data from monitoring survey /08/ and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

VVB confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered VCS Joint PD & MR /01/. The total number of emission reductions for the monitoring period from 15th September 2021 to 28th February 2023 is 1,149,391 tCO_{2e}.

VVB has checked and confirmed the calculations in the spreadsheet and found to be accurate. The monitoring report is supported by an emission reduction spreadsheet. The consistency and formula were verified and found to be accurate.

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

When verifying the reported emission reduction, CCIPL ensured that there was a clear audit trail that contained the evidence and records that verify the stated figures. All source documents that form the basis for assumptions and other information underlying the GHG data are shown above.

When assessing the audit trails, CCIPL also examined:

- whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
- the source and nature of the evidence
- if comparable information was available from sources other than that used in the monitoring report, CCIPL cross-checked the monitoring report against the other sources to

confirm that the stated figures were correct. The sources and the data referenced are shown in Appendix 1 below.

CC IPL also assessed that the data collection system met the requirements of the monitoring plan as per the applied methodology.

Proper data management inclusive of data acquisition and aggregation, data management system is being followed for the project activity.

The monitoring personnel at site are well trained and follow reproducible routines. Thus, they are competent to carry out the relevant tasks with sufficient accuracy.

5 VALIDATION AND VERIFICATION OPINION

The Project Proponent, “DelAgua clean cooking grouped project in Rwanda”, has commissioned the VVB, Carbon Check (India) Private Ltd. to perform a Joint validation and verification of the VCS Project Activity for renewable of the crediting period and periodic verification of monitoring period (15 September 2021 to 28 February 2023). This report summarizes the findings of the validation and verification of the project, performed on the basis of VCS criteria, as well as criteria given to provide for consistent project operations, monitoring, and reporting.

The validation and verification process were performed on the basis of all guidance and criteria as provided in VCS Standard version 4.4 /B01/, VCS Program Guide version 4.3 /B02/, VCS Validation and Verification Manual version 3.2/B01/ and Registration & Issuance Process version 4.3/B02/.

The project activity provides the information in Joint PD & MR /01/ as required by the VCS Standard /B01-a/ and Validation and Verification Manual /B01/ and in Carbon Check’s opinion meets the requirements of the applied baseline and monitoring methodology, VMR0006 version 1.1 /B07/and is likely to achieve the estimated emission reductions. The joint validation and verification have been performed using a risk- based approach, as described above. The expected annual average emission reductions from the project activity are 563,081 tCO₂e and 3,941,567 tCO₂e over the 7 years of crediting period.

Table 09: Estimated GHG emission reductions or removals (tCO₂e)

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
15/09/2021-31/12/2021	2,61,409
01/01/2022-31/12/2022	8,80,356
01/01/2023-31/12/2023	2,82,745
01/01/2024-31/12/2024	5,62,637
01/01/2025-31/12/2025	5,47,686
01/01/2026-31/12/2026	5,33,018
01/01/2027-31/12/2027	5,18,630
01/01/2028-14/09/2028	3,55,086
Total estimated ERs	39,41,567
Total number of crediting years	7

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
Average annual ERs	5,63,081

Carbon Check (India) Private Ltd concludes the validation with a positive opinion that the VCS Project Activity “DelAgua clean cooking grouped project in Rwanda”, as described in the VCS Joint PD & MR (version 14.2,) , meets all the applicable VCS requirements, including those specified in the Project Standard, relevant methodology, tools, and guidelines.

The selected baseline and monitoring methodology, VMR0006, Version 1.1/B07/ is applicable to the project and correctly applied. Carbon Check (India) Private Ltd therefore requests the registration of the project as a VCS project activity.

The VVB confirms that the project has been implemented in accordance with the Joint PD & MR/01 /.

Monitoring period: The first cookstove under this project distributed on 01 March 2016. The second monitoring period for the project activity is 15-September-2021 to 28-February-2023. The actual emission reduction achieved during current monitoring period is 1,149,391 tCO₂e.

