



Rwandan Improved Cookstove Project

DOCUMENT PREPARED BY

Carbon Check (India) Private Ltd.



Project Title	Rwandan Improved Grouped Cookstove project
Version	02
Report ID	CC IPL1059/VCS/VAL/ICR/20211127

Report Title	Rwandan Improved Grouped Cookstove project in Rwanda.
Client	LIKANO Project Development GmbH
Date of Issue	22-June-2023
Prepared By	Carbon Check (India) Private Ltd.
Contact	Carbon Check (India) Private Ltd. Registered office:

Contact	Carbon Check (India) Private Ltd. Corporate office: Unit No. 1701, Logix City Centre Office Tower, Plot No. BW- 58, Sector 32, Noida, Uttar Pradesh – 201 301 India www.carboncheck.co.in projects@carboncheck.co.in info@carboncheck.co.in
Approved by	Vikash Kumar Singh, Compliance Officer
Work carried out by	Harish Sharma (Team Leader, Technical Expert) Angelique Karigirwa (Local Expert) Shalini Yadav (Trainee Assessor) Indumathi.C(Technical Reviewer)

Summary:

- **A brief description of the validation and the project**

Validation: LIKANO project development GmbH, as the project proponent, has commissioned Carbon Check (India) Private Ltd., to carry out the validation of the project “Rwandan Improved Grouped Cookstove project in Rwanda”, with regards to the relevant requirements of VCS Standard Version 4.4 /B01/.

Project: The proposed project is a grouped project which employs VCS methodology; VMR0006 version 1.1 /B07/. The project involves distribution of energy-efficient improved cookstoves (ICS) in Rwanda. The project results in reducing the amount of non-renewable biomass used for cooking. Through reduction in non-renewable biomass consumption, the programme will decrease greenhouse gas emissions.

The estimated annual average emission reduction saving for this Project is 1,306,180 tCO₂e and total GHG emission reductions and removals the fixed crediting period of 10 years are 1,306,1800 tCO₂e.

- **The purpose and scope of validation**

Purpose: The purpose of a validation is to have a thorough and independent assessment of the proposed grouped project against the applicable VCS requirements, in particular, the project's baseline, monitoring plan and the project's compliance with relevant VCS and hostParty 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 of the validation of the grouped project.

Scope: The validation scope is defined as an independent and objective review of the Project Description (PD). The PD is reviewed against the relevant criteria and guidance documents provided by VCS which included the following: VCS Program Guide, version 4.3 /B02/, VCS Standard, version 4.4 /B01/, Program Definitions, version 4.3 /B05/, Registration & Issuance Process, version 4.3 /B04/ and in line with the VCS Validation and Verification Manual, version 3.2 /B03/ applicable at the time in order to confirm that the project meets the applicability conditions of the selected baseline and monitoring methodology, VMR0006, version 1.1 /B07/ and also assess the claims and assumptions made in the PD without limitation on the information provided by the project proponents.

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

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 PD and information from sources with all necessary means without limitations to the information provided by the project proponent;
 - II. On-site visit and follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel having knowledge of the project development via telephone, email, or 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 validation report and opinion.
- **The number of findings raised during validation.**

During the course of validation, a total of 15 findings were raised, which include:15
Corrective Action Requests (CARs).
00 Clarification Requests (CLs).
00 Forward Action requests (FARs).

All the above findings are successfully resolved by the PP.
 - **Any uncertainties associated with the validation.**

The PD /01/ emissions reduction calculations /02/ along with the supporting documents provided are considered to be in line with the VCS requirements/B01/. The validation team has detected no further uncertainties or quality restriction.
 - **Summary of the validation conclusion**

Carbon Check (India) Private Ltd. hereby confirms that the project is fulfilling the criteria specified by VCS PD template version 4.2 /B06/, VCS Standard version 4.4 /B01/, applied methodology VMR0006, version 1.1 /B07/ and hence be successfully validated under VCS. Carbon Check confirms a positive validation opinion confirming the project complies with the applicable VCS requirements, thus recommending the project for registration.

CONTENTS

1	INTRODUCTION.....	7
1.1	Objectives	7
1.2	Scope and criteria	7
1.3	Reasonableness of assumptions.....	8
1.4	Summary description of the project	8
2	VALIDATION PROCESS	8
2.1	Method and criteria	9
2.2	Document review	9
2.3	Interviews	10
2.4	Site visits.....	13
2.5	Resolution of findings	14
3	VALIDATION FINDINGS.....	14
3.1	Project details.....	14
3.2	Safeguards	24
3.3	Application of methodology.....	25
3.4	Non-permanence risk analysis.....	43
4	VALIDATION OPINION.....	43
	APPENDIX 1.1: REFERENCE DOCUMENTS	45
	APPENDIX 1.2: BACKGROUND DOCUMENTS.....	47
	APPENDIX 2: ABBREVIATIONS.....	48
	APPENDIX 3: CERTIFICATES OF COMPETENCE.....	50
	APPENDIX 4: FINDINGS LOG.....	53

1 INTRODUCTION

Likano Project Development GmbH has commissioned the VVB, Carbon Check (India) Private Ltd. to perform a validation of the VCS grouped project “Rwandan Improved Cookstove Project in Rwanda. “This report summarizes the findings of the validation of the project, performed on the basis of the VCS Program Guide, version 4.3./B02/, VCS Standard, version 4.4 /B01/, VCS Program Definitions, version 4.3 /B05/, Registration & Issuance Process, version 4.3 /B04/ and VCS Validation and Verification Manual, version 3.2 /B03/. This report contains the findings and resolutions from the validation of the grouped project.

1.1 Objective

The purpose of a validation is to have a thorough and independent assessment of the proposed grouped 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, 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, VCU's.

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the Project Description (PD), project design, the project's baseline study and monitoring plan and other relevant documents. The PD is reviewed against the relevant criteria and decisions by the VCSA, including the approved baseline and monitoring methodology. Carbon Check has employed a risk-based approach in the validation, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The validation is not meant to provide any consulting towards the project proponents. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The validation is carried out on the basis of the following requirements, applicable for this grouped project:

- VCS Program Guide (v4.3) /B02/
- VCS Standard (v4.4) /B01/
- Program Definitions (v4.3) /B05/

- Registration & Issuance Process (v4.3) /B04/
- VCS Validation and Verification Manual (v 3.2) /B03/
- VCS Methodology: VMR0006.: Methodology for Installation of High Efficiency Firewood Cookstoves” (Version 1.1). /B07/
- Other relevant rules, including the host country legislation.

1.3 Reasonableness of Assumptions

Reasonable level of assurance

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 one percent, as required by section 4.1.8 of the VCS Standard v.4.4 /B01/.

1.4 Summary Description of the Project

The proposed project is a grouped project which employs the VCS methodology; VMR0006 version 1.1 /B07/. The grouped project involves distribution of energy efficient improved cook stoves (ICS) in Rwanda. It is planned to distribute a total of approximately 400,000 Canarumwe stoves to households, which previously had no access to ICS. The ICS will replace three-stone fire, which is the predominant stove in the project area. These improved cookstoves will reduce the amount of non-renewable biomass used for cooking. The start date/14/ for the grouped project is 21-june-2022 which will be the date of distribution of first ICS under the first project activity for the grouped project. The grouped project adopts 10 years fixed crediting period.

The project proponent for the grouped project is Likano project Development GmbH and the other entity involved in the project is Rural Environment and Development Organization (REDO) , Rwanda peace and progress (RPP) (Project Implementer)/15/

The estimated GHG emission reductions over the crediting period, expected from the grouped project are 13,061,800 tCO_{2e} and an average of 1,306,180 tCO_{2e} per year. and the annual average GHG emission reduction for each project activity instance (i.e., ICS) is 2.61 tCO_{2e}

2 VALIDATION PROCESS

2.1 Method and Criteria

LIKANO has commissioned Carbon Check (India) Private Ltd., to carry out the validation of the grouped project “Rwandan Improved Cookstove Project – Rwanda”, with regards to the relevant requirements of VCS Standard, version 4.4 /B01/.

The validation includes a thorough and independent assessment of the proposed grouped 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. The validation 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 also assess the claims and assumptions made in the PD without limitation on the information provided by the project proponents. The overall validation was conducted using Carbon Check's internal procedures.

The validation schedule, including key milestones is stated below:

Milestone description	Time
Listing of the project	22 nd September 2022
Date of contract signing with the VVB	03 rd January 2022
Submission of requisite documents to theVVB	22 nd December 2022
Desk review	20 th April 2023- 20 th May 2023
On-site Audit	04 th April 2023
Date of Issue of Draft Validation Report	12 th June2023
Date of Issue of Final Validation Report	22 nd June2023

2.2 Document Review

The VCS project description, emission reduction calculation spread sheet and supporting documents related to the project design and baseline were reviewed, cross-checked, and compared with identified and stated as per VCS Standard, version 4.4 /B01/ requirements. The desk review included:

- A review of the data and information presented to verify completeness and consistency in accordance with VCS requirements./B01/

- A review of the project description and monitoring methodology, paying particular attention to the applicability conditions of the methodology and baseline and additionality related requirements.
- A review of the monitoring plan and the project’s compliance with relevant VCS criteria.

Furthermore, the validation team used additional documentation by third parties like host-party legislation, technical reports referring to the project design or to the basic conditions and technical data.

2.3 Interviews

Interviews with the PP representatives and household visits (where ICS will be distributed) were undertaken on 04-April-2023 by on-site visit to confirm the information presented in the PD by the PP, information as outlined in the table below and to resolve issues identified in the document review.

