D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA

Carbon Check (India) Private Ltd.

Report ID	CCIPL2072/VCS/VER/DLICPIK/20231115
Project title	D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA
Project ID	VCS 4223
Verification period	08-September-2022 to 07-September-2023
Original date of issue	02-January-2024
Most recent date of issue	10-April-2024
Version	2.0
VCS Standard Version	4.6
Client	d.light design, ltd.
Prepared by	Carbon Check India Private Limited
Approved by	Sanjay Kumar Agarwalla, Technical Director

Work carried out by	Dinesh Mane (Team Leader, Technical Expert) Tanvi Nadkarni (Trainee Assessor) Tekapso Leslie (Trainee Assessor) Willis Okumu (Local Expert) Swapnil Thanekar (Technical Reviewer)

Summary:

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

Verification: Carbon Check (India) Private Ltd. (CCIPL) has been contracted by d.light the project proponent, to carry out the verification of voluntary greenhouse gas emission reductions generated by the Project Activity, "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA". The verification is based on the desk review of the Monitoring report /01/, registered VCS PD /03/, the corresponding validation report /03/, supporting emission reduction calculation spread sheets /02/ and other relevant supporting documents made available to the verification team by the project proponent accompanied by on-site interviews. This verification involves the period from 08-September-2022 to 07-September-2023 (including both the days).

Project: The project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA", is a project which employs VCS methodology; VMR0006 version 1.1 /B02/. The project entails the distribution of fuel-efficient stoves throughout the Republic of Kenya. 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 purpose and scope of verification**

Purpose: The purpose of the verification is to review the monitoring results and verify that monitoring methodology was implemented in accordance with the monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources are sufficient, definitive, and presented in a concise and transparent manner. Monitoring plan, monitoring report and project compliance with relevant VCS (VCS Standard Version 4.6, VCS requirements under VCS program guide, relevant decisions, clarifications, and guidance from VCS associations.), CDM (relevant decisions, clarifications, and guidance from the CMP and CDM Executive Board)and host party criteria are particularly verified to confirm that the project has been implemented in accordance with previously registered design and conservative assumptions, as documented.

Scope: The scope of the verification is:

- To verify the project implementation and operation with respect to the registered VCS PD/03/.
- To verify the implemented monitoring plan with the registered VCS PD /03/. And applied baseline and monitoring methodology /B02/.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

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

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

(a) Desk review, involving:

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

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

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

(b) On-site assessment involving but not limited to:

(i) Assessment of the implementation and operation of the proposed VCS project activity as per the registered VCS PD/03/ and description in MR/01/;

(ii) Verification of implemented monitoring plans per the VCS PD & MR and applied baseline and monitoring methodology;(iii) Review of information flows for generating, aggregating, and reporting the monitoring parameters;

(iv) Interview with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS PD /03/;

(v) A cross-check between information provided in the monitoring report and data from other sources such as inventories, purchase records/25/, or similar data sources (refer Appendix 1.1 of this report);

(vi) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS PD /03/ and the selected methodology/B02/;

(vii) Review of calculations and assumptions made in determining the GHG data and emission reductions;

(viii) Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

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

  A risk-based approach has been followed to perform this verification. During the course of verification, a total of 10 findings were raised, which includes:
  07 Corrective Action Request (CAR); 03 Clarification Requests (CLs);
  All the raised findings have been resolved by the PP.

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

  The VCS MR /01/, emissions reduction calculations /02/ along with the supporting documents provided are considered to be in line with all the VCS requirements /B01/. The verification team has detected no further uncertainties or quality restriction.

- **Summary of the verification conclusion**

  In CCIPL's opinion, the emission reductions reported for the "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" in the monitoring report are fairly and correctly stated. CCIPL is therefore able to certify that the emission reductions from the "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" during the period from 08-September-2022 to 07-September-2023, is amount 38,422 tCO_2 equivalent.

CONTENTS

1 INTRODUCTION

1.1 Objective

d.light has appointed Carbon check India Private Limited (CCIPL) to carry out verification of the project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" (VCS 4223) for the period from 08 September 2022 to 07 September 2023 (both dates included). This report summarizes the findings of the verification of the project performed based on VCS requirements & UNFCCC criteria of CDM, as well as criteria to provide for consistent project operations, monitoring, and reporting.

The objective of the verification is to have an independent evaluation of a project activity by an accredited validation and verification body against the requirements of the latest applicable version of the VCS documents, VCS standard version 4.6/B01/ and GHG program applied/B05/, based on the registered project description /03/. The verification is for the period from 08 September 2022 to 07 September 2023. The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per registered VCS PD/03/, MR/01/ and that all physical features (technology/13/, project equipment/14/ and monitoring equipment's/12/) of the project are in place;
- Monitoring report/01/ and other supporting documents are complete/2-24/;
- The data is recorded and stored as per the monitoring methodology/B02/ and approved monitoring plan/03/.

To confirm that the monitoring system is implemented and fully functional to generate Verified Carbon Units (VCUs) without any double counting/03/, /16/,/20/,/23/ and to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification of this project is based on the Monitoring Report of this monitoring period /01/, registered VCS PD /03/, Emission reduction calculation spreadsheets /02/, supporting documents made available to the verifier and information collected through performing on-site interviews. Furthermore, publicly available information was considered as far as available and required.

CCIPL has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.
The verification is carried out on basis of the following requirements, applicable for this project activity:

- VCS Standard (v4.6) /B01/
- VCS Program Guide (v4.4) /B01/
- VCS Methodology: VMR0006.: Methodology for Installation of High Efficiency Firewood Cookstoves" (Version 1.1) /B02/.
- Other relevant rules, including the host country legislation

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

- To verify that the project is implemented as described in the registered VCS PD.

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

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

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

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

1.3 Level of Assurance

The verification report is based on the Monitoring report /01/, registered VCS PD /03/, supporting documents, made available to the verifier and information collected through performing on-site interviews.

The verification has been planned and organized to achieve a:

☒ Reasonable level of assurance as per VCS Standard (v4.6)

☐ Limited level of assurance

The threshold for quantitative materiality with respect to the aggregate of errors, omissions, and misrepresentations, relative to the total reported GHG emission reductions and/or removals was limited to five percent, as required by section 4.1.8 of the VCS Standard version 4.6 /B01/.