The registered VCS grouped project has included PAI-1 and PAI-2, wherein operational lifetime of ICS included under PAI-1 has ended during first periodic verification. During current monitoring period the ICS distributed under PAI-2 i.e. 195,227 ICS considered for emission reduction calculation being distribution between 01 March 2016 to 02 November 2016 are operating successfully, further PP will distribute additional 100,000 ICSs (2023-24-50,000 ICSs: 2024-25-50,000 ICSs) under PAI-3. The ICS operational during current monitoring period are 195,227 and the actual emission reduction achieved during current monitoring period is 1,149,391 tCO₂e.

Table 10: Net GHG emission reductions or removals (tCO₂e)

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
15/09/2021 – 31/12/2021		-	-	234,105
01/01/2022 – 31/12/2022		-	-	788,326
01/01/2023 – 28/02/2023		-	-	126,960
Total		-	-	1,149,391

The verification team is of the opinion that the project has been implemented in accordance with the joint PD & MR. The monitoring complies with the MP and the monitored data and calculation of ERs are assessed and confirmed as correct.

Therefore, CCIPL hereby certifies, and requests the issuance of, the reported ERs during the monitoring period of 15-September-2021 to 28-February-2023 amounting to 1,149,391 tCO₂e to the VCS Registry.

Table 11: Percentage difference for ex-ante and achieved ERs with justification.

<u>Ex-ante emissions reductions /removals</u>	<u>Achieved emissions reductions/ removals</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
261,409	234,105	-10.44%	The actual emission reduction achieved during the current monitoring period are lower than the ex-ante estimations as the ex-post monitoring survey results were different than the estimations. .
880,356	788,326	-10.45%	
140,364	126,960	-9.55%	

APPENDIX 1.1: REFERENCE DOCUMENTS

Ref	Document
/01/	Joint Project description and Monitoring Report titled: a) DelAgua clean cooking grouped project in Rwanda v5 dated 20/06/2023 b) DelAgua clean cooking grouped project in Rwanda v6 dated 27/02/2024
/02/	ER calculation spreadsheet, version 1.1, dated: 06/06/2023 ER calculation spreadsheet, version 6, dated: 27/02/2024
/03/	Stove manufacturers emission and performance test protocol (EPTP)
/04/	Technical specifications of the project stoves including their efficiency (CREEC 26.3% efficiency).
/05/	Clean cooking catalog - stove.
/06/	Declaration(s) from Project proponent on the following: a) Project not registered or under process of registration in any other Emissions Trading Programs and Other Binding Limits. b) Project not registered or under process of getting and Other Forms of Environmental Credit c) The project has not been registered and is not seeking registration under any other GHG program. Projects not Rejected by Other GHG Programs.
/07/	Double counting risk declaration
/08/	Local stakeholders meeting related evidence.
/09/	Global Forest Watch – Rwanda.
/10/	Quality control organizational structure.
/11/	Agreements with technology supplier and owner of each individual ICS clearly indicating the transfer of right of carbon credits to PP(CTF).
/12/	Total distribution Records (TDR)
/13/	Calculation of fNRB along with all supporting evidence: fNRB calculation sheet version 1 dated 15/02/2023. fNRB calculation sheet version 2 dated 04/06/2023. Global Forest Resources Assessment 2020: Rwanda
/14/	Evidence for the start date of the project activity for each district in Rwanda.
/15/	Company registration certificate DelAgua
/16/	BEST study Details EXERGIA.
/17/	WBT / Manufacturer stove – web link Clean Cooking Catalog - Functional Demo (cleancookstoves.org)
/18/	Training Record
/19/	Survey records for the monitoring period including sampling sheet.

APPENDIX 1.2: BACKGROUND DOCUMENTS

Ref	Document
/B01/	VCS Standard (v4.4)
/B02/	VCS Program Guide (v4.3)
/B03/	VCS Validation and Verification Manual version 3.2
/B04/	Registration & Issuance Process (v4.3)
/B05/	VCS Programme Definitions version 4.3
/B06/	VCS PD template version 4.2
/B07/	Applied baseline and monitoring methodology, VMR0006 (version 1.1)
/B08/	a. "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0) Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04)
/B09/	https://cdm.unfccc.int/
/B10/	CDM Tool 30: Calculation of the fraction of non-renewable biomass, Version 4.0
/B11/	CDM approved small scale methodology, AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass (version 11.1)