The key personnel interviewed, and the main topics of the interviews are summarized in the table below:

	Date	Name	Organisation	Topic
/a/	04 th April 2023	Manfred Stockmayer	Likano project development GmbH	<ul style="list-style-type: none"> • Project Design • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Compliance with relevant laws
/b/	04 th April 2023	Clarisse Nkiryumwami’	Likano project development GmbH	<ul style="list-style-type: none"> • Project Design • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality

				<ul style="list-style-type: none"> • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Compliance with relevant laws
/c/	04 th April 2023	Niyonzima Belise	REDO (implementation Partner /NGO)	<ul style="list-style-type: none"> • Project Design • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Compliance with relevant laws
/d/	04 th April 2023	Gashuba Damasin	REDO (implementation Partner /NGO)	<ul style="list-style-type: none"> • Project Design • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Compliance with relevant laws
/e/	04 th April 2023	Mukandayisingiza Itiphonie	REDO (implementation Partner /NGO)	<ul style="list-style-type: none"> • Project Design • Project start date and Project Location • Baseline Scenario

				<ul style="list-style-type: none"> • Baseline Identification and Additionality • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Compliance with relevant laws
/f/	04 th April 2023	Mayor Nothalie (East)	Local Stakeholders	<ul style="list-style-type: none"> • Local Stakeholder Consultation • Social and Environmental Impacts • Local Stakeholders Grievance mechanism/08/ • Trainings and jobs provided to stakeholders
/g/	04 th April 2023	Singuanabo Jean	Local Stakeholders	<ul style="list-style-type: none"> • Local Stakeholder Consultation • Social and Environmental Impacts • Local Stakeholders Grievance /08/mechanism • Trainings and jobs provided to stakeholders
/h/	04 th April 2023	Niyigena Alexi	Local Stakeholders	<ul style="list-style-type: none"> • Local Stakeholder Consultation • Social and Environmental Impacts • Local Stakeholders Grievance mechanism/08/ • Trainings and jobs provided to stakeholders
/i/	04 th April 2023	Mpamban Nyiridandi	Local Stakeholders	<ul style="list-style-type: none"> • Local Stakeholder Consultation/08/

				<ul style="list-style-type: none"> • Social and Environmental Impacts • Local Stakeholders Grievance mechanism/08/ • Trainings and jobs provided to stakeholders/08/
--	--	--	--	---

2.4 Site Visits

Site Locations: Rwanda (Africa)

Carbon Check has conducted an on-site inspection on 04-April-2023 to confirm the implementation and operation status of the project activity. 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 project activity through onsite interviews/18/ 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 PD 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.

The assessment team has verified sufficient appropriate audit evidence, to reduce audit risk to an acceptably low level as requisite to achieve reasonable level of assurance.

2.5 Resolution of Findings

This section summarizes the findings from the validation of the grouped project. In this section the findings from the document review, site visit, assessments and interviews are provided.

Material discrepancies identified in the course of the validation are addressed either as CARs, CLs or FARs.

Corrective action requests (CAR) are issued, where:

- i. mistakes have been made with a direct influence on project results requiring adjustments of the VERs/VCUs monitoring report or PD.
- ii. applicable methodological specific requirements have not been met.

A **Clarification request (CL)** may be used where additional information is needed to fully clarify an issue or where the information is not transparent enough to establish whether a requirement is met.

A total of 15 CARs and 00 CLs were raised and closed successfully for the validation of the grouped project. Please refer to Appendix 4 below for the details of the CARs/CLs and their closure.

2.5.1 Forward Action Requests

No Forward action requests have been raised during the course of validation.

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

- i. the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
- ii. an adjustment of the MP is recommended.

In the context of FARs, risks have been identified, which may endanger the delivery of high-quality emissions reductions in the future, i.e. by deviations from standard procedures as defined by the MP. Therefore, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions.

3 VALIDATION FINDINGS

3.1 Project Details

The project “Rwandan Improved Cookstove Project”, is a grouped project which employs baseline and monitoring methodology; VMR0006 version 1.1 /B07/. The grouped project involves distribution of fuel-efficient improved cook stoves (ICS) in Rwanda. This grouped project includes ICS distribution for 5 years, around 400,000 Canarumwe stoves were distributed., which previously had no access to ICS. The ICS will replace three-stone fire, which is the predominant stove in the

project area.

The project results in reducing the amount of non-renewable biomass used for cooking. Through reduction in non-renewable biomass consumption, the programme will decrease greenhouse gas emissions. Section 1.1. of the VCS PD contains a clear summary description of the project. The completeness and accuracy of the project description was validated through on-site visit interviews/18/. The ICS distributed in the project will replace the baseline technology (three-stone fire). Based on the higher efficiency of ICS compared to the baseline technology and by reducing the consumption of non-renewable biomass, GHG emissions will be reduced.

The project proponent for the grouped project is Likano Project Development GmbH and the other entity involved in the project is Rural Environment and Development Organization (REDO) and Rwanda of Peace and Progress (RPP) (Project Implementer)./15/

PP has demonstrated the ownership of the project activity and documents showing proof of title and ownership of the emission reductions. /15/

The start date was evidenced during the document review by reviewing the document provided by PP i.e. sales records /14/ for the grouped project is 21-June-2022 which will be the date of installation of first stove under the grouped project as well as the 1st project activity.

The start date/14/ of the fixed crediting period is 21-june-2022 and end date of 20-june-2032. PP has chosen a 10-years fixed crediting period.

According to section 3.10.1 of the VCS Standard (v 4.4) /B01/,

“Project size categorizations are as follows: 1) Projects: Less than or equal to 300,000 tonnes of CO₂e per year. 2) Large projects: Greater than 300,000 tonnes of CO₂e per year.” Therefore, the scale of the grouped project is “Large Project” as it is expected to generate more than 300,000 tonnes of CO₂e of GHG emission reductions. The estimated emission reductions over the crediting period is 13,061,800 tCO₂e with an average of 1,306,180 tCO₂e per year /02/.

The grouped project location and geographic boundaries are those of Rwanda which is specified in section 1.12 of the PD by stating the geodetic coordinates. The compliance with paragraph 3.6.8 of the VCS standard version 4.4 /B01/ will be checked at verification stage when the distribution of ICS under the grouped project will commence, which requires grouped projects to have one or more clearly defined geographic areas within which new project activities may be developed.

The VCS PD clearly indicates the project scope, which is scope 3: Energy demand, and more specifically demand-side energy efficiency project. The project is a grouped project, this is indicated in section 1.2. of the VCS PD/01/.

The proposed grouped project is an energy efficiency project and is located in a non-Annex I country. Therefore, the ER generated would not be part of an emission trading program, nor is it

located in a jurisdiction or sector with binding limits. The project proponent intends to claim carbon credits under the VCS programme only for the emission reductions achieved. The PP states in the VCS PD 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 validation, no binding targets have been set by Rwanda under the Kyoto protocol, as indicated in the UNFCCC website /B09/.

The project proponent has declared that the project is not in registration under any other GHG program. The validation team has checked the UNFCCC Clean development mechanism (CDM), Gold standard (GS), and Global carbon council (GCC) database of registered projects or projects under validation / submitted projects and was able to confirm that the listed projects are not the proposed project activity.

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

ICS not only reduces non-renewable biomass consumption, resulting in emission reductions but also contributes to sustainable development in Rwanda, which is demonstrated in section.1.17 of the PD.

Eligibility criteria of the grouped project activity

The eligibility criteria have been provided clearly in section 1.4 of the PD /01/ and then justification provided for inclusion of project activities for the VCS methodology.

Eligibility criterion	Description/Required condition	Means of Verification / Supporting evidence for inclusion	Assessment by the validation team
-----------------------	--------------------------------	---	-----------------------------------

<p>Applicability Conditions</p>	<p>The project activity shall meet applicability conditions or methodology (VMR 0006 version 1.1) as defined in section 3.2.</p>	<p>PA shall demonstrate compliance with VMR 0006 version 1.1 in the PD/01/, as applicable.</p> <p>MoV: PD/01/ section 3.2 justifying the applicability criteria of applied methodology.</p>	<p>The validation team based on document review and on-site visit interviews confirms that the project activities to be included in the grouped project will meet the applicability conditions of VMR0006 (version 1.1) which is satisfactorily demonstrated in section 3.2 of the PD.</p>
<p>Geographical Area</p>	<p>The project activity shall be located within the physical / geographical boundary of the grouped project i.e., Rwanda</p>	<p>All ICS implemented / distributed in a PA shall be within the Geographic boundary of Rwanda.</p> <p>MoV: ICS installation database showing ICS location to be in Rwanda .</p>	<p>The start date /14/ of the grouped project is 21-june-2022 which was confirmed during document review PD/01/ and on-site visit interviews. The location will be confirmed by checking the ICS installation database and location coordinates during the inclusion of each PA.</p>

<p>Baseline Scenerio</p>	<p>The project activity shall have the baseline as usage of non-renewable fuel (wood/charcoal) or fossil fuel (Coal/kerosene) to meet equivalent thermal energy needs.</p>	<p>PA shall capture the baseline fuel of project ICS beneficiaries to show that the baseline fuel is either use of non-renewable biomass or fossil fuel.</p> <p>MoV:</p> <p>ICS installation database / user registration records showing baseline fuel for project ICS user.</p>	<p>The Validation team through document review and on-site visit interviews analyze that the baseline is demonstrated in the section 3.4 of the PD. PPwill install ICS within the project boundary of Rwanda and will replace the baseline cookstoves. This has also been mentioned in the PD.</p>
<p>TechnologyType</p>	<p>The project activity shall involve distribution of ICS devices with more than 25% rated efficiency</p>	<p>Only ICS having more than 25% rated thermal efficiency shall be allowed to register in the project activity.</p> <p>MoV: Manufacturer specifications/ 1Manufacturer Certificate / laboratory testing WBT certificates/17/ for ICS</p>	<p>The Validation team through document review and on-site visit interviews analyze that PP will be using ICSs having efficiency more than 25% which will replace the baseline traditional cookstoves, under this grouped project which has also been mentioned in the PD.</p>

<p>Additionality</p>	<p>The project activity shall demonstrate additionality as per the following:</p> <p>Step 1: Regulatory Surplus and either of Step 2: Positive list</p>	<p>The PA shall be demonstrated as additional via the following:</p> <ol style="list-style-type: none"> 1. Demonstrate that the PA 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. 2. PA installs or distributes stoves at zero cost to the end-user and/or has no other source of revenue other than the sale of GHG credits as confirmed by the PP. 	<p>The validation team confirms that the PAs to be included in the grouped project will demonstrate additionality via Regulatory surplus and positive list which is indicated in section 3.5 of the PD.</p>
----------------------	---	---	---

Start Date/14/	The project activity shall start on or after the start date /14/ of the Grouped Project.	The start date of grouped project is considered as 21/06/2022 which is also the start date/14/ of first PA (the date of distribution of first ICS). The start date/14/ of all other PAs to be included in the grouped project shall be after this date. MoV: Distribution record / user agreement showing the date of distribution for the first ICS under the instance.	To confirm the start date/14/ of the grouped project, i.e., 21-june-2022, Distribution record / user agreement showing the date of distribution for the first ICS under the activity shall be checked.