1.4 Summary Description of the Project

The project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA", is a large project, which employs the VCS methodology; VMR0006 version 1.1 /B02/. The project (at the end of monitoring period) involves distribution and installation of 28,551 fuel-efficient improved cook stoves (ICS) in Kenya.

The project aims to distribute Improved Cookstoves (ICSs) that enhance fuel combustion and heat transfer, leading to decreased fuel usage and reduced indoor air pollution levels, including less smoke, black soot, and particulate matter emissions. This also lowers greenhouse gas emissions linked to non-renewable biomass usage.

In the host country, traditional cooking methods contribute to inefficient combustion of unsustainably sourced, non-renewable biomass (NRB) fuel. Moreover, the use of solid biomass fuels (e.g., wood) in inefficient traditional stoves and/or open fires releases large amounts of particulate matter (PM), creating hazardous levels of indoor air pollution (IAP). In the absence of this project, beneficiaries would continue using inefficient stoves, worsening environmental and health issues.
The implementation status of the project activity(s) at the end of the monitoring period has been as follows:

ICS Type	Year	
	2022	2023
Jikokoa	1,821	21,743
Ecoachar	-	4,987
Total	**28,551**	

The start date of the project was 08/09/2022 and the PP has maintained an ICS distribution database /07/ collecting requisite distribution data (including beneficiary information) including the date of distribution of ICSs.

The project activity does not seek, receive, or plan to receive credit from another GHG-related environmental credit system/16/. Additionally, each ICS is identified with a unique identity number to avoid double counting. PP has declared that the project is not registered in other GHG programs, PP confirmed that the project will only be going forward with VCS registry, as declared in VCS-PD. Thus, emission reductions generated by project will be solely claimed by PP and PP has the right of use, which is acceptable. Verification team had confirmed that project does not participate in any emission trading program or any other GHG program and has not sought or received any other form of environmental credit. The project has applied only under VERRA for registration. This project is not participating under any other GHG programs. PP will not claim the environmental/carbon credits under any other GHG emission reduction scheme for the crediting period under VCS and PP has declared the same during the validation. Hence, there is no possibility of double counting.
Furthermore, the project verification team along with the help of local expert checked the other GHG programmes like, Clean Development Mechanism (CDM) Registry /B05/, GCC Registry /B06/, and Gold Standard Registry /B07/, for the information regarding the consistency of the title of the project activity, GPS coordinates, Legal Ownership of the Project activity to determine if the project was part of any other GHG Program prior to commencement of this verification. It was confirmed that the project owner has not submitted the said project activity under any other GHG program apart from VCS.
The verification team successfully confirmed that authorities and responsibilities concerning the monitoring and reporting of emission reduction data were well-defined for the period spanning from September 8, 2022, to September 7, 2023. Consistency was observed between the final monitoring report (MR) and emission reduction (ER) sheets and the project's full operational status was confirmed through onsite audit. The monitoring plan, as outlined in the MR, was found to be correct, with all parameters monitored using an appropriate system. Interviews with respective personnel and reviews of the roles and responsibilities as per the organizational structure confirmed the competence of personnel involved in monitoring emissions parameters. The project's management and operational systems were deemed effective, with satisfactory organizational structure, responsibilities, and competencies. Data handling procedures, including measurement frequency and quality assurance/quality control (QA/QC), met required precision levels for calculating emission reductions. All monitoring parameters were verified for appropriateness, correctness, accuracy, QA/QC measures, and compliance with standards and requirements. The monitoring plan aligned with the applied methodology and included collection and archiving of data as per protocols. Ex-ante parameters for emission reduction calculation were consistent with standards, and ex-post parameters were monitored according to the plan.
A detailed description of the project details has been included in the section 4.1 of this report.

A total of 28,551 ICS was disseminated till the end of the first monitoring period. The Jikokoa and Ecoachar stoves reduced the amount of non-renewable biomass used for cooking. The start date for the project is 08-September-2022 /04/ which is the date of installation/registration of the first ICS in the project.

The project proponent for the project activity is d.light and it owns the rights to VERs /15/. The other entity responsible for the completion of project related documents is Climate Secure.

The envisaged ex ante estimation of emission reductions for this monitoring period (i.e. 08-September-2022 to 07-September-2023) was 433,651 tCO_2e and the total GHG emission reductions achieved from the Project activity instances are 38,422 tCO_2e for this monitoring period from 08-September-2022 to 07-September-2023.

The project activity has been implemented as described in the registered VCS PD /03/ and the emission reductions are calculated conservatively as per the applied methodologies /B02/.

2 VERIFICATION PROCESS

2.1 Method and Criteria

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

1. Completeness check and desk review of the registered VCS PD /03/, validation report, monitoring plan, monitoring report, monitoring methodology, applicable tools in particular attention to the frequency of measurements, quality of metering equipment including calibration requirements, QA/QC procedures and other relevant documents.
2. On-site interviews (including follow-up interviews with project stakeholders, when deemed necessary). The on-site interviews include the following:
    - An assignment of implementation and operation of project activity with respect to validated VCS PD /03/
    - Review of information flows for generating, aggregating, and reporting the monitoring parameters.
    - Interview with relevant personnel to determine whether the operational and data collection procedures are implemented and in accordance with the monitoring plan of the validated VCS PD /03/,
    - Cross check of information and data provided in the monitoring report with purchase records or similar data sources.
    - Review of assumptions made in calculating the emission reductions (if any).
    - Implementation of QA/QC procedure in-line with the registered VCS PD /03/and methodology requirements.
3. Resolution of outstanding issues and the issuance of the final Verification report and as applicable the VCS Verification Deed of Representation.

Milestone description	Time
Date of contract signing with the VVB for verification	17-November-2023
Date of registration of the project activity	30-March-2024
Submission of requisite documents to the VVB for 1st verification	04-December-2023
Desk review	05-December-2023 till 13-December-2023
On-site audit	14-December-2023
Date of Issue of Draft Verification Report	02-January-2024
Date of Issue of Final Verification Report	05-April-2024

2.2 Document Review

During the document review, CCIPL has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of the monitoring report and the supporting documentation. This process included:

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

The monitoring report (version 1.0, dated 31-December-2023 /01/ was initially reviewed and CCIPL requested the PP to present the supporting information and documents /02/-/32/. The documents were reviewed by CCIPL. Through the process of the verification, the revised monitoring report (version 3.0, dated 19-March-2024) and the supporting documents were evaluated to confirm the actions taken by the PP to resolve the CARs and CLs issued by the verification team.