APPENDIX 2: ABBREVIATIONS

CDM	Clean Development Mechanism
BE	Baseline Emission
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
DPR	Detailed project report
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
MW	Mega Watt
MWh	Mega Watt Hour
NA	Not Applicable
OSV	On Site Visit
PD	Project Description
PP	Project Proponent
QC/QA	Quality control/Quality assurance
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VC SA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation Verification Body
VVM	Validation and Verification Manual
VVS	Validation and Verification Standard

APPENDIX 3: CERTIFICATES OF COMPETENCE



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Harish Sharma

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

5th December 2023

Priya Suman

Ms. Priya Suman
Compliance Officer

Expiry Date

31st December 2024

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

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

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Siddhant Bankar

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

for the following functions and requirements:

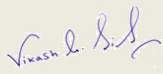
- | | | | |
|---|--|--|--|
| ☒ Validator | ☒ Verifier | ☐ Team Leader | ☒ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ SDG+ | ☐ Social no-harm(S+) | ☐ Environment no-harm(E+) | ☐ CCB Expert |
| ☐ Financial Expert | ☒ Local Expert for India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

in the following Technical Areas:

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

Issue Date
1st January 2023

Expiry Date
31st December 2023


Mr. Vikash Kumar Singh
Compliance Officer


Mr. Amit Anand
CEO



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

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

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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

APPENDIX 4: FINDINGS LOG

Table 1. CLs from this Joint validation and verification

CL ID	01	Section no.	1.4.7	Date: 14/06/2023
Description of CL				
It is represented that DelAgua has executed a Memorandum of Understanding with the Government of Rwanda, whereby DelAgua is assigned responsibility for managing and implementing the project and is recognized as the sole direct recipient of all carbon credits derived from it. PP shall share MoU signed with GoU. Furthermore, PP shall clarify what it meant by "Ubudehe based distribution list of the districts".				
Project participant response				Date: 15/06/2023
Ubudehe in Rwandan culture refers to collective action by society to reform/correct any ongoing wrong or ineffective practices. The host country Rwanda is facing challenges on deforestation due to wrong practices on wood usage by households and if another decade the forest resources utilise in similar way, the same will reach to irreversible stage. The people have identified this issue and to minimise the impact a collective reform by using improved cookstove to save wood fuel usage is being planned and implemented voluntarily. As the issue can only be resolved by participation of whole society, hence as per Rwandan culture the same is referred as "Ubudehe".				
Documentation provided by project participant				
--				
VVB assessment				Date: 20/06/2023
PP clarified the concept of "Ubudehe" in Rwandan culture, which signifies collective action by society to address ongoing wrong or ineffective practices. It acknowledges the challenges faced by Rwanda in terms of deforestation caused by unsustainable wood usage in households. The statement emphasizes the need for a collective reform to minimize the impact and protect forest resources. The implementation of improved cookstoves as a voluntary measure to save wood fuel usage aligns with the values of participation and community involvement inherent in Rwandan culture.				
However, as represented in JPDMR that DelAgua has executed a Memorandum of Understanding with the Government of Rwanda, PP is yet to submit the document.				
CL # 01 is open.				
Project participant response				Date: 24/06/2023
The MoU with Government of Rwanda is provided with this response.				
Documentation provided by project participant				
<i>MoU</i>				
VVB assessment				Date: 27/06/2023

The document "GoR DA MoU Both parties signed FINAL 31.5.2019" has been submitted by PP against a requirement of **Memorandum of Understanding with the Government of Rwanda** which was deemed to be appropriate.

CL is closed

CL ID	02	Section no.	1.8	Date: 14/06/2023
Description of CL				
As per submitted exemption letter, PP shall clarify the statement "project must complete validation by 31 May 2023, the project cannot request registration should it fail to comply with the extended deadline."				
Project participant response				Date: 15/06/2023
The exemption letter was issued in context of VCS project registration i.e. 2749, however the project is already registered and as per crediting period chosen is to be validated for renewal of second crediting period. The exemption letter is not relevant to renewal of crediting period.				
Documentation provided by project participant				
--				
VVB assessment				Date: 20/06/2023
CME clarified that the exemption letter was issued with deadline that project must complete VCS validation by 31 May 2023 for which PP has already get the project registered under VCS within the stipulated timeline. VVB noted that the said exemption is not applicable for the current validation of renewable period.				
CL #02 is closed.				