Crediting Period	The project activity shall have a fixed 10 years crediting period.	Refer PA PD / Joint PD and MR section 1.9	The validation team confirms that the crediting period Of the grouped project is indicated in section 1.9 of the PD.
Double Counting	The project activity shall confirm that: <ol style="list-style-type: none"> 1. It is not registered as a project activity in any other mechanism. 2. The project activity is not leaving any other program to join the Grouped Project. 	MoV: Declaration by the Project Owner / Project Developer	The validation team by the review of declaration /07/ submitted by the PP and on-site visit interviews confirms that this eligibility criterion has been met for the group project.

<p>Capacity Limits: -</p> <p>Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows:</p> <p>Each project activity instance that exceeds one percent of the capacity limit shall be identified.</p> <p>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.</p> <p>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</p>	<p>No project activity instance shall exceed the applicable limit, which is 180 GWhth/y.</p> <p>The expected annual energy saving for each project activity instance is approximately 0.02 GWhth/y or 0.01% of the limit.</p> <p>As the annual energy saving is below 1% of the limit, no project activity instance is identified and divided into clusters.</p> <p>Calculation sheet demonstrating adherence to this criterion to be submitted to VVB.</p>	<p>Calculation sheet demonstrating adherence to this criterion to be submitted to VVB.</p>	<p>PP has considered each ICS as a project activity instance which is deemed acceptable as per the VCS Program Definitions and VCS Standard /B05/.</p> <p>Since the annual energy saving per ICS is approximately 0.02GWhth/y the capacity of project activity instance is well below the 1% of the threshold limit. Therefore, it is not required to divide any project activity instance into clusters.</p> <p>This criterion is deemed appropriate, and it can be verified from the energy saving per ICS included in the grouped project.</p>
--	---	--	---

<p>the clusters to exceed the capacity limit.</p>			
<p>Target Population:- End user for each project activity instance shall be households, community kitchens (religious, educational institutions etc.) or small /medium enterprises cooking with non-renewable biomass on inefficient wood.</p> <p>Each ICS will be assigned a unique serial number with name of ICS user, address, GPS of household, stove model, distribution date, etc</p>	<p>End user registration certificate and stove installation database.</p>	<p>End user registration certificate and stove installation database.</p>	<p>Based on the review of the PD /01/, interviews, end users' registration certificate/11/ from the PP validation team is able to confirm that the target group for the distribution of ICS will be households with non- renewable biomass on inefficient wood.</p> <p>Furthermore, project activity will disseminate ICSs over the entire Rwanda.</p> <p>Based on the above assessment, validation team concludes that this eligibility criteria has been met for the new project activity instances under this group project.</p>

Project Ownership	The ownership of the PA shall be clearly demonstrated by virtue of the following: <ol style="list-style-type: none"> 1. End user agreements transferring the ownership of credits from the use of project ICS to the CME/PP. <ol style="list-style-type: none"> a. Or 2. Disclaimer on the product packaging/warranty card assigning the rights of ownership of credits to the PP directly 	MoV: End user agreement for ICS under the PA Or Product packaging/warranty card template	The validation team has reviewed the end user agreement template which states that the Likano project development GmbH and Rural Environment and Development organization (REDO), Rwanda of Peace and Progress (RPP) owns the right to carbon credits generated from the use of project ICS/11/. Therefore, this eligibility criterion has been met for the group project.
-------------------	--	--	--

3.2 Safeguards

3.2.1 No Net Harm

As identified by PP, the grouped project has no negative impact which has been demonstrated in section 2.1 of the PD.

The validation team confirms that the project does not pose any potential negative environmental and socio-economic impacts. A local stakeholders meeting/08/ was conducted for the project and there was no negative feedback.

3.2.2 Local Stakeholder Consultation

Stakeholders had been directly asked to comment on the project through a physical meeting held in each district in which this project is being developed. In Ngoma district a LSC was held on 3 June

2022, in Rwamagana on 10 June 2022, in Burera on 13 June 2022, in Nyagatare on 17 June 2022, in Gatsibo on 8 July 2022, and in Karongi on 7 September 2022. The stakeholders were invited through various means to provide their feedback: Invitations were sent by email or letter. Personal invitations were prepared for stove beneficiaries and local representatives, often delivered by hand depending on the situation were sent to various stakeholders (Local Communities, Government officials, NGOs, local association leaders etc.) along with the non-technical summary of the project and stakeholder feedback form. The Stakeholders were allowed to submit their feedback within 30 days of the date of receipt of the email via the feedback form provided. Credible evidence for the invitations has been provided by the PP and assessed by the validation team which was found to be true. All comments are positive in nature. No adverse comments were received, and this is addressed in the PD. This was also confirmed by the validation team during the on-site visit interview.

The validation team confirms the procedure and method for engagement, method for documenting the outcomes of local stakeholders' consultation and account of all inputs received. The validation team confirms that the project proponent has taken due account of all input (no negative comments were received for the project). Hence the validation team

deemed the local stakeholders' meeting/08/ procedure including the inputs received as appropriate.

3.2.3 Environmental Impact

No negative environmental impacts have been identified from the project and environmental impact assessment (EIA) is not required for the project.

3.2.4 Public Comments

This project was open for public comment from 20/02/2023 to 22/03/2023 and there were no comments received.

3.2.5 AFOLU-Specific Safeguards

Not Applicable.

3.3 Application of Methodology

3.3.1 Title and Reference

The Grouped Project provides for projects one of the VCS approved methodology:

- VMR0006. "Methodology for Installation of High Efficiency Firewood Cookstoves, (Version 1.1)" /B07/

The associated tools and guideline documents in the Grouped Project include:

- CDM TOOL30 “Calculation of the fraction of non-renewable biomass” version 04.0 /B10/
- 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) /B8/.

3.3.2 Applicability

The project applies VCS methodology; VMR0006, version 1.1/B07/. Applicability criteria for the baseline line methodology are assessed by the validation team by means of document review and interview. The Validation team confirms that the project activity meets the criteria of the applied methodology.

No.	Relevant applicability condition	Compliance with grouped project	Means of validation
1.	Project activities shall be implemented in domestic premises, or in community-based kitchens.	The proposed grouped project involves deployment of ICS in domestic households and in Rwanda.	The Validation team through document review and on-site visit interviews can confirm that the improved cook stoves will only be distributed in the domestic households thereby confirming the methodology applicability condition.
2.	The project stove shall have specified high-power thermal efficiency of at least 25% per The manufacturer’s Specifications/17/and shall exclusively use woody biomass and can be single pot or multi-pot;	CANARUMWE Stoves planned to be distributed under the grouped project are energy efficiency cookstove using woody biomass as fuel and have an efficiency more than 25%. The same has been developed as an	The validation team has reviewed the technical specifications of stoves to be distributed under grouped project activity /4/ which confirms that the ICS distributed to the end users with an 26.3% efficiency.

		<p>eligibility criterion (#4) for inclusion of project activities in the grouped project.</p>	<p>This is deemed appropriate to the Validation team.</p>
3.	<p>Both 'Projects' and 'Large Projects' can use this methodology</p>	<p>The proposed project has an estimated 13,061,800 ER which is a large-scale project as the annual emission reduction is more than 300,000 tonnes of CO₂e per year which is in line with the section 3.10.1 of VCS standard version 4.4.</p>	<p>The validation team has reviewed the calculation used to determine the estimated average annual GHG emission reduction for the proposed grouped project which is 13,061,800 ER ,more than 300,000 tCO₂e /2/. Therefore, the project is Large Project as per section 3.9.1 of the VCS standard (Version 4.4).</p>
4.	<p>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.</p>	<p>Non-renewable biomass is being used and is in high demand throughout Rwanda. Biomass, principally firewood, holds huge importance in Rwanda, accounting for at least 86% of energy</p>	<p>The validation team reviewed the Global FRA 2020 Report Rwanda/13-3/ and Global Forest Watch /09/(database by World Resources Institute) which demonstrates the use of non-renewable biomass since 1989 in Rwanda. This is deemed appropriate to the Validation team.</p>

		<p>consumption.¹ Wood fuel is in particularly high demand, especially in rural areas where 98% of households rely on wood as their main cooking fuel.</p> <p>Rwanda has lost approximately 64 per cent of forests in between 1960 and 2007 according to statistics from the Forest department.² Further, according to 'Global Forest Watch'/09/</p>	
--	--	---	--

¹ <https://www.rema.gov.rw/soe/chap6.php>

² Rwanda Ministry of Infrastructure (MININFRA), 2011:
http://mininfra.gov.rw/index.php?option=com_content&task=view&id=115&Itemid=143

<p>5.</p>	<p>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.</p>	<p>The grouped project does not envisage use of processed biomass. In the case, where processed biomass residues are used in the grouped project, the following will be ensured:</p> <ol style="list-style-type: none"> 1. It is renewable biomass 2. Its consumption will be monitored 3. If renewable biomass processing (e.g., shredding and compacting in the case of briquetting) occurs in project case, the energy consumption for manufacturing and transportation of renewable biomass fuel (briquettes) will be monitored to calculate project emissions. 	<p>The usage of biomass residues and the demonstration of the 3 criteria, under the grouped project will be checked at verification stage.</p>
-----------	--	--	--