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

2.3 Interviews

The table below describes the on-site interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the project description, Monitoring report /01-b/ and any supporting documents.

Sr. no	Date	Name	Organisation	Topic	VVB Team Member(s)
1.	14-December-2023	Maingi Edwin	d.light	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility • KPT process details • Project investments • Carbon rights transfer	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu

				• Avoidance of double counting	
2.	14-December-2023	Rohit Lohia	Climate Secure	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility • Project investments • Carbon rights transfer • Avoidance of double counting	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
3.	14-December-2023	Ashutosh Tiwari	Climate Secure		
4.	14-December-2023	Rishabh Pathania	Climate Secure		
5.	14-December-2023	Leah Cheboi	d.light	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility • Project investments • Carbon rights transfer • Avoidance of double counting	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu

6.	14-December-2023	Otieno Kelvin	d.light-Quality Office	Cookstoves Quality checks and criteria before distribution	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
7.	14-December-2023	Onbati Jackson	d.Light-Warehouse manager	Cookstoves inventory and dispatch process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
8.	14-December-2023	Ngesa Catherine	d.Light-Warehouse officer	Cookstoves inventory and dispatch process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
9.	14-December-2023	Anita Kibi	d.Light-assistant call center manager	• KYC Process • End user identification criteria for selling the cookstove to the end user • Distribution process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
10.	14-December-2023	Maina Lina	d.Light-quality analyst	• KYC Process • End user identification criteria for selling the cookstove to the end user • Distribution process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
11.	14-December-2023	Justus Mwaniki	Enumerator-d.Light	Monitoring survey and KPT survey	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
12.	14-December-2023	Irene Nduku	Enumerator-d.Light	Monitoring survey and KPT survey	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
13.	14-December-2023	Gerald Wamai	Enumerator-d.Light	Monitoring survey and KPT survey	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
14.	14-December-2023	Monica Kinywa	Enumerator-d.Light	Monitoring survey and KPT survey	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
15.	14-December-2023	Nicholas Kaghai	Local Stakeholder- TSE (sales)	• KYC Process • End user identification criteria for selling the cookstove to the end user • Distribution process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
16.	14-December-2023	Joshua Ovita	Local stakeholder - TSE (Representing TSM)	• KYC Process • End user identification criteria for selling the cookstove to the end user • Distribution process	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
17.	14-Decem	Lewis Githauga	Local stakeholder -	• KYC Process	Dinesh Mane, Tanvi Nadkarni,

	ber-2023		stocks controller	• End user identification criteria for selling the cookstove to the end user • Distribution process	and Willis Okumu
18.	14-December-2023	Elizabeth Khendi ICS: 742891648	End-user	Onsite interviews (Ex-post parameters) • To check Number of project devices operating during year y (Ny,j,j) • To check the quantity of woody biomass used by project stove($B_{y=1,new,i,j,survey}$) • Project Usage survey / KPTs Interview questions, not limited to, included the following: 1. Usage of project ICS, 2. Unique serial number of ICS 3. Waiver on rights of ownership of carbon credits to PP 4. usage of baseline stove parallel to project ICS, 5. household size, 6. number of meals cooked, 7. number of people served per meal, 8. types of stove / fuel in use, 9. baseline stove being used prior to project, 10. were any KPTs conducted by PP, 11. fuel savings / time savings after project intervention,	Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
19.	14-December-2023	Petronilah Mueni Kutuku ICS: G2YTHS	End-user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
20.	14-December-2023	Florida Mukami Ngari ICS: 707303946	End-user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
21.	14-December-2023	Jackleah Wanjagi Nyaga ICS: 864665361	End-user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
22.	14-December-2023	Ngari Ngungi ICS: 716711140	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
23.	14-December-2023	Rachael Njeri Njagi ICS: F2UNA2	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu

24.	14-December-2023	Betha Wangerwe Kariuki ICS: 867882714	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
25.	30-September-2023	Gerald Kiprop ICS: 832068597	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
26.	30-September-2023	Carolyne Awuor Otieno ICS: 766967373	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
27.	30-September-2023	Helen Jepchumba Kosgei ICS: 905310461	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu
28.	30-September-2023	Joshgua Lokwalem Ekai ICS: 941163647	End user		Dinesh Mane, Tanvi Nadkarni, and Willis Okumu

Apart from the monitoring survey, VVB has also interviewed the beneficiary and confirmed the baseline cookstove (i.e. Traditional Stove / three stone fire) used prior to the implementation of the project stove. Furthermore, through document review registration certificate cum consent deed signed by the beneficiary, VVB could verify that all ICS comply with the efficiency requirement as per the applied methodology /B02/.

2.4 Site Visits

CCIPL has conducted on-site inspection on 14-December-2023, to confirm all physical features of the project activity proposed in the VCS PD /03/ are in place and that the project proponent has operated and correctly monitored all parameters of the project activity as per the PD during this monitoring period.

An on-site assessment was conducted on 14-December-2023 as a part of verification activity which involved:

1) An assessment of the implementation and operation of the project activity

2) A review of information flows for generating, aggregating, and reporting of the monitoring parameters

3) Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the MP.

4) A cross-check between information provided in the MR /01/ and data from other sources.

5) Observations of monitoring practices against the requirements of the applied monitoring methodology

6) A review of calculations and assumptions made in determining the GHG data and ERs, and

7) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters.

In line with paragraph 26 of the Sampling Standard, the verification team has applied acceptance sampling approach during on-site interviews on the sampling survey as part of verification. Due to the large number of ICS envisioned to be distributed as part of the project activity, the project participant had applied representative sampling. Sampling was conducted using stratified random sampling technique over the sampling frame, and detailed calculations are provided below as per CDM guidelines “Sampling and surveys for CDM project activities and programmes of activities” v 9.0 and option (b) on page 12 of the methodology. Further details of the sampling approach have been discussed in section 4.3 below. Monitoring surveys/06/ were conducted by the representatives of Project participant.

The verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B04/.

In compliance with paragraph 39 of the sampling standard, version 09 /B04/, acceptance sampling was carried out by the verification team. The information provided in the sampling survey data /09/, has been cross checked during the on-site interviews conducted and it has been confirmed that the sampling survey data has no discrepant records. Thus, PP’s set of records has been accepted in line with § 33 of the sampling standard, version 09 /B04/.

Detailed assessment of the PP's sampling approach and the verification team's sampling has been included in section 4.3 of this report (below).

The verification team carried out on-site interviews with representatives of PP to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS.

2.5 Resolution of Findings

The objective is to identify, discuss, and draw conclusions about any problems that may affect the project activity's ability to reduce emissions or have an impact on the recording, monitoring, and reporting of those reductions. These problems may be related to the project description, technical specifications, baseline and additionality, monitoring parameters and monitoring plans, implementation status, or operations of the project activity. Based on the desk review and site evaluation, this was carried out.

The assessment team creates and/or maintains verification procedures (internal document) that documents conformities and non-conformities, which may include the following issues:

Corrective Action Request (CAR) is raised if one of the following occurs:

- Non-compliance with the project description, applicability of monitoring methodology and its tools, additionality tools and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient.
- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient.
- Modifications to the implementation, operation, and monitoring of the registered project activity have not been sufficiently documented by the project participants.
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions.
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if: Information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

Forward Action Requests (FARs) are raised if: Information is not available during the present validation or verification process, which would need to be verified in subsequent verification or monitoring period.

07 Corrective Action Requests (CARs) and 03 Clarification Requests (CLs) were raised and have been successfully closed during the current verification.

Appendix 4 contains the raised and communicated findings with the project participants during the assessment. We could equally find in this section project participants' responses if any, and the assessment team's evaluation subsequently for any opened findings.

2.5.1 Forward Action Requests

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

One FAR was raised during the validation of this project activity which was addressed by the VVB during this verification (Please refer to Appendix 4 for further details). CCIPL has not raised any FAR during this verification.

2.6 Eligibility for Validation Activities

The project activity falls under sectoral scope 03 and the CCIPL is accredited for validation /verification of project activities under this scope. Additionally, CCIPL has not undertaken validation activities as part of the verification process.

3 VALIDATION FINDINGS

3.1 Methodology Deviations

No methodology deviation witnessed by verification team during course of this verification.

3.2 Project Description Deviations

No Project description Deviation

3.3 New Project Activity Instances in Grouped Projects

This project is not a grouped project.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 VERIFICATION FINDINGS

4.1 Project Details

The project, “D.LIGHT’S IMPROVED COOKING PROJECT IN KENYA” is registered under VERRA as a VCS project on (VCS Project ID 4223) applying the VCS methodology VMR0006 version 1.1 /B02/ “Methodology for Installation of High Efficiency Firewood Cookstoves”.

The project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA", is a large project, which employs the VCS methodology; VMR0006 version 1.1 /B02/. The project involves distribution and installation of fuel-efficient improved cook stoves (ICS) in Kenya that improve fuel combustion and heat transfer, resulting in reduced fuel consumption and lower indoor air pollution levels, including decreased smoke, black soot, and particulate matter emissions. This also reduces greenhouse gas emissions associated with non-renewable biomass usage. In the target country, traditional cooking methods contribute to inefficient burning of unsustainable non-renewable biomass (NRB) fuel. Additionally, using solid biomass fuels (such as wood) in inefficient traditional stoves or open fires releases significant amounts of particulate matter (PM), leading to dangerous indoor air pollution levels (IAP). In the absence of the project activity, beneficiaries would continue using inefficient stoves, exacerbating environmental and health challenges. The project involves replacing outdated stoves with improved ICSs while maintaining the same fuel source.

The verification team was able to verify that authorities and responsibilities for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring period from 08-September-2022 to 07-September-2023. This is documented in a written form and is followed as described in the MR template. It was observed that the data is consistent between the final MR and ER sheets. The status of the project activity was verified through onsite audit and confirmed that the project is fully operational. The monitoring plan described in section 4.3 of the MR /01/ was confirmed to be correct. All the parameters of the monitoring plan are monitored using appropriate system, the details of which, as mentioned in the section 4.3 of the MR /01/, have been confirmed through the onsite visit and the technical specifications /13/ submitted by the PP.

The verification team has interviewed the respective personnel involved in the monitoring of the parameters that are used to determine the emission reductions of the project. It is confirmed based on the interviews and review of roles and responsibilities as per organizational structure, that the team is competent enough to monitor the parameters as described in the monitoring plan. The verification team concludes that management and operational system of the project is implemented and operated well. The organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities are found to be satisfactory to the verification team including the methods used for measuring, recording, storing, aggregating, collating, and reporting the data on monitored parameters. The procedures used for handling including frequency of measurement and QA/QC procedures are also verified by verification team and found that the required confidence level or precision has been met. Thus, it ensures the quality of data which is required in calculating the emission reductions.

During the verification, all relevant monitoring parameters of the registered monitoring plan have been verified regarding the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. All monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. It is confirmed that the monitoring mechanism is effective and reliable.

The verification team confirms that the monitoring plan is in accordance with applied the methodology All data are collected and archived in accordance with the applied methodologies and included in the monitoring plan. This was confirmed based on the on-site interviews with representatives of PP and upon further review of the relevant records. All the ex-ante parameters which are used in the calculation of emission reductions are consistent with the VCS PD. It is confirmed that ex-ante parameters mentioned in section 4.1 of the MR/01/ are in line with the parameters mentioned in section 5.1 of the VCS PD. All the ex-post parameters have been monitored as per the monitoring plan and presented in section 4.2 of the MR/01/.

The project has disseminated 28,551 number of fuel-efficient ICS through 1 year. Total number of ICS operational during this monitoring period is 28,016 number. The Ecoachar and Jikokoa stove will reduce the amount of non-renewable biomass used for cooking. PP has considered each ICS distributed as a project. The start date for the project is 08-Sep-2022 /04/ which is the date of installation/registration of the first stove in the project. The PP has maintained an ICS distribution database /07/ collecting requisite distribution data (including beneficiary information) including the dates of distribution of ICS.