CL ID	03	Section no.	1.11	Date: 14/06/2023
Description of CL				
It is found that during CDM registration the life span of the project devices were claimed as 6 to 7 years. PP shall clarify how the life span is now being claimed for 10 years.				
Project participant response				Date: 15/06/2023
The ICS models deployed has a operational lifetime of 10 years, the same is already validated and project is registered with VERRA, please refer registration details VCS 2749.				
Documentation provided by project participant				
VVB assessment				Date: 20/06/2023

PP clarified the operational lifetime of the cookstoves have already been validated and certified by VERRA. VVB cross check with the certified PD and found it in line with the PP clarification.

CL #03 is closed.

Table 2. CARs from this Joint validation and verification

CAR ID	01	Section no.	Front Page	Date: 14/06/2023
Description of CAR				
In line with the template version 4.2, CME shall mention telephone, email, website in the contact section				
Project participant response				Date: 15/06/2023
The details as template guideline is incorporated in revised JPD/MR.				
Documentation provided by project participant				
<i>JPD/MR Version-5</i>				
VVB assessment				Date: 20/06/2023
The updates are evident in the revised version of JPD/MR.				
CAR # 01 is closed.				

CAR ID	02	Section no.	Index Content	Date: 14/06/2023
Description of CAR				
It is found that section 4.4 of the index contains the paragraph justifying the methodology and limit. PP Shall correct the index as per the VCS PD template.				
Project participant response				Date: 15/06/2023
The relevant correction being done in revised JPD/MR				
Documentation provided by project participant				
<i>JPD/MR Version-5</i>				
VVB assessment				Date: 20/06/2023
As the PP has adopted the latest template of Joint PD and MR instead of earlier VCS PD template. Hence, the CAR # 02 is not applicable now.				
CAR #02 is closed.				

CAR ID	03	Section no.	1.1	Date: 14/06/2023
Description of CAR				
PP shall elaborate central distribution method and how PP shall address customer grievance in this method.				
Project participant response				Date: 15/06/2023
The distribution method and grievance input/redressal mechanism is elaborated in revised JPD/MR.				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
VVB has assessed that the PP represented that the project technologies, ICS will be directly distributed to end-users via either of two methods: 1 - at centralized distribution points, where end-users from surrounding villages will be educated on the proper use and maintenance of the technologies. 2 – at retail locations, where individuals will be informed and trained (on the project technology usage, benefits, maintenance, and grievance mechanism) directly by retailers. VVB through the assessment of documents and on site visit found the distribution methods and feedback mechanism in line with the PP's clarification. CAR #03 is closed.				

CAR ID	04	Section no.	1.3	Date: 14/06/2023
Description of CAR				
In section 1.3 of the VCS PD, PP shall refer the latest VCS standard ver 4.3 for the project eligibility under the scope of VCS.				
Project participant response				Date: 15/06/2023
As the project is already registered with VCS, the eligibility of the project is already validated and accepted by VERRA. However, the same has been re-assessed in line with VCS Standard 4.4, the project meets the requirement of latest version of VCS standard as well.				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
VVB has assessed that the eligibility criteria have been updated as per latest VCS standard ver 4.4. CAR # 04 is closed.				

CAR ID	05	Section no.	1.3	Date: 14/06/2023
Description of CAR				
The sentence "The six Kyoto Protocol greenhouse gases" of table 1 of section 1.3 is not in line with section 2.1.1 of VCS Standard v4.4.				
Project participant response				Date: 15/06/2023
As the project is already registered with VCS reassessment of these section is not required during renewal of crediting period, however PP has now incorporated the revised assessment in line with VCS Standard Version-4.4				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
VVB assessed that in revised version the statement has been corrected in line with with section 2.1.1 of VCS Standard v4.4.				
CAR #05 is closed.				