<p>6.</p>	<p>The VCS PD 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).</p>	<p>The ICS installation database will have the following provisions to ensure complete avoidance of double counting:</p> <ol style="list-style-type: none"> 1. Unique serial number of ICS distributed; and 2. End users' details (End username, address, and/or telephone number (if available)) 	<p>The validation team by means of document review and onsite visit interviews confirms that the proposed method for distribution of project devices includes the method to avoid double counting of emission reductions such as unique identifications of product and end-user details (name, address etc.). PP has provided end user agreement /11/ template which has been reviewed by the validation team and found to be acceptable.</p> <p>This criterion will be checked at verification stage post distribution of project stoves.</p>
<p>7.</p>	<p>The VCS PD 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.</p>	<p>At the time of ICS distribution, each ICS beneficiary transfers the rights of credit ownership to PP/11/ via an agreement or disclaimed via clear statement on the product packing or warranty card thereby avoiding any subsequent double claim on ownership of credits by other entities.</p>	<p>The validation team by means of document review and on-site visit interviews confirms that the proposed procedures prevent double counting of emission reductions. This criterion will also be checked at the verification stage post distribution of project stoves.</p>

Applicability conditions of CDM TOOL 30 (version 4.0):

No.	Relevant applicability condition	Compliance with grouped project	Means of validation
1.	This tool may be used by: a) DNAs to submit region/country-specific default fNRB values/13-2, 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. /13-2/	This tool is used by the project participants to calculate a project specific value for fNRB under option (b) of applicability condition 1.	PP has used this tool to calculate project specific fNRB value. All the references and data sources used for calculation have been assessed by the validation team which was found to be acceptable. /13-2/
2.	For project or PoA specific fNRB values,/13-2/ project participants shall assess the area where biomass is sourced for end-users included in the project activity and justify the selection of the area in project design documents.	The area for the calculated value is selected within the geographical boundary of Grouped Project.	The geographical boundary of the grouped project is Rwanda ,and the selection of this area has been justified in section 1.12 of the PD.

3.3.3 Project Boundary

The Grouped Project boundary is defined as per VMR0006. "Methodology for Installation of High Efficiency Firewood Cookstoves, (Version 1.1)." /B07/

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

Source	Gas	Included?	Justification/Explanation	
Baseline	Combustion of baseline fuels (firewood)	CO ₂	Yes	Important source of emissions
		CH ₄	Yes	Important source of emissions
		N ₂ O	Yes	Gas included in the calculations. Emission factors for fuel in stationary combustion by the IPCC
		Other	-	-
Project	Combustion of project fuels (firewood)	CO ₂	Yes	Important source of emissions
		CH ₄	Yes	Important source of emissions
		N ₂ O	Yes	Gas included in the calculations. Emission factors for fuel in stationary combustion by the IPCC
		Other	-	-

The project boundary for the grouped project consists of the physical, geographical locations of the distributed ICS limited to within Rwanda . This includes the areas from which non-renewable biomass used by the project cooking system is sourced.

3.3.4 Baseline Scenario

The project activity applies VCS methodology VMR0006 version 1.1 /B02-a/. This is the most recent valid version available on the VERRA site at the time of validation. Since the project activity that apply the indicative simplified methodology VMR0006 version 1.1, the baseline scenario for this project activity is the one indicated by this methodology, i.e. “The baseline scenario is the continued use of non-renewable wood fuel (firewood/charcoal) or fossil fuel (coal/kerosene) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.”. The baseline described in the PD complies with the requirements of the methodology, as the energy baseline is the existing level of consumption of non-renewable biomass used by the cooking systems currently in use and which is used in the absence of the project activity.

Validation team based on review of the VCS PD/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 scenarios for the applied methodology were also confirmed through remote interviews with the end users of technologies and representatives of PP.

The validation team confirms that the baseline scenario opted by the project activity is in accordance with the requirements of the applied methodology/B02-a/ and is justified.

The validation team confirms that the baseline scenario opted by the project activity is in accordance with the requirements of the applied methodology /B07/ and is justified.

3.3.5 Additionality

The additionality of the grouped project has been demonstrated by the PP as per the methodology section 7 /B07/. The methodology uses an activity method for the demonstration of additionality. As per the methodology, the grouped project activity falls under the 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.

Assessment of all the assumptions including data available at the time of validation is based on document review and the parameters are either based on methodology defaults or manufacturer specifications or third party report (in case of fNRB). Furthermore, no baseline survey was conducted for the project as the parameters pertaining emission reduction quantification is based on equation 4 of the applied methodology, where ex-post survey shall be conducted to determine the baseline and project fuel consumption. Hence, the completeness and accuracy of the project description was validated through document review and stakeholder interview was performed during the on-site inspection.

Furthermore, the project meets all the applicability conditions of the applied methodology VMR0006, version 1.1 /B07/ and During the interview, VVB confirmed from the PP representatives and Implementation partner that they envisage free of cost distribution of cookstoves, this was further cross checked during on site interviews with local stakeholders (who are also Project beneficiaries) that they have received the cookstoves free of cost and furthermore PP has no other source of revenue other than the sale of GHG credits. VVB has checked the CTF form and feedback form provided during the local stakeholder meeting to verify additionality. The grouped project is not implemented as a part of any government scheme or supported by multilateral funds. Hence the project qualifies under positive list and deemed additional. The additionality has also been included in the eligibility criteria in the PD. Each project activity shall meet the requirements of eligibility criteria to be included in the grouped project.

Therefore, the validation team confirms that the grouped project is additional, and all the project activities that will be included in the grouped project will meet the eligibility criteria.

3.3.6 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 PD/01/ The emission reductions of the project instances of the grouped project would be calculated using the formulae mentioned in the applied methodology; VMR0006

(version 1.1)/B07/.

Validation team based on the review of the PD /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 PD/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 PD/01/ and ER spreadsheet/02/ and methodology VMR0006 (version 1.1)/ B07/.

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

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

$$ER_y = \sum_i \sum_j ER_{y,i,j}$$

Where:

i	=	<i>Indices for the situation where more than one type/model of improved cook stove is introduced to replace the baseline stove</i>
j	=	<i>Indices for the situation where there is more than one batch of improved cook stove of type i</i>
ER_y	=	<i>Emission reductions during year y in t CO₂e</i>
$ER_{y,i,j}$	=	<i>Emission reductions by improved cook stove of type i and batch j during year y in t CO₂e</i>

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

Where:

$B_{y,savings,i,j}$	=	<i>Quantity of woody biomass that is saved in tonnes per improved cook stove of type i and batch j during year y</i>
$f_{NRB,y}$	=	<i>Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})</i>
$NCV_{wood\ fuel}$	=	<i>Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)</i>
EF_{wf,CO_2}	=	<i>CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)</i>
$EF_{wf,non\ CO_2}$	=	<i>Non-CO₂ emission factor for the use of wood fuel in baselinescenario</i>

(IPCC default for wood fuel, 26.23 tCO₂/TJ)

$N_{y,i,j}$ = Number of improved cook stoves of type i and batch j operating during year y

0.95 = Discount factor to account for leakage

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

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

Where:

$B_{y=1,new,i,survey}$ = 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.

η_{old} = Efficiency of baseline cookstove

$\eta_{new,i,y}$ = Efficiency of the improved cook stove type i and batch j determined through water boiling test (WBT). efficiency may be determined using Equation 5.

$$\eta_{new,i,y} = \eta_p \times (DF_n)^{y-1} \times 0.94$$

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, a 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 grouped project would achieve a total emission reduction of 13,061,800 tCO₂e in the fixed 10- year crediting period and an average of 1,306,180tCO₂e per year as indicated in the final VCS PD /01/ and in the ER spread sheet /02/.

In conclusion, all values, including parameters fixed ex-ante, used to calculate emission reductions are considered reasonable and appropriate in the context of the proposed grouped project “Rwandan Improved Cookstove Project” and calculation approach is correct.

Parameters Determined ex-ante

The following parameters are determined ex-ante and mentioned in section 5.1 of the PD:

Parameter	Unit	Value	Assessment
η_p Efficiency of project stove at the start of project activity	Fraction	0.263 for project ICS (Test results of clean cooking database)	- Fixed ex-ante -This value is based on test result of clean cooking database /04/
f_{NRB} Fraction of woody biomass that can be established as non-renewable biomass/13-2/	Fraction	0.89	- 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/
$NCV_{wood\ fuel}$ Net calorific value of the non-renewable woody biomass	TJ/tonne	0.0156	- Fixed ex-ante - This is a methodology default value /B07/
EF_{wf,CO_2} CO ₂ Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass	tCO ₂ /TJ	112	- Fixed ex-ante - This is a methodology default value /B07/

$EF_{wf,non\ CO_2}$ CO ₂ Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass	tCO ₂ /TJ	26.23	- Fixed ex-ante - This is a methodology default value /B07/																
η_{old} Efficiency of baseline cookstove	fraction	0.1	- Fixed ex-ante - This is a methodology default value /B07/																
$\eta_{new,i,j}$ Efficiency of the device of each type i and batch j implemented as part of the project activity	Fraction	26.3% As per equation (5) mentioned in the PD, the applicable efficiency of two example ICS models to be used in Ex-post ER calculations is as follows: <table border="1" data-bbox="842 940 1141 1703"> <thead> <tr> <th data-bbox="846 947 987 1115">Age of Stove(year)</th> <th data-bbox="987 947 1138 1115">Thermal efficiency ($\eta_{new,y,i,j}$)</th> </tr> </thead> <tbody> <tr> <td data-bbox="846 1115 987 1199">1</td> <td data-bbox="987 1115 1138 1199">24.72%</td> </tr> <tr> <td data-bbox="846 1199 987 1283">2</td> <td data-bbox="987 1199 1138 1283">24.47%</td> </tr> <tr> <td data-bbox="846 1283 987 1367">3</td> <td data-bbox="987 1283 1138 1367">24.23%</td> </tr> <tr> <td data-bbox="846 1367 987 1451">4</td> <td data-bbox="987 1367 1138 1451">23.99%</td> </tr> <tr> <td data-bbox="846 1451 987 1535">5</td> <td data-bbox="987 1451 1138 1535">23.75%</td> </tr> <tr> <td data-bbox="846 1535 987 1619">6</td> <td data-bbox="987 1535 1138 1619">23.51%</td> </tr> <tr> <td data-bbox="846 1619 987 1703">7</td> <td data-bbox="987 1619 1138 1703">23.28%</td> </tr> </tbody> </table>	Age of Stove(year)	Thermal efficiency ($\eta_{new,y,i,j}$)	1	24.72%	2	24.47%	3	24.23%	4	23.99%	5	23.75%	6	23.51%	7	23.28%	- Fixed ex-ante - Calculated using equation (5) of the applied methodology. Theyear-wise efficiencyprovided for the ICSmodel, which is inaccordance with equation 5 of the applied methodology /B07/ and will be used for Ex-post ER calculations.
Age of Stove(year)	Thermal efficiency ($\eta_{new,y,i,j}$)																		
1	24.72%																		
2	24.47%																		
3	24.23%																		
4	23.99%																		
5	23.75%																		
6	23.51%																		
7	23.28%																		

FnRb assessment

PP has contracted an independent party “C4Ecosolutions” for a study and calculation of fNRB as

per CDM Methodological Tool: “Calculation of fraction of non- renewable biomass” (v04.0). Validation team confirms that it has checked fNRB calculation report/spread sheet /13-04/ prepared by C4Ecosolutions.