The verification team confirms that there is no change of physical features from the registered VCS PD, which may impact the emission reductions of the project activity. This has been confirmed based on the review of sales records /07/, conducting interviews with representatives of PP as well as by carrying out on-site interviews with end users. Thus, the verification team concludes that all the physical features of the VCS project in the registered VCS PD/03/ are in place.

The verification team confirms that during the current monitoring period (08-September-2022 to 07-September-2023) the VCS project has disseminated 28,551 units of ICS. This was confirmed based on the review of sales records /07/ and further based on interviews with representatives of PP through on-site interviews. The envisaged ex ante estimation of emission reductions for this monitoring period (i.e. 08-September-2022 to 07-September-2023) was 433,651 tCO_2e and the total GHG emission reductions achieved from the Project activity instances are 38,422 CO2e for this monitoring period from 08-September-2022 to 07-September-2023.

During the on-site interviews for verification, QA/QC procedures were identified which demonstrate that: operational and management system of the project is in place; data were centralized; monitoring data were crosscheck with the sales records stored and confirmation that all operational staff were trained before taking up positions. The verification team thus confirmed that the monitoring of the project activity has been implemented in accordance with the monitoring plan in the registered VCS PD.

The registered VCS PD/03/ clearly describes the monitoring and responsibility of monitoring is done by PP. During the on-site interviews, monitoring, data collection and reporting procedures were confirmed with the relevant staff and through document review of samples of all relevant records.

The verification team confirms that the monitoring plan is in accordance with VCS approved methodologies VMR0006 version 1.1 /B02/. All data are collected and archived in accordance with the applied methodologies and included in the monitoring plan. This was confirmed based on the on-site interviews with representatives of PP and upon further review of samples of all relevant records.

All the ex-ante parameters which are used in the calculation of emission reductions are consistent with the VCS PD /03/. It is confirmed that ex-ante parameters mentioned in section 4.1 of the MR /01/ are in line with the parameters mentioned in section 5.1 of the VCS PD /03/. All the ex-post parameters have been monitored as per the monitoring plan and presented in section 4.2 of the MR /01/ and mentioned in section 5.2 of the VCS PD /03/

<table>
<tr><th>Item</th><th>Evidence gathering activities, evidence checked, and assessment conclusion:</th></tr>
<tr><td>Audit history</td><td>
<table>
<tr><th>Audit type</th><th>Period</th><th>Program</th><th>Validation /verification body name</th><th>Number of years</th></tr>
<tr><td>Validation</td><td>15-April-2023</td><td>VCS</td><td>Carbon Check India Private Limited</td><td>--</td></tr>
<tr><td>Verification</td><td>(08-September-2022 to 07-September-2023)</td><td>VCS</td><td>Carbon Check India Private Limited</td><td>One year</td></tr>
</table>
</td></tr>
<tr><td>Double counting and participation under other GHG programs</td><td>

The monitoring system is implemented and fully functional to generate emission reductions without any double counting. A project is not receiving or seeking credit for reductions and removals from a project activity under another GHG program. PP informed the manufacturers of the project stoves and the implementation partner that the Verified Carbon Units (VCUs) may be issued for the greenhouse gas emission reductions and removals under this project. For these VCUs, the PP will be claiming carbon credits under VERRA. PP will further apprise that the ownership of these credits lies exclusively with d.light to avoid any potential risk of double claiming of Scope 3 emissions. The verification team by means of document review /07/, /14/, /15/ and /16/ and onsite visit interviews confirms that the 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.)/07/, /14/, /15/, /16/. PP has provided end user agreement /15/, /16/ which has been reviewed by the verification team and found to be acceptable and confirms that the systems included in the project shall not be used for claiming credits under other GHG programs to avoid any double counting. Furthermore, based on a review of d.light's project database/07/ as well as web-research of carbon registries

</td></tr>
</table>

	(CDM, GS, VCS), provided agreements with the project owner and distributors/producers and unique identification (serial number/logo) system/14/ on the ICS, verification team confirms that there are no other VCS projects in the region where the project intervenes. This has been confirmed by document review, web research and also during on site visit where no other ICS registered under any other GHG program were observed. As a result, it can be confirmed that the project boundary is clearly defined, and the technologies counted in the project are not included in another voluntary or regulatory market or project activity, hence it is assuredly avoiding double counting. • The project is not registered or seeking registration under any other GHG programs. • The project has not been rejected by another GHG program
No double claiming with emissions trading programs or binding emission limits	• The project emission reductions and removals are not included in any emissions trading program or binding emission limit. The same is verified by verification team as explained above.
No double claiming with other forms of environmental credit	• The project activity has not sought, received, or is not planning to receive credit from another GHG-related environmental credit system as explained above. /16/
Supply chain (scope 3) emissions double claiming	• The project activities does not affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain. This is because since the project's GHG emissions reductions or removals do not occur within a supply chain but at the project beneficiary location. Also, the project beneficiary(ies) has assigned unconditional rights to the ownership of credits to d.light, precluding anyone other than d.light to claim concerned credits.
Sustainable development contributions	• The project has implemented the activities that result in the SD contributions described in section 1.12 of the monitoring report.
Additional information relevant to the project	The response should include: • No commercially sensitive information that has been excluded from the public versions of project documents conforms with the VCS Program.

4.2 Safeguards and Stakeholder Engagement

4.2.1 Stakeholder Identification

The stakeholder makeup has not been changed since validation. Hence, not applicable.

4.2.2 Stakeholder Consultation and Ongoing Communication

No stakeholder consultation was carried out during this monitoring period. However, section 2.2 of the registered PD and section 3.2.2 of corresponding validation report contains local stakeholder consultation performed and its endorsement during baseline surveys. The PP has established a grievance mechanism / ongoing communication for stakeholders to raise any concerns about potential negative impacts of the project during project implementation. The ICS beneficiary (and other stakeholders) are informed about the grievance register which is maintained at the local office locations of the PP. Additionally, local people employed as field staff, and resource persons also serve as medium to escalate grievances received from the project beneficiaries in their respective zones to PP. Any relevant concern received during the operation of project activity will be addressed.