CAR ID	06	Section no.	1.3	Date: 14/06/2023
Description of CAR				
As per section 3.3. CO2 is the major source of emission reduction. This does comply with table 1 of 1.3.				
Project participant response				Date: 15/06/2023
There was typo error the same has been corrected in revised JPD/MR.				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
The major source of emission reduction has now been consistently represented in all sections of the updated JPD/MR.				
CAR # 06 is closed.				

CAR ID	07	Section no.	1.4.7	Date: 14/06/2023
Description of CAR				

In line with the template version 4.2, CME shall use check points as per VCS JPDMR templet v4.2 for better understanding.	
Project participant response	Date: 15/06/2023
The relevant changes incorporated in revised JPD/MR.	
Documentation provided by project participant	
JPD/MR Version-5	
VVB assessment	Date: 26/06/2023
PP has given an justification in JPD/MR under section 1.4.7 which is deemed to be appropriate. Hence CAR is closed	

CAR ID	08	Section no.	1.4 .13	Date: 14/06/2023
Description of CAR				
VVB has assessed that in section 1.4, the explanation for the compliance of criterion 13 is not in line with the requirement of the stipulated criterion, PP to update appropriately.				
Project participant response				Date: 15/06/2023
The criteria 13 was designed in line with applicable version of VCS Standard at the time of preparation of VCS JPD/MR during registration of the project, the same has been corrected in line with latest version of VCS standard in revised JPD/MR.				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
PP has clarified and VVB assessed that the applicability criteria has been updated and the compliance of criteria 13 is now as per the requirement.				
CAR # 08 is closed.				

CAR ID	09	Section no.	1.5	Date: 14/06/2023
Description of CAR				
It is represented that the main reason for CME transferring the GHG emission rights was its inability to operate the CPAs owing to the lack of funds and interest among the financing entities. Therefore, the GHG Emission rights belonging to those ICS are transferred by the CDM PoA CME to DelAgua (DelAgua Health Rwanda Voluntary Limited), from the effective date 01-Jan-2019. CME shall submit the GHG ER rights transfer agreement for the validation of VBB.				
Project participant response				Date: 15/06/2023

The agreement regarding transfer of ownership and carbon waiver rights is provided along with this response.	
Documentation provided by project participant	
Agreement	
VVB assessment	Date: 20/06/2023
PP has submitted the ownership agreement. CAR #09 is closed.	

CAR ID	10	Section no.	1.5	Date: 14/06/2023
Description of CAR				
PP shall update the title/designation and email address of the contact person.				
Project participant response				Date: 15/06/2023
The email is updated for focal person in revised JPD/MR				
Documentation provided by project participant				
JPD/MR Version-5				
VVB assessment				Date: 20/06/2023
Section 1.5 has been updated appropriately. CAR # 10 is closed.				

CAR ID	11	Section no.	1.10	Date: 14/06/2023
Description of CAR				
In line with the template version 4.2, CME shall update the estimated annual GHG emission reductions/removals of the project range.				
Project participant response				Date: 15/06/2023
The estimated emission reduction for second renewable crediting period incorporated in revised JPD/MR.				
Documentation provided by project participant				
JPD/MR				
VVB assessment				Date: 20/06/2023
The estimated range of annual GHG emission reductions/removals of the project are still not selected as per the template.				

☐ <20,000 tCO ₂ e/year ☐ 20,000 – 100,000 tCO ₂ e/year ☐ 100,001 – 1,000,000 tCO ₂ e/year ☐ >1,000,000 tCO ₂ e/year	
Project participant response	Date: 20/06/2023
The estimated range of annual GHG emission reductions/removals of the project is mentioned	
Documentation provided by project participant	
JPD/MR Version-5	
VVB assessment	Date: 25/06/2023
The required information has been added. Hence CAR 11 is closed.	