As per the applied methodological tool, In the case of ex ante calculation of fNRB, the parameter fNRB shall be estimated using the most recent historical year for which data is available. Review of fNRB report /13-04/ prepared by C4Ecolution revealed that all the data used for the calculation is latest available data at the time of validation.

Review of fNRB calculation report/spread sheet /13-04/ prepared by C4Ecosolutions reveals that the estimation of non-domestic fuel consumption was derived from the UN Statistics Division wood consumption and population statistics, in combination with the national average per capita woody biomass consumption. The non-domestic fuelwood consumption estimates provided by the UN Statistics Division have been conservatively applied, disregarding the additional deforestation likely occurring as a result of shifting agriculture and from informal or illegal harvesting. Other categories of non-domestic consumption reported by UN Statistics Division have been conservatively excluded due to apparent double accounting with domestic consumption. The total woody biomass consumption for Rwanda is as per the fNRB report /13-04/ prepared by C4Ecolution is estimated to be 26,885,650 t/yr, which is deemed appropriate to the VVB.

In Rwanda six ecological zone has been found i.e. tropical desert forest, tropical moist forest, tropical mountain system, Tropical rainforest, Tropical shrubland and water and the same was verified by referring the FAO data through web-research. VVB has noted that in the report /13-04/ geospatial data products for Rwanda were analyzed in R16-20 to estimate Rwanda renewable biomass. The woody cover from all areas defined as “forest” (>10%) cover “other wooded land” (5-10% cover) as well as “other land” (<5% cover), according to the FAO definitions for 2000 and 2018 was estimated using Hansen/UMD/Google/USGS/NASA spatial data, which is derived from Hansen et al.

As no woody cover was excluded from the analysis based on a threshold of minimum cover, disaggregation into the FAO forest categories would have been superfluous. The woody cover was disaggregated according to the FAO global ecological zones and the total woody cover extent was calculated for each ecological zone, within the protected areas and within areas that are either accessible or geographically remote. The woody cover is estimated as a percentage for the whole country within 30 x 30 m resolution grid cells. The woody cover extent for each cell is therefore calculated as the woody cover percentage multiplied its area (0.09 ha).

The default age-weighted mean annual increment (MAI) estimates of each ecological zone, as reported by the IPCC, was used for the study, checked and confirmed by the VVB. The proportion of forest stand ages above and below 20 years old were estimated for each ecological zone by extrapolating the observed forest gain extents between 2000 and 2012 to a 20-year period. Where primary forest growth rates are available, they were applied based on the primary forest extent data published by Turubanova et al. The resulting average MAI estimates for Rwanda are 1.65, 0.89,1.81,3.64, 0.89 and 0.88 t/ha/year for the tropical desert forest, tropical moist forest, tropical mountain system, Tropical rainforest, Tropical shrubland and area categorized as “water” respectively.

In line with para 13 of the Tool 30 version 04.0, “If the fNRB value is estimated at the national level, as a cross check, project proponent shall compare the value of estimated NRB with the

product of: i) total average above ground biomass tonnage of the area of forest areas deforested in recent past (tonnes/ha), and ii) most recent available observed annual rate of deforestation (ha/yr). If the estimated NRB value is more than 10% above the value calculated as per the product of biomass and deforestation rate, justification shall be provided for the higher value for NRB.”

CC IPL based on review of fNRB report prepared by C4 EcoSolutions (Pty) Ltd /13-04/ confirms that the above requirement of tool 30 has been followed and the justification has been provided, which is deemed acceptable to the validation team. The excerpt of fNRB report /13-04/ is as below:

“The resulting non-renewable biomass (NRB) value was compared with the top-down product of average above-ground biomass (200.4 t/ha)¹ and the average annual deforestation rate between 2010–2020 (525 ha/year). NRB, as calculated in this report according to the latest CDM Tool 30, is 25,207,666 t/year, which is significantly greater than the cross-check results based on deforestation (105,200 t/year). It is expected that the cross-check estimate of biomass loss from deforestation would grossly underestimate the actual extent of non-renewable biomass consumption as it only considers the average biomass stocks from areas that are completely deforested. Unsustainable wood harvesting that leads to forest degradation and significant reductions in biomass stocks, but not complete deforestation, are not considered in the cross-check.”

PP has done calculation of fNRB as per CDM Methodological Tool: “Calculation of fraction of non-renewable biomass” (v03.0). Validation team confirms that it has checked fNRB calculation report/spread sheet /13-02/.

As per the applied methodological tool, In the case of ex-ante calculation of fNRB, the parameter fNRB shall be estimated using the most recent historical year for which data is available. Review of fNRB report /13-04/ prepared by PP revealed that all the data used for the calculation is latest available data at the time of validation.

A review of fNRB calculation report/spreadsheet/13-02/ prepared by PP reveals that the estimation of non-domestic fuel consumption was derived from the UN Statistics Division wood consumption and population statistics, in combination with the national average per capita woody biomass consumption. The non-domestic fuelwood consumption estimates provided by the UN Statistics Division have been conservatively applied, disregarding the additional deforestation likely occurring as a result of shifting agriculture and from informal or illegal harvesting. Other categories of non-domestic consumption reported by the UN Statistics Division have been conservatively excluded due to apparent double accounting with domestic consumption. The total woody biomass consumption for Each region of Rwanda under project activity is as per the fNRB report /13-04/ prepared by PP is estimated, which is deemed appropriate to the VVB.

PP has provided the fNRB calculation sheet in line with the TOOL30, v04.0. The validation team has checked the above calculation/13/and the calculation was deemed to be appropriate.

The difference between woody biomass consumption and renewable biomass is considered to be non-renewable. Non-renewable biomass utilization in Rwanda is, therefore, validated by VVB. The fraction of non-renewable biomass is the quotient of the non-renewable and the total biomass. The fraction of non-renewable biomass for Rwanda is, therefore, validated as follows:

Country	fNRB
Rwanda	0.89

The review of this report/spreadsheet/13-02/ and interviews with the PP and, validation teams confirm the following:

The report has been prepared by an PP who is experienced in conducting such a study.

The detailed methodology (including the calculation) of conducting the study has been provided in the report spreadsheet/13/.

The study has been done in accordance with the CDM Methodological Tool: “Calculation of fraction of non-renewable biomass” (v04.0) 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 the opinion of the validation team, the calculation of fNRB is correct and in line with the CDM Methodological tool: Calculation of the fraction of non-renewable biomass (v4.0) and thus acceptable to the validation team.

This grouped project would achieve a total emission reduction of 13,061,800tCO₂e in the 10-year crediting period and an average of 1,306,180tCO₂e per year as indicated in the final VCS PD/01/ and also in the ER spread sheet/02/.

In conclusion, all values used in the VCS PD to calculate emission reductions are considered reasonable in the context of the proposed grouped project “Rwandan Improved Grouped Cookstove project in Rwanda and the calculation approach is correct.

3.3.7 Methodology Deviations

No methodology deviations have been applied to the grouped project.

3.3.8 Monitoring Plan

The grouped project has correctly applied the approved baseline and monitoring methodology VMR0006, version 1.1 titled “Methodology for Installation of High Efficiency Firewood Cookstoves”. The monitoring plan provides detailed information related to the collection and archiving of all relevant data needed to:

- Estimate or measure emissions occurring from GHG sources, sinks and reservoirs
- Determine the baseline emissions

The monitoring plan as per VMR0006, version 1.1 has been clearly described in section 5 of the VCS PD. It covers all the monitoring parameters required to monitor by the grouped project and emission reductions due to the grouped project accurately.

The monitoring plan/procedure followed to measure the emission reduction is applied accurately and with a conservative approach.

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 5.2 of the PD. The parameters, which are to be monitored include:

Parameter	Unit	Value	Assessment
$N_{y,i,j}$ Number of project devices of type i and batch j operating during year y	Number	400,000	This parameter will be monitored. at least once every two years based on the monitoring survey.
$B_{y=1,new,i,survey}$ Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i , determined in the first year of the implementation of the project through a sample survey	Tonnes/device/year	2.14	This parameter will be Determined in the first year of project implementation based on the monitoring survey.

Life Span	Number of years	5years	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 thePP 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 project device i	year	21-june-2022	This parameter has been identified by Validation and verification team during the document review PD/01/ along with the supporting evidence which has been provided by PP.

The PP will conduct representative sampling as part of a cross-PA sampling plan in accordance with the methodology applied and the Standard: Sampling and surveys for CDM project activities and programme of activities, version 9.0. The sampling methodology will be in accordance with the sampling guidelines and standards as specified in section 5.3 of the VCS PD.