4.2.3 Free, Prior, and Informed Consent

This is not required for ICS projects. Hence, not applicable.

4.2.4 Grievance Redress Procedure

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Grievance received and steps taken to resolve the grievance including the outcomes of the resolution	No grievance registered by the ICS beneficiary(ies) (and other stakeholders) during the current monitoring period. The same is verified by verification team through grievance register maintained local office locations of the PP /18/.
Grievance redress procedure	PP maintains a grievance register at the local office locations /18/. The end users/stakeholders are free to voice grievances regarding the project activity in the grievance register or on the company's website or company's phone number. The same process is communicated to all stakeholders. Same has been checked during onsite visit by the verification team. This procedure is deemed sufficient and acceptable to the VVB.

4.2.5 Public Comments

No public comments received during the public comment period (04/04/2023-04/05/2023).

4.2.6 Risks to Local Stakeholders and the Environment

In the table below, describe i) the evidence gathering activities, ii) the evidence checked, and iii) provide a conclusion on the assessment of project's risk assessment and mitigation measures, including where no risk has been identified by the project proponent. Where no risk has been identified by the project proponent, provide a conclusion on the assessment confirming no risk has been identified.

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Risks to stakeholder participation	No risks identified in the project related to stakeholder participation.
Working conditions	No risks identified in the project related to working condition.

Safety of women and girls	No risks identified in the project related to safety of women and girls.
Safety of minority and marginalized groups, including children	No risks identified in the project related to safety of minority and marginalized groups, including children.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risks identified in the project related to pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials) generated due to operation of project. Moreover, the smoke generated during baseline stoves is reduced by the project stoves, hence achieving the SDG 3.

4.2.7 Respect for Human Rights and Equity

4.2.7.1 Labor and Work

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Discrimination and sexual harassment	The project activity does not endorse any form of discrimination based on gender, sexual orientation, religion, race etc. PP has the multiple policies (such as Safeguarding Policy, Employee Handbook, HR policy, Inclusivity, Non-Discrimination, and Harassment Policy)/26/-/32/ to make sure that no discrimination based on gender, race, religion, sexual orientation, or other habits) or sexual harassment with respect to the project /22/. The same is verified by verification team and found to be sufficient to avoid Discrimination and sexual harassment during operation of project activity
Management experience	No new entities have been included in the design or implementation of the project.
Gender equity in labor and work	In this project D. Light was not found to be discriminating based on gender and promotes equal work for equal pay. The average wages / remunerations paid as per prescribed by the state / local government regulations. The same records/documents /23/ are verified by the verification team and found to be in line the requirement of the host country.
Human trafficking, forced labor, and child labor	The project does not involve any child labour, the exploitation of human trafficking victims, or the utilization of forced and child labour. PP has multiple policies (such as Child Labor Policy, Code of Business Ethics Policy, Anti-Corruption policy) /30/, /31/, /32/ to make sure that no unethical work takes place. The same /22/ documents are verified by verification team and found to be applied appropriately in organization of PP.

4.2.7.2 Human Rights

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Human rights	The project activity involves distribution of improved cookstoves to individual households and in the context of this project, there are no legal or customary tenure/access rights to territories and resources, including collective and conflicting rights held by stakeholders, local communities (LCs), or customary rights holders. Hence, not applicable

4.2.7.3 Indigenous Peoples and Cultural Heritage

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Preservation and protection of cultural heritage	The ICSs are installed in the kitchen of beneficiary households. The ICSs do not interfere with any sites, structures, or objects with historical, cultural, artistic, traditional, or religious values or intangible forms of culture. Hence, not applicable.

4.2.7.4 Property Rights

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Disputes over rights to territories and resources	The project activity involves distribution of improved cookstoves to individual households and communities and it does not require acquisition of property. It is a completely voluntary activity and households participating are free to choose whether they take part or not. The project lead to any kind of disputes over territories or resources. Hence, not applicable.
Respect for property rights	In accordance with the same reasons as stated above, the project activity does not impact property rights. Hence, not applicable.

4.2.7.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Summary of the benefit sharing plan	The project activity involves distribution of improved cookstoves to individual households and communities and the project activity does not impact property rights, usage, or resources. Hence not applicable.
Benefit sharing during the monitoring period	

4.2.8 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion

Impacts on biodiversity and ecosystems	The project activity involves distribution of improved cookstoves to individual households and communities. The project does not have negative impacts on biodiversity and ecosystems. The project is not having any risks to ecosystems due to project activities and implement measures. Hence, not applicable.
Soil degradation and soil erosion	The project activity involves distribution of improved cookstoves to individual households and communities. Therefore, the project does not have any negative impacts such as soil degradation or soil erosion. The project is not having any risks in this regard due to project activities and implement measures. Hence, not applicable.
Water consumption and stress	The project activity involves distribution of improved cookstoves to individual households and communities. The project does not have negative impacts on water consumption neither will it lead to any water related stress. Hence, not applicable.
Usage of fertilizers	The project activity involves distribution of improved cookstoves to individual households and communities. Therefore, the project does not involve usage of any fertilizers. The project is not having any risks in terms of fertilizer usage due to project activities and implement measures. Hence, not applicable.

4.2.8.1 Rare, Threatened, and Endangered species

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Species or habitat	The project activity involves distribution of improved cookstoves to individual households and communities. The project *does* not involve any activity or implementation measure that may impact any rare, threatened, or endangered species. Hence, not applicable.

4.2.8.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
NA	The project activity involves distribution of improved cookstoves to individual households and communities. The project does not include planting or introduction of any new species. Hence, not applicable.

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion

NA	The project activity involves distribution of improved cookstoves to individual households and communities. The project does not involve any activity or implementation measure that will cause any existing invasives to thrive. Neither does it involve the usage of any non- natives. Hence, not applicable.

4.2.8.3 Ecosystem conversion

Item	Evidence gathering activities and evidence checked
Ecosystem conversion	The project activity involves distribution of improved cookstoves to individual households and communities. The project activities are not converting natural non-degraded ecosystems. Hence, not applicable.