CAR ID	12	Section no.	1.11	Date: 14/06/2023
Description of CAR				
PP shall submit Burn manufacturer data sheet with technical specifications. The submitted datasheet and technical specification does not comply the information written in section 1.11 under ICS technologies planned under the GP for distribution heading.				
Project participant response				Date: 15/06/2023
The detailed technical specification for all ICS model used in grouped project activity is provided along with this response.				
Documentation provided by project participant				
Technical specification of ICS				
VVB assessment				Date: XX/XX/XXXX
The detailed technical specifications for all the Improved Cookstove (ICS) models used in the grouped project activity has been received. VVB has thoroughly reviewed the provided information confirm the closure of the Corrective Action Request (CAR).				
CAR # 12 is closed,				

CAR ID	13	Section no.	1.11	Date: 14/06/2023
Description of CAR				
PP shall share/submit the WBT certificate				
Project participant response				Date: 15/06/2023
The CREEC lab report for ICS model deployed in the grouped project activity is provided along with response.				
Documentation provided by project participant				
<i>CREEC lab report</i>				
VVB assessment				Date: 20/06/2023
The CREEC lab report for all the Improved Cookstove (ICS) models used in the grouped project activity has been received. VVB has thoroughly reviewed the provided information confirm the closure of the Corrective Action Request (CAR).				
CAR # 13 is closed,				

CAR ID	14	Section no.	1.12	Date: 14/06/2023
Description of CAR				
In line with the template version 4.2, PP shall provide project boundary with coordinates with KML file.				
Project participant response				Date: 15/06/2023
The KML file is provided along with this response.				
Documentation provided by project participant				
<i>KML files</i>				
VVB assessment				Date: 20/06/2023
The KML file for the Rwanda as project boundary has been submitted by PP. CAR # 14 is closed.				

CAR ID	15	Section no.	1.14	Date: 14/06/2023
Description of CAR				
In the absence of regulatory framework on the distribution of cookstoves, PP shall demonstrate the compliance with the requirement of para 3.18.18 and 3.18.19 of VCS standard version 4.4.				
Project participant response				Date: 15/06/2023

The PP has well established plan for ongoing communication with local stakeholders is elaborated in detail in JPD/MR in stakeholder section, which is in compliance with para 3.18.18 of VCS Standard Version-4.4. There is no risk to end users associated with improved cookstove usage and its being provided free of cost, hence no financial risk as well. The project has overall positive impact on end users, society and environment. The PP complies the host country regulations on employee safety, wages etc.

The PP also arranges the VVB visits during registration and verification process for the project activity.

In line with para 3.18.19, the project proponent has well established grievance redressal procedure to address disputes with local stakeholders that may arise during project planning and implementation. There were no negative feedback or dispute arises till now, the feedback received related to any defect in improved cookstoves being resolved by team by repairing the ICS. The details on any feedback concern is being recorded and shared to VVB during the process.

Documentation provided by project participant

JPD/MR Version-5

VVB assessment

Date: 20/06/2023

VVB noted that PP has an employed plan for ongoing communication with local stakeholders, as detailed in the JPD/MR in the stakeholder section, which aligns with para 3.18.18 of the standard. VVB also recognized that there is no perceived risk to end users associated with improved cookstove usage since it is provided free of cost, eliminating any financial risk.

Regarding para 3.18.19, VVB assessed that the project proponent has a well-established grievance redressal procedure in place to address any potential disputes with local stakeholders during project planning and implementation. Any feedback or concerns received regarding the improved cookstoves have been promptly resolved by the project team through repair, and detailed records of these instances are being shared with VVB throughout the process.

Overall PP ground team is responsible for comprehensive response, demonstrating compliance with the relevant requirement. Of O&M.

CAR # 15 is closed.

CAR ID	16	Section no.	1.17	Date: 14/06/2023
Description of CAR				
In line with the template version 4.2, PP shall provide Sustainable Development Contributions table.				
Project participant response				Date: 15/06/2023
The sustainable development contribution incorporated in revised JPD/MR.				
Documentation provided by project participant				

JPD/MR Version-5	
VVB assessment	Date: 20/06/2023
The sustainable development contribution table has been updated by PP which is consistent with the latest template version 4.2. CAR # 16 closed.	

CAR ID	17	Section no.	1.17	Date: 14/06/2023
Description of CAR				
PP shall share supporting documents for statement "The VCS GP is supporting the national target of reducing the biomass consumption in Rwanda from 79.9% in 2020 to 42% in 2024"				
Project participant response				Date: 15/06/2023
The referenced source is attached along with this response.				
Documentation provided by project participant				
VVB assessment				Date: 20/06/2023
The PP has referenced the UNDP report link, the VVB has assessed the same and found to be in line with the statement. CAR # 17 is closed.				