The sampling objective for each parameter is to determine a statistically significant parameter value for the emission reduction calculations through a sampling survey. The parameters to be monitored as listed in section 5.2 of the VCS PD are:

No.	Monitoring Parameters	Sampling Parameters	Parameter type	Monitoring frequency
1	$N_{y,i,j}$	Proportion of operational ICS	Proportion	Biennially
2	$B_{y=1,new,i,survey}$ (Applicable only in case of use of Equation 4 of the methodology VMR0006 ver 1.1)	Quantity of woody biomass used by project devices	Mean	First year of project implementation and fixed thereafter for entire crediting period

Detailed responsibilities and authorities for project management, monitoring procedures, calibration procedures and QA/QC procedures have been presented and were verified during follow up interviews. The detailed monitoring practice is considered appropriate and

the implementation of these will enable subsequent verification of the project's emission reductions.

All relevant data will be archived electronically and further maintained for the entire crediting period plus two years. Based on the above assessment the validation team concludes that the PP is capable to implement the monitoring plan and hence confirms compliance of VCS guidelines and the applied methodology /B07/.

3.4 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 VALIDATION OPINION

The Project Participant, Likano Project Development GmbH has commissioned Carbon Check (India) Private Ltd. (CC IPL) to validate the grouped project "Rwandan Improved Cookstove Project", with regard to VCS requirements/B01/ and the information provided by the project proponent related to the project design, operation, monitoring and reporting.

CC IPL has reviewed the project description documents and subsequently carried out site visit interviews to confirm the fulfilment of stated criteria. The project intends to reduce GHG emissions by disseminating energy-efficient improved cookstoves (ICS) to replace existing traditional 3 stone firewood Cookstoves in domestic households and communities in Rwanda. A risk-based approach has been followed to perform this validation. In the course of validation, 15 CARs and 00 CLs are raised which have been resolved by the PP.

The project activity has applied the baseline and monitoring methodology, VMR0006 version 1.1: "Methodology for Installation of High Efficiency Firewood Cookstoves" /B07/, which is an approved methodology under the VCS programme. The baseline has been determined in accordance with the stated approved baseline methodology.

Analysis of the proposed project activity reveals that the emission reductions resulting from the project activity are real, measurable and give long term benefits and are additional to what would have occurred in the absence of the grouped project. The annual average emission reductions from the project activity are estimated to be 1,306,180tCO₂e per annum. The emission reductions forecast has been checked and is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan makes sufficient provision for monitoring relevant projects and baseline emission indicators. Responsibilities and authorities for project management, monitoring and reporting and QA/QC procedures have also been addressed.

Based on the information provided by the project developer, it is CCIPL's opinion that the project, "Rwandan Improved Cookstove Project – Rwanda" in Rwanda as described in the

VCS PD, Version 05.0 dated 22-June-2023 /01/, meets all relevant VCS requirements and correctly applied approved baseline and monitoring VCS methodologyVMR0006, version 1.1 /B07/.

CCIPL's validation opinion is purely based on the information made available to us by the project proponent during the course of validation and hence CCIPL cannot guarantee the accuracy or correctness of the information. Keeping this in mind, no party can hold CCIPL liable for any decisions made or not made in this report.

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1	575,093
Year 2	1,112,257
Year 3	1,612,544
Year 4	2,076,992
Year 5	1,931,530
Year 6	1,790,188
Year 7	1,652,906
Year 8	1,188,458
Year 9	758,827
Year 10	363,005
Total estimated ERs	13,061,800
Total number of crediting years	10
Average annual ERs	1,306,180

APPENDIX 1.1: REFERENCE DOCUMENTS

Ref	Document
/01 /	<ol style="list-style-type: none"> 1. VCS PD version 01, dated 15-February-2023 2. VCS PD version 02, dated 10-May-2023 3. VCS PD version 03, dated 17-May-2023 4. VCS PD version 04, dated 26-May-2023 5. VCS PD version 05, dated 22-June-2023
/02 /	a. ER calculation spreadsheet, version 1.0, dated: 15-February-2023
/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 -Canarumwe stove.
/06 /	<p>Declaration(s) from Project proponent on the following:</p> <ol style="list-style-type: none"> 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 otherGHG program. d) 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 /	<p>Calculation of fNRB along with all supporting evidence:</p> <ol style="list-style-type: none"> 1. fNRB calculation sheet version 1 dated 15/02/2023. 2. fNRB calculation sheet version 2 dated 04/06/2023. 3. Global Forest Resources Assessment 2020: Rwanda

	4. Fnrb report by C4solutions
/14 /	Evidence of sale record of each stove for the start date of the project activity for each district in Rwanda.
/15 /	Company registration certificate LIKANO
/16 /	BEST study Details EXERGIA.
/17 /	WBT / Manufacturer stove - web link Clean Cooking Catalog - Functional Demo (cleancookstoves.org)
/18 /	Site visit records - onsite pictures, survey questionnaire , GPS coordinates of each household interviewed .

APPENDIX 1.2: BACKGROUND DOCUMENTS

	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) b. 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

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
DOE	Designated Operational Entity
DVR	Draft Validation Report
EB	Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
CTF	Carbon Transfer form
IPCC	Intergovernmental Panel on Climate Change
NA	Not Applicable
OSV	On Site Visit
PA	Project Activity
PAI	Project Activity Instance
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
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
WVB	Validation/Verification Body
WVM	Validation and Verification Manual
VVS	Validation and Verification Standard
TDR	Total Distribution records

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:

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

in the following Technical Areas:

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

<p>Issue Date 1st January 2023</p>	<p>Expiry Date 31st December 2023</p>
--	---

 <hr style="width: 80%; margin: 0 auto;"/> <p>Mr. Vikash Kumar Singh Compliance Officer</p>	 <hr style="width: 80%; margin: 0 auto;"/> <p>Mr. Amit Anand CEO</p>
--	--

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023



Carbon Check (India) Private Limited

Certificate of Competency

Angelique Karigirwa

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

for the following functions and requirements:

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

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
03rd May 2023

Expiry Date
02nd May 2024



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO

APPENDIX 4: FINDINGS LOG

Table 1. CLs from this Validation

Not applicable

Table 2. CARs from this Validation

CAR ID	01	Section no.	PD	Date: 01/05/2023
Description of CAR				
1)PP to use the latest version template available on the VCS website i.e., V4.2.				
2)PP to complete all sections using Arial or Franklin Gothic Book 10.5-point, black, regular (non-italic) font.				
Project participant response				Date: 04/05/2023
1) PP has updated the PD to latest version 4.2.				
2) PP has updated all text as requested.				
Documentation provided by project participant				
VCS PD 2984_v2				
VVB assessment				Date: 16/05/2023
VVB has assessed the PD and found that PP has update the PD hence CAR is closed.				

CAR ID	02	Section no.	KPI	Date: 01/05/2023
Description of CAR				
The version of the fist submission must start from version 1, PP to share the next version as version 2.				
Project participant response				Date: 04/05/2023
PP has labelled the updated version as version 2.				
Documentation provided by project participant				
VCS PD 2984_v2				
VVB assessment				Date: 16/05/2023
VVB has done the assessment and found PP has labelled the updated version as version 2. hence CAR is closed.				

CAR ID	03	Section no.	PD	Date: 01/05/2023
--------	----	-------------	----	------------------

Description of CAR	
PP to mention the methodology version throughout the PD.	
Project participant response	Date: 04/05/2023
PP has added methodology version (VMR0006) throughout the PD. PP provides hereunder a link to a Dropbox folder including the updated PD: https://www.dropbox.com/sh/iyrb1q2y8mc7fvl/AAAFmfHyy37UGqi-On8XH720a?dl=0	
Documentation provided by project participant	
VCS PD 2984_v2	
VVB assessment	Date: 16/05/2023
VVB has done the Assessment and found that PP has not mention methodology version number throughout the PD as under section 1.3 of the PD version number is not mentioned also under section 3.1 the methodology version number is contradicting # CAR is open.	
Project participant response	Date: 17/05/2023
PP has added reference to the correct version of the methodology throughout the PD and is now referring to "VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, v1.1".	
Documentation provided by project participant	
NA	
VVB assessment	Date: 23/05/2023
After evaluating the PD, VVB has determined that the methodology version has been consistently maintained throughout the PD. As a result, CAR is now considered closed.	

CAR ID	04	Section no.	1.4	Date: 01/05/2023
Description of CAR				
PP to provide the manufacturer specification and WQT test result.				
Project participant response				Date: 04/05/2023
PP has inserted a link to the stove manufacturing specification in the updated PD: http://catalog.cleancookstoves.org/stove_details.html?stove_id=stove_59AC9Q6 The Clean Cookstove Catalogue states an efficiency of 26.3%, which is based on tests carried out at the Makerere University in Kampala, Uganda and evidenced by the report "Fuel Use and Emissions Report for Canarumwe and Canamake Iviguruye Stoves" prepared by the "Centre for Research in Energy and Energy Conservation" at the Makerere University in Kampala, Uganda. PP provides here under a link to a Dropbox folder including this report:				