4.3 Accuracy of Reduction and Removal Calculations

The equations and choices provided in the methodology as well as all other methodological tools, are correctly quoted in the Monitoring report /01/. The emission reductions of the project are calculated using the formulae mentioned in the applied methodology; VMR0006 version 1.1/B02/. The verification team reviewed the emission reduction spread sheets (ER sheet) /02/ and checked all the formulae, concluding that they are correct and in accordance with the monitoring plan of the PD and the applied monitoring methodology.

According to applied methodology VMR0006 (version 1.1) /B02/the emissions are calculated as below:

Baseline Emission : According to section 8.1 of VMR0006 version 1.1, Methodology AMS-II.G does not account for baseline emissions separately, but instead quantifies emission reductions as a function of the reduction in the amount of non- renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.
Project Emissions: According to section 8.2 of VMR0006 version 1.1, Methodology AMS-II.G does not account for project emissions separately, but instead quantifies emission reductions as a function of the reduction in the amount of non-renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.
Leakage Emissions: In accordance with methodology VMR0006 version 1.1, leakage is considered as default 0.95.

Net GHG Emission Reductions and Removals:

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

Equation (1)

Where,

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

$ER_{y,i,j)}$ = Emission reductions by improved cookstove of type i and batch j during year y in t CO_2e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times \left(EF_{wf,CO2} + EF_{wf,non\ CO2}\right) \times N_{y,i,j} \times 0.95$$

Equation (2)

Where,

$B_{y,savings,i,j}$	=	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
$NCV_{wood\ fuel}$	=	Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)
$EF_{wf,CO2}$	=	CO_2 emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO_2/TJ)
$EF_{wf,non\ CO2}$	=	Non-CO_2 emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO_2/TJ)
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

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

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

Equation (3)

Where,

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

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

Equation (5)

Where,

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

Leakage Emissions: In accordance with methodology VMR0006 version 1.1, leakage is considered as default 0.95.

Sampling approach:
As assessed in this section, emission reductions for the project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" claimed for this monitoring period are 38,422 tCO_2e and the total population of the stoves for this monitoring period (08-September-2022 to 07-September-2023) is 28,551 ICS.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS PD /03/. The PP has appropriately performed Stratified random sampling procedure, reliability levels were set at 90% confidence and 10% precision in line with the applied methodology VMR0006 version 1.1/B02/. As the VCS PD /03/ mentions the option for Stratified random sampling procedure, it is acceptable to the verification team.

The sampling surveys have been carried out by the well-trained personnel /19/. Monitoring parameters $N_{y,i,j}$ and $B_{y=1,new,i,j,survey}$ are monitored through monitoring sample surveys /06/. Monitoring of the parameters ensures compliance with the applied methodology VMR0006, version 1.1 /B02/. The verification team has checked the survey records /06/ and sample size calculation/11/. Parameter $N_{y,i,j}$ monitors the number of stoves in operation and By=1,new,i,j,survey monitors Quantity of woody biomass used by improved cookstoves .

Parameter	Description of Parameter	Sampling approach (outcome in brackets)
$N_{y,i,j}$	Number of project devices operating during year y	Visual inspection of the premises to see if ICS is operational and in use. Interview with end user if required to verify that ICS is still in use [Yes/No]
$B_{y=1,new,i,j,survey}$	Quantity of woody biomass used by improved cookstoves	Interview with end user and measurement of wood fuel used for project stove [Weight of fuel wood]

PP has applied sampling for the current monitoring period. A confidence/precision level of 90/10 has been used by the PP for all the monitoring parameters determined through applying simple random sampling. Survey has been carried out. This is in accordance with the sampling plan provided in the registered VCS PD /03/.

The sample size calculations for each of the monitoring parameters monitored through the sampling have been provided in the table below.

Monitored Parameter	Sample size	Actual Samples Surveyed (ICS)	Survey Results	Precision achieved
Number of stoves in operation ($N_{y,i,j}$)	100	108	28,016 number (out of 28,551 distributed)	0.13%
Quantity of woody biomass used by improved cookstoves ($_{By=1,new,i,j,survey}$)	5	20	0.2528 [1] tonnes of charcoal/device/year	9.2%

The sample size calculation provided by PP is checked by the verification team and deemed acceptable in line with Standard – "Sampling and Surveys for CDM project activities and programmes of activities" (Version 09.0). Stratified random sampling was applied by the PP for selection of the monitoring samples with 90/10 confidence/precision for determining the sampling for all the parameters which is deemed acceptable as per the VCS PD /03/.

As per paragraph 25 of the Sampling Standard, version 09 /B04/, the verification team has to verify whether the project participants entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:
(a) Whether the required confidence/precision has been met;
(b) Whether the selected sample was representative of the population.

In accordance with paragraph 26, VVB has applied a sampling approach for on-site visits as a part of the verification. As per paragraph 28, VVB has applied acceptance sampling as described in the steps indicated in paragraphs 29–33 as part of verification activities, as described below:
During verification, the verification team applied acceptance sampling to determine the operational status of the ICS in the households. As per §39 of the sampling standard:
A DOE may select a different sample size than the one indicated in paragraph 32 above, either by choosing a different value for the consumer risk and producer risk (e.g. 20 per cent for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply:
(a) The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 t CO2 eq.;
(b) The security conditions in the project region prevents inspection of many samples (e.g. conflict zones); or
(c) The project activity or the PoA is located in a least developed country or a host Party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified.

Since, the annual GHG emissions reductions of the project activity is equal to 38,422 tCO_2 eq, which is less than 100,000 tCO_2 eq. A sample size of 11 cookstove was chosen using §39 (a) and table 2 of the sampling standard, version 09 /B04/. A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%, producer risk 10% and consumer risk 10%. Acceptance number (c) thus determined for the sample is 0. 11 samples were randomly chosen by the VVB out of the PP's samples. Accordingly, VVB interviewed 11 households. However, since each household were distributed with one project ICS unit, so VVB checked and verified particular ICS at the premises of each household interviewed during the onsite visit samples from

[1] For ER calculations,the value for 'By=1,new,i,survey' reported has been multiplied with the 'Charcoal to Wood conversion factor'of 6 in line with the applied methodology.

monitoring survey. It was observed that for each of the 11 samples visited, the project ICS was found to be operational and this matched with the PP's monitoring survey records and hence no discrepant records were observed with the MR /01/ and ER sheet /02/ and thus c=0. Thus, PP's set of records has been accepted in line with § 33 of the sampling standard, version 09.0/B04/. The verification team has cross verified these sample documents.