CAR ID	18	Section no.	2.1	Date: 14/06/2023
Description of CAR				
PP shall submit/share Ministerial Order No. 004/2008 in English language.				
Project participant response				Date: 15/06/2023
The English version of ministerial order No.004/2008 is attached along with this response.				
Documentation provided by project participant				
Ministerial Order No. 004/2008				
VVB assessment				Date: 20/06/2023

PP submitted the Ministerial Order establishing the list of works, activities and projects that have to undertake an environment impact assessment and VVB reviewed and analyzed the same and found it consistent with the statement. CAR # 18 is closed.

CAR ID	19	Section no.	2.2	Date: 14/06/2023
Description of CAR				
PP shall share/submit copy of the collaboration Agreement is signed between the District and DelAgua.				
Project participant response				Date: 15/06/2023
The MoU signed with district authorities is shared along with this response.				
Documentation provided by project participant				
<i>MoU</i>				
VVB assessment				Date: 20/06/2023
PP submitted the agreement and VVB reviewed and analyzed the same and found it consistent with the statement. CAR #19 is closed.				

CAR ID	20	Section no.	2.2	Date: 14/06/2023
Description of CAR				
PP shall share/submit the minutes of third JADF meeting (along with the list of attendees) for Nyagatare district.				
Project participant response				Date: 15/06/2023
The JADF meeting details provided along with this response.				
Documentation provided by project participant				
<i>JADF meeting details</i>				
VVB assessment				Date: 20/06/2023
The details of the meeting shared with the VVB. CAR # 20 is closed.				

CAR ID	21	Section no.	3.2	Date: 14/06/2023
Description of CAR				
PP shall update the table 5 as per fulfilment of VMR0006, ver. 1.1 requirement. And,				

Update Tool 30 - Calculation of the fraction of non-renewable biomass	
Project participant response	Date: 15/06/2023
The fNRB is now sourced from third party fNRB report prepared for host country Rwanda in line with TOOL30 version-4.	
Documentation provided by project participant	
<i>fNRB report</i> <i>fNRB work sheet</i> <i>JPD/MR Version-5</i>	
VVB assessment	Date: 20/06/2023
PP has submitted the report titled Calculation of Fraction of non-renewable biomass (fNRB) for . VVB has assessed that quantification is based on CDM tool 30 (EB 115 Annex 22, version 4.0 2022). The study has been conducted by an independent third party C4 Ecosolutions (Pty) Ltd. The fNRB value for Rwanda quantified as 0.91 deemed appropriate. CAR #21 is closed.	

CAR ID	22	Section no.	3.2	Date: 14/06/2023
Description of CAR				
PP share share/submit CREEC certificate.				
Project participant response				Date: 15/06/2023
The CREEC lab report provided along with this response.				
Documentation provided by project participant				
<i>CREEC Lab report</i>				
VVB assessment				Date: 20/06/2023
The CREEC lab report submitted by the PP assessed for the efficiency of cookstoves and found to be inline with the values mentioned in the JPD/MR. CAR # 22 is closed.				

CAR ID	23	Section no.	APPENDIX III	Date: 14/06/2023
Description of CAR				

PP shall share the evidence for discontinuation is the Voluntary Exclusion of CPAs from CDM PoA 9626.	
Project participant response	Date: 15/06/2023
The project activity is already registered with VCS and the details validated by VVB. The same can be checked with validation report available on VERRA site.	
Documentation provided by project participant	
<i>JPD/MR Version-5</i>	
VVB assessment	Date: 20/06/2023
VVB assessed that the project is already registered with the VCS and is applying for RCP, therefore, the CAR is not applicable to the project.	
CAR #23 is closed.	