https://www.dropbox.com/sh/iyrb1q2y8mc7fvl/AAAFmfHy37UGqi-On8XH720a?dl=0				
Documentation provided by project participant				
VCS PD 2984_v2				
Report "Fuel Use and Emissions Report for Canarumwe and Canamake Iviguruye Stoves"				
VVB assessment			Date: 16/05/2023	
VVB has assessed the PD for stove technical specification and found to be inconsistent with the test report. PP to clarify on this hence CAR is open.				
Project participant response			Date: 17/05/2023	
PP would like to clarify that the stove manufacturing specification in the Clean Cooking Catalogue indicates the maximum pot capacity (20 litres), while the test results indicate the actual pot size used during the test (7 litres). Hence the technical specifications are consistent.				
Documentation provided by project participant				
-				
VVB assessment			Date: 23/05/2023	
After reviewing the PD and the Test Report provided by the PP, VVB has determined that the maximum capacity of the pot is 20 litres. However, the PP is requested to provide the test report specifically for the stove with a 20 litres capacity. Therefore, the CAR remains open until the requested test report is provided by the PP.				
Project participant response			Date: 24/05/2023	
<p>The "Stove Manufacturers Emissions & Performance Test Protocol (EPTP)", published on the website of the Clean Cooking Alliance (https://cleancookstoves.org/binary-data/DOCUMENT/file/000/000/73-1.pdf) suggests on size and dimension of pots for tests: "Although the EPTP does not require a specific pot, choose a pot reasonable for the volume of water being used. Depending on the stove firepower and the temperature of available water, the test water volume might range from approximately 4 to 6L." (p.6) Appendix D provides further details on the quantity of water, depending on water temperature, volume ranging from 4.36-6.25 kilos/litres.</p> <p>The Partnership for Clean Indoor Air carried out a study on "Test Results of Cook Stove Performance" (https://pciaonline.org/files/Test-Results-Cookstove-Performance.pdf). The tests were carried out "Boiling 5 liters (L) of water in a standard 7-liter pot (cold and hot start)", using the revised University of California Berkeley (UCB) Water Boiling Test (WBT) protocols.</p> <p>The stove test submitted by PP had the following setup: "Five litres of water were brought to a boil in a 7 litre pot". This is exactly in line with the EPTP and also matches the test setup for the Partnership for Clean Indoor Air.</p> <p>PP sees no need to carry out a test with a 20 litres pot.</p>				
Documentation provided by project participant				
-				
VVB assessment			Date: 26/05/2023	
After careful evaluation of the clarification provided by PP regarding the discrepancy in stove technical specifications, VVB has determined it to be acceptable. As the efficiency of a stove is calculated based on the input and output ratio, the test report submitted by PP, featuring a 7-litre pot, is deemed satisfactory. Therefore, the CAR has been closed.				
CAR ID	05	Section no.	1.6	Date: 01/05/2023

Description of CAR	
IN the relevant section of PD, PP shall mention other entity/ies involved, like local partners for distribution of ICS or Maintenance partners.	
Project participant response	Date: 04/05/2023
PP has added in-country partners in the relevant sections of the PD.	
Documentation provided by project participant	
VCS PD 2984_v2	
VVB assessment	Date: 16/05/2023
VVB has assessed the PD and found that under section 1.6 of PD the PP has added the REDO and RPP hence CAR is closed.	

CAR ID	06	Section no.	1.7	Date: 01/05/2023
Description of CAR				
As the project has started on 01/07/2022, PP shall share the sample signed Carbon transfer forms as proof of carbon credits transfer to Likano group.				
Project participant response				Date: 04/05/2023
PP provides hereunder a link to a Dropbox folder including all the scanned Carbon Transfer Forms (CTFs): https://www.dropbox.com/sh/iyrb1q2y8mc7fvl/AAAFmfHyy37UGqi-On8XH720a?dl=0				
Furthermore, the project started on 21/06/2022, the date when the first stoves were distributed. PP has updated the PD accordingly, as the previous date was an estimate.				
Documentation provided by project participant				
Scanned CTFs				
VVB assessment				Date: 16/05/2023
VVB has assessed the PD and found that PP has updated the project start date was 21/06/2022 and this is the date when first stove were distributed which is not in line with dates in CTFs documents as it was mentioned 29/06/2022 PP to clarify on this , hence CAR is open				
Project participant response				Date: 17/05/2023
The evidence for the first stove distributed is the CTF scan titled 'First stove distributed_Ngoma'. PP has attached the document in email together with these responses.				
Documentation provided by project participant				
First stove distributed_Ngoma				

VVB assessment	Date: 23/05/2023
Upon assessment of the document regarding the start date provided by the PP, VVB has concluded that the start date of 21/06/2022 in line with the PD. CAR is now considered closed.	

CAR ID	07	Section no.	1.8	Date: 01/05/2023
Description of CAR				

PP to present the Start date evidences for each region also provide the sales record for the same.

Project participant response	Date: 04/05/2023
------------------------------	------------------

PP provides hereunder a link to a Dropbox folder including the start date evidences in the form of the first signed Carbon Transfer Form of each district.

<https://www.dropbox.com/sh/iyrb1q2y8mc7fvl/AAAFmfHyy37UGqi-On8XH720a?dl=0>

Documentation provided by project participant

Scanned CTFs including the first stove distributed for each district.

VVB assessment	Date: 16/05/2023
----------------	------------------

PP has provided CTF including the first stove distributed on (29/06/2022) in Ngoma district are not inline with project start date- 21/06/2022 as mentioned by PP in PD furthermore PP is to clarify hence CAR is open

Project participant response	Date: 17/05/2023
------------------------------	------------------

The CTF including the stove distributed on 29/06/2022 is not the CTF showing the first stove distributed. The correct document to look at for the first stove distributed is - as mentioned above - the document titled 'First stove distributed_Ngoma'.

Documentation provided by project participant

First stove distributed_Ngoma

VVB assessment	Date: 23/05/2023
----------------	------------------

Upon assessment of the document regarding the start date provided by the PP, VVB has concluded that the start date of 21/06/2022 in line with the PD. CAR is now considered closed.

CAR ID	08	Section no.	1.10	Date: 01/05/2023
Description of CAR				

In section 1.10 of the PD, the check box options for the estimated annual GHG emission reduction/removals are missing.

Project participant response	Date: 04/05/2023
------------------------------	------------------

It is PPs understanding that the check box list which the Auditor is referring to, is only to be used if the following text, taken from the PD template, applies.

<p>When completing a draft project description for the purpose of listing on the pipeline as under development, complete the following information; otherwise, delete this text.</p>				
<p>Documentation provided by project participant</p>				
<p>VVB assessment</p>				
				Date: 16/05/2023
<p>VVB has assessed PD and certified VCS PD and found that above clarification given by PP is deemed to be acceptable hence CAR is closed</p>				
CAR ID	09	Section no.	PD	Date: 01/05/2023
<p>Description of CAR</p>				
<ol style="list-style-type: none"> 1. PP to provide working footnote weblink of technical specs sheet/catalog of CANARUMWE stove in PD 2. PP to provide the working weblink for the mentioned Stove efficiency 				
<p>Project participant response</p>				Date: 04/05/2023
<ol style="list-style-type: none"> 1. PP has updated the link. 2. PP has updated the link 				
<p>Documentation provided by project participant</p>				
<p>VCS PD 2984_v2</p>				
<p>VVB assessment</p>				Date: 16/05/2023
<p>VVB has assessed the PD for stove technical specification and found to be inconsistent with the test report . PP to clarify on this hence CAR is open.</p>				
<p>Project participant response</p>				Date: 17/05/2023
<p>PP would like to clarify that the stove manufacturing specification in the Clean Cooking Catalogue indicates the maximum pot capacity (20 litres), while the test results indicate the actual pot size used during the test (7 litres). Hence the technical specifications are consistent.</p>				
<p>Documentation provided by project participant</p>				
<p>VVB assessment</p>				
				Date: 23/05/2023
<p>After reviewing the PD and the Test Report provided by the PP, VVB has determined that the maximum capacity of the pot is 20 litres. However, the PP is requested to provide the test report specifically for the stove with a 20 litres capacity. Therefore, the CAR remains open until the requested test report is provided by the PP.</p>				
<p>Project participant response</p>				Date: 24/05/2023
<p>The “Stove Manufacturers Emissions & Performance Test Protocol (EPTP)”, published on the website of the Clean Cooking Alliance (https://cleancookstoves.org/binary-data/DOCUMENT/file/000/000/73-1.pdf) suggests on size and dimension of pots for tests: “Although the EPTP does not require a specific pot, choose a pot reasonable for the volume of water being used. Depending on the stove firepower and the temperature of</p>				

available water, the test water volume might range from approximately 4 to 6L.” (p.6) Appendix D provides further details on the quantity of water, depending on water temperature, volume ranging from 4.36-6.25 kilos/litres.

The Partnership for Clean Indoor Air carried out a study on “Test Results of Cook Stove Performance” (<https://pciaonline.org/files/Test-Results-Cookstove-Performance.pdf>). The tests were carried out “Boiling 5 liters (L) of water in a **standard 7-liter pot (cold and hot start)**”, using the revised University of California Berkeley (UCB) Water Boiling Test (WBT) protocols.

The stove test submitted by PP had the following setup: “Five litres of water were brought to a boil in a 7 litre pot”. This is exactly in line with the EPTP and also matches the test setup for the Partnership for Clean Indoor Air.

PP sees no need to carry out a test with a 20 litres pot

Documentation provided by project participant

-

VVB assessment

Date: 26/05/2023

After careful evaluation of the clarification provided by PP regarding the discrepancy in stove technical specifications, VVB has determined it to be acceptable. As the efficiency of a stove is calculated based on the input and output ratio, the test report submitted by PP, featuring a 7-litre pot, is deemed satisfactory. Therefore, the CAR has been closed.

CAR ID	10	Section no.	1.11	Date: 01/05/2023
Description of CAR				
<ol style="list-style-type: none"> 1. PP shall submit the technical life certificate of ICS issued by original equipment manufacturer (OEM) or any qualified third party. 2. PP shall provide the estimates of the budget proposed for such repairs and a plan to monitor and report the repairs and expenses. 3. As the project already started on 01/07/2022, PP shall share the total distribution record of cookstoves including UID number of Each Cookstoves, as proof of ICS distribution till date. Also, the carbon transfer forms need to be submitted for the assessment. 				
Project participant response				Date: 04/05/2023
<ol style="list-style-type: none"> 1. PP has added a footnote with a link to the Catalog of cookstoves showing the technical specs of the Canarumwe stove. 2. PP has added information on this in PD section 1.11. 3. PP provides hereunder a link to a Dropbox folder including Total Distribution Record (TDR) including the ID number of each cookstove as well as all the scanned Carbon Transfer Forms: <p>https://www.dropbox.com/sh/iyrb1q2y8mc7fvl/AAAFmfHyy37UGqi-On8XH720a?dl=0</p>				
Documentation provided by project participant				
Report “Fuel Use and Emissions Report for Canarumwe and Canamake Iviguruye Stoves” prepared by the “Centre for Research in Energy and Energy Conservation”. VCS PD 2984_v2 Scanned CTFs TDR				
VVB assessment				Date: 16/05/2023
#1VVB has assessed the PD for stove technical specification and found to be inconsistent with the test report .PP to clarify on this hence CAR is open for #1. #2 VVB has assessed the PD and found that PP has added the About 2 percent of the stove costs are budgeted for repairs by Likano hence CAR is closed for #2. #3 VVB has assessed the TDR and found start date 21/06/2022 is in line with the PD hence CAR is closed				
Project participant response				Date: 17/05/2023

PP would like to clarify that the stove manufacturing specification in the Clean Cooking Catalogue indicates the maximum pot capacity (20 litres), while the test results indicate the actual pot size used during the test (7 litres). Hence the technical specifications are consistent.

Documentation provided by project participant

VVB assessment

Date: 23/05/2023

After reviewing the PD and the Test Report provided by the PP, VVB has determined that the maximum capacity of the pot is 20 litres. However, the PP is requested to provide the test report specifically for the stove with a 20 litres capacity. Therefore, the CAR remains open until the requested test report is provided by the PP.

Project participant response

Date: 24/05/2023

The “Stove Manufacturers Emissions & Performance Test Protocol (EPTP)”, published on the website of the Clean Cooking Alliance (<https://cleancookstoves.org/binary-data/DOCUMENT/file/000/000/73-1.pdf>) suggests on size and dimension of pots for tests: “Although the EPTP does not require a specific pot, choose a pot reasonable for the volume of water being used. Depending on the stove firepower and the temperature of available water, the test water volume might range from approximately 4 to 6L.” (p.6) Appendix D provides further details on the quantity of water, depending on water temperature, volume ranging from 4.36-6.25 kilos/litres.

The Partnership for Clean Indoor Air carried out a study on “Test Results of Cook Stove Performance” (<https://pciaonline.org/files/Test-Results-Cookstove-Performance.pdf>). The tests were carried out “Boiling 5 liters (L) of water in a **standard 7-liter pot** (cold and hot start)”, using the revised University of California Berkeley (UCB) Water Boiling Test (WBT) protocols.

The stove test submitted by PP had the following setup: “Five litres of water were brought to a boil in a 7 litre pot”. This is exactly in line with the EPTP and also matches the test setup for the Partnership for Clean Indoor Air.

PP sees no need to carry out a test with 20 litres pot.

Documentation provided by project participant

-

VVB assessment

Date: 26/05/2023

After careful evaluation of the clarification provided by PP regarding the discrepancy in stove technical specifications, VVB has determined it to be acceptable. As the efficiency of a stove is calculated based on the input and output ratio, the test report submitted by PP, featuring a 7-litre pot, is deemed satisfactory. Therefore, the CAR has been closed.

CAR ID	11	Section no.	1.12	Date: 01/05/2023
---------------	-----------	--------------------	-------------	-------------------------

Description of CAR

CME to frame table heading clearly mentioning GPS and Districts

Project participant response

Date: 04/05/2023

PP has included a table heading.

Documentation provided by project participant

VCS PD 2984_v2

VVB assessment

Date: 16/05/2023

VVB has assessed the PD and found that PP has included the table heading mentioning the GPS and districts and hence CAR is closed.

CAR ID	12	Section no.	4.4	Date: 01/05/2023
---------------	-----------	--------------------	------------	-------------------------

Description of CAR

<ol style="list-style-type: none"> 1. PP shall clarify how the efficiency of baseline cookstove and ICS are estimated. The method need to be mentioned in section 4.4 2. PP shall submit the calculation sheet for the parameter By:1,new,l,j,survey (2.14 tonnes / device / year) along with monitoring results from the survey of Ibanda-Makera Cookstove Project 3. fNRB value 0.89 has been considered, PP shall submit the source of fNRB estimation. 	
Project participant response	Date: 04/05/2023
<ol style="list-style-type: none"> 1. The efficiency of the baseline stove/three-stone fire is defined in the methodology (10%), the efficiency of the project stoves (26.3%) has been evidenced by the report of Makerere University. Wording has been added in the PD accordingly. 2. PP has submitted the KPT test results and the Monitoring Report of the Ibanda Makera Project. The report confirms a daily wood fuel consumption of 5.87 kg/HH/day, which translates to a consumption of 2.14 t/HH/a. Please note that this value is just an assumption for the calculation and will be replaced with actual KPT test results during the first verification. 3. PP has submitted a calculation of fNRB based on TOOL 30. <p>PP provides hereunder a link to a Dropbox folder including the documents from 2. and 3: https://www.dropbox.com/sh/iyrb1q2y8mc7fvj/AAAFmfHyy37UGqi-On8XH720a?dl=0</p>	
Documentation provided by project participant	
Monitoring Report Ibanda Makera Project, MP1 KPT test results Ibanda Makera Project, MP1 Calculation of fNRB	
VVB assessment	Date: 16/05/2023
<p>#1VVB has assessed the PD and found that the efficiency of the project stoves (26.3%) has been evidenced by the report of Makerere University. Wording has been added in the PD accordingly by PP hence CAR is closed for#1</p> <p>#2VVB has assessed the KPT test result and furthermore PP to clarify why Monitoring report shared by client is in gold standard format hence CAR is open.</p> <p>#3VVB has assessed the FnrB Calculation sheet provided in drobox as PP has not Mention the value of N= Number of households consuming wood fuel within the applicable area in the relevant period (number) has not been mentioned PP to clarify on this open CAR.</p>	
Project participant response	
Date: 17/05/2023	
<p>#2: The value of 2.14 t/HH/a is based on test results from a Gold Standard project, which also uses the Canarumwe stove. PP shared the relevant Monitoring Report, hence the GS logo. Please note that this value is just an assumption for the calculation in the PD and will be replaced with actual KPT test results during the first verification.</p> <p>#3: The PD on page 49 states:” The tool par. 15 allows to use an aggregated value for consumption per household (HW) times the number of households (N).” PP has opted to use an aggregate value of 9 m tons/a, as stated in the table on page 50 of the PD.</p>	
Documentation provided by project participant	
VVB assessment	
Date: 23/05/2023	
<p>#2 After evaluating the GS MR for the KPT test results, VVB has identified the need for clarification from the PP regarding the avoidance of double counting. PP is kindly requested to provide a declaration or proof explaining how they ensure the avoidance of double counting for this project. The CAR remains open until the requested clarification or proof is provided by the PP.</p>	

<p>#3 Upon assessment of the PD, VVB has reviewed the clarification provided by the PP. The PP has justified the use of an aggregate value of 9 metric tons per year, as mentioned in the table on page 50 of the PD. After careful consideration, VVB deems this justification to be acceptable. CAR is closed.</p>	
<p>Project participant response</p>	<p>Date: 25/05/2023</p>
<p>#2: Under the Gold Standard Likano is carrying out the Ibanda – Makera Forest Cook Stove Project in Rwanda’s Kirehe district. The Kirehe district is not part of the project area covered by the Rwandan Improved Cookstove Project, Project ID 2984. Therefore, there is no risk of double counting.</p>	
<p>Documentation provided by project participant</p>	
<p><i>Declaration likano</i></p>	
<p>VVB assessment</p>	<p>Date: 26/05/2023</p>
<p>After considering the clarification and evidence provided by PP, VVB found that Under the Gold Standard Likano is carrying out the Ibanda – Makera Forest Cook Stove Project in Rwanda’s Kirehe district. The Kirehe district is not part of the project area covered by the Rwandan Improved Cookstove Project, Project ID 2984. Therefore, there is no risk of double counting. CAR is closed.</p>	

CAR ID	13	Section no.	5.1	Date: 01/05/2023
Description of CAR				
CME to clarify how the value of fNRB,y can be fixed ex-ante if it is proposed to be verified during first monitoring period.				
Project participant response				Date: 04/05/2023
fNRB is mentioned under 5.1 (data and parameters available during validation) and will be fixed during validation. PP has deleted wording in the PD referring to first verification, as this was a mistake.				
Documentation provided by project participant				
VCS PD 2984_v2				
VVB assessment				Date: 16/05/2023
VVB has assessed and reviewed the PD and found that PP has done the mistake in the PD referring to first verification under section 5.1 of data and parameter during validation hence CAR is closed.				

CAR ID	14	Section no.	5.2	Date: 01/05/2023
Description of CAR				
The section 5.2, "Description of measurement methods and procedures to be applied" and "QA/QC procedures to be applied" shall be updated for the parameter "Date of commissioning of project device i.				
Project participant response				Date: 04/05/2023
PP added wording on the parameter “date of commissioning of project device i”.				
Documentation provided by project participant				
VVB assessment				Date: 16/05/2023
VVB has assessed and reviewed the PD and found that PP has add the wording under Description of measurement methods and procedures to be applied" and "QA/QC procedures to be applied" of parameter “date of commissioning of project device I”. hence CAR is closed.				

CAR ID	15	Section no.	PD, ER sheet	Date: 26/05/2023
Description of CAR				
PP to note version 3 of tool 30 is no longer valid, kindly use the latest version of tool 30 i.e., V4 to calculate the FNRB. Further kindly updated ER sheet & PD accordingly. Also, provide the FNRB calculation sheet in line with a tool 30 Version 4				
Project participant response				Date: 26/05/2023
The only change between V.3 and V.4 of TOOL30 is a reference to TOOL33 for using default values for wood-to-				

charcoal conversion factor. As PP is not applying these default values in the calculation, there is no change in the calculations. PP has corrected references to TOOL30 v.4 in the PD.	
Documentation provided by project participant	
WB assessment	Date: 29/05/2023
Pp has submitted the revised PD mentioning the latest version of tool however the FNRB calculation will be same as the only difference in new version is "wood to charcoal conversion factor" which is not applicable to this project hence CAR is closed .	

Table 3. FARs from this Validation

Not applicable