Table 2:- Parameter selected during Monitoring.

Parameter	How the PP conducted sampling surveys (to obtain the project participants' or the coordinating/managing entities' records)	How the VVB could obtain records for verification	Criteria for deciding what ultimately constitutes a discrepancy
Number of project devices operating during year y ($N_{y,j,j}$)	Sampling based survey (questionnaire survey/interviews) Visual inspection of the premises to see if ICS is operational and in use. Interview with end user if required to verify that ICS is still in use [Yes/No]	Cross-check of a sample of project participants' samples (questionnaire operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from the on-site interviews. • Baseline scenario of the household • Enquire/observe the pre-project/baseline stove/s and its operation during the project scenario.	VVB results, accounting for duly justified differences.
Quantity of woody biomass used by improved cookstoves (By=1,new,i,j,survey)	Sampling based survey (questionnaire survey/interviews) Interview with end user and estimate the daily consumption of woody biomass of ICS (Daily consumption of woody biomass)	Cross-check of a sample of project participants' samples (questionnaire operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from the on-site interviews. • Checking competence of the personnel performing measurements during monitoring survey through on-site demonstration of measurement method at sample households.	VVB results, accounting for duly justified differences.

Life Span	Manufacturer's specification	Technical specifications sheets of the Jikokoa and Ecoachar Stoves by Manufacturer's /13/	VVB results, accounting for duly justified differences.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS PD /03/. The PP has appropriately performed Stratified random Sampling procedure in line with the applied methodology. As the VCS PD /03/ mentions the option for Stratified random Sampling procedure, it is acceptable to the verification team.

The necessary confidence / precision of 90/10 each of the parameters are met. This has been cross verified by the verification team from the supporting documents submitted.
Emission reductions have been calculated in accordance with the applied methodology VMR0006 version 1.1 /B02/, and VCS PD /03/. The PP has used monitored data and ex-ante fixed data including default values as mandated/permitted by the applied methodology. The values used for calculation of GHG emission reductions have been thoroughly checked by the verification team and was found appropriate and correct.

Table 3:- Parameters Determined ex-ante:
The following parameters are determined ex-ante and mentioned in section 5.1 of the VCS PD/03/

Parameter	Unit	Value	Assessment
$f_{NRB,y}$	Fraction	0.7875	-Fixed ex-ante -The value was calculated in line with the applicable methodological CDM Tool 30, version 4.0 and is in accordance with the registered PD.
$NCV_{wood\ fuel}$	TJ/tonne	0.0156	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction have been used.
$EF_{wf,CO2}$	tCO_2/TJ	112	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion have been used.
$EF_{wf,non\ CO2}$	tCO_2/TJ	26.23	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion have been used.

<table>
<tr><td>η_{old}</td><td>Fraction</td><td>0.20</td><td>- Fixed ex-ante
- Default values from the methodology.
All ICS distributed in this crediting period use charcoal as fuel, thus a value of 0.20 is applied.</td></tr>
<tr><td>η_p</td><td>Fraction</td><td><table><tr><td>ICS Model</td><td>Manufacturer Efficiency</td></tr><tr><td>Jikokoa</td><td>53.7%</td></tr><tr><td>Ecoa Char</td><td>53.7%</td></tr></table></td><td>- Fixed ex-ante
-Manufacturers specification.</td></tr>
<tr><td>$\eta_{new,i,j}$</td><td>Percentage</td><td>As per equation (5) above in line with the monitoring methodology /B02/ the applicable efficiency of the distributed ICS models (for year 1) has been used in Ex-post ER calculations as follows:<table><tr><td>$\eta_{new,i,j}$</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>$\eta_{new,\ jikokoa}$</td><td>50.48</td><td>49.97</td><td>49.47</td><td>48.98</td><td>48.49</td><td>48.00</td><td>47.52</td></tr><tr><td>$\eta_{new,\ ecoachar}$</td><td>50.48</td><td>49.97</td><td>49.47</td><td>48.98</td><td>48.49</td><td>48.00</td><td>47.52</td></tr></table></td><td>- Fixed ex-ante
- As per equation (5) above</td></tr>
<tr><td>DF_n</td><td>Fraction</td><td>0.99</td><td>- Fixed ex-ante
- Default value of monitoring methodology</td></tr>
</table>

The spread sheet submitted by the PP clearly and transparently mentions values of the data parameters used for calculation of emission reductions. The input values have been verified from reliable and authentic sources including monitoring records /06/, installation database /07/, Monitoring Report /01/, and applied methodology /B02/. The emission reductions calculated were compared with the emission reduction spread sheet /02/ and found to be correct. No significant reporting risks have been identified for the data reported.

Details of ICS

ICS Model	Jikokoa	Ecoachar
Manufacturer	Burn	Burn
Thermal Efficiency	53.7%	53.7%
Estimate Life	Up to 7 years	Up to 7 years
Fixed / portable	Portable	Portable
Grate / Chimney	Grate	Grate
Fuel used	Charcoal	Charcoal

The details of monitoring parameters used for calculation of emission reductions are provided below:

Table 4:- Parameters monitored ex-post

Monitoring Parameter Requirement	Assessment/ Observation by the VVB

Data / Parameter: (as in monitoring plan of VCS PD):	Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)
Measuring frequency/Time Interval:	At least once every two years
Reporting frequency:	At least once every two years
Reported value:	28,016
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from monitoring survey of samples /08/
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD /03/
Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with monitoring survey records /06/ and the ER sheet /02/ and has been found consistent.
How were the values in the monitoring report verified?	The data obtained from the "Installation database and monitoring survey" provides the total ICS distributed, whereas the "Usage Survey" results provides the fraction of operational ICS. The VVB has evaluated both the data sources. Calculation approach: 1) Installation database and monitoring survey under the submitted worksheet, tab "ICS Distribution Summary"- value = 28,551 The VVB performed the data integrity checks on the submitted "Installation database and monitoring survey" and confirms that there is no repetition of the end user, unique ICS number is assigned to each ICS, the end user details are unique. The interview with sampled end user confirms the end user details

	were correct. In addition, the VVB has verified the