CAR ID	24	Section no.	6.2	Date: 24/06/2023
Description of CAR				
Under section 6.2, PP to add the monitoring parameter for skirt usage rate as the parameter is affecting efficiency of stove.				
Project participant response				Date: 24/06/2023
The PP does monitor Pot Skirt usage rate, now the same has been added as monitoring parameter.				
Documentation provided by project participant				
<i>JPD/MR Version-6</i>				
VVB assessment				Date: 26/06/2023
PP has now considered the skirt usage rate under section 6.2 as it is the measure parameter affecting the efficiency of stove and deemed to be appropriate..				
CAR is closed				

CAR ID	25	Section no.		Date: 24/06/2023
Description of CAR				
PP is to submit monitoring survey results for this monitoring period along with a precision & sample calculation sheet. Furthermore, PP to mention all net GHG emission reduction and removals calculations for this monitoring period.				
Project participant response				Date: 24/06/2023

The monitoring survey result work sheet along with precision and sample calculation sheet provided along with this response. The ER calculation summary is provided in revised JPD/MR, where in lower bound value applied for pot skirt usage and baseline stove usage adjustment factor.	
Documentation provided by project participant	
Monitoring survey	
JPD/MR Version-06	
VVB assessment	Date: 26/06/2023
PP has provided a monitoring survey report and updated Joint PD & MR which was further assessed and now all the ER calculation summary is provided in revised JPD/MR, however the monitoring survey data provided is deemed to be appropriate.	
CAR is closed	

CAR ID	26	Section no.	7.1	Date: 24/06/2023
Description of CAR				
- Under section 7.1, the Skirt usage rate is missing. - Under section 7.1, Values mentioned for $\eta_{new,i,j}$ are inconsistent as in addition PP to mention the values calculated using the Skirt usage rate for more clarity.				
Project participant response				Date: 24/06/2023
- Skirt usage rate incorporated in section 7.1 - The efficiency mentioned is not inconsistent, the final values after applying skirt usage rate is incorporated in revised JPD/MR.				
Documentation provided by project participant				
JOD/MR version-6				
VVB assessment				Date: 26/06/2023
- PP has now added a skirt usage rate under section 7.1 which is deemed to be appropriate. - PP has now mentioned the values considering usage rate which made the values consistent.				
CAR is closed				

CAR ID	27	Section no.	7.5	Date: 24/06/2023
Description of CAR				
Provide Ex-ante calculation for 2023 how value calculated for 59 days. Same needs to be show under section 6.3.				
Project participant response				Date: 24/06/2023

Please refer ex-ante calculation details from revised ER sheet, as only DURA stove was operational during current monitoring period, the values considered for comparison for 59days operation of Dura stove operations considering vintage.

Documentation provided by project participant***ER Sheet Version-06*****VVB assessment****Date: 26/06/2023**

PP has now provided a representation of 59 Days ER estimation in ER sheet which was further checked and found to be appropriate Hence

CAR is closed

APPENDIX 5: VCS GP 2749 TIMELINE

The project start date is the first date that improved cookstoves first began generating GHG reductions. This project is applying a new VCS methodology, and therefore the project start date is set according to section 3.7.1 of the VCS Standard ver. 4.3.

The ICS under the GP were distributed in 2014 (PAI – 1) & 2016 (PAI – 2).

The important dates related to the project timeline are provided below.

- i) 07/09/2014 – Distribution of first batch of PAI-1 (Group 1) ICS took place
- ii) 15/09/2014 – The Start Date of 15/09/2014 has been accepted by CDM for the PoA 9626
- iii) 15/01/2016 – Distribution of first batch of PAI-2 (Group 2) ICS took place
- iv) 31/12/2018 – Last date of issuance of credits for ICS units distributed under the CDM PoA
- v) 01/01/2019 – The rights for the GHG emission reduction units generated by the ICS distributed under the CDM PoA 9626 CPAs (01 to 16) are sold to a different entity DHRV Limited, that does not have any communication rights or relations with the CDM PoA
- vi) 01/01/2019 – The VCS Grouped Project 2749 starts crediting, with the first date of operation of ICS under DHRV Limited
- vii) 24/11/2021 – The VCS Grouped Project Joint PD & MR document was uploaded on VCS web for publication by PP DHRV Limited
- viii) 17/03/2022 – The VCS Grouped Project published on registry for public comment for a period of 30 days
- ix) 21/04/2022 – VCS informed PP that the public comment period for VCS Grouped Project 2749 is over and no comments were received during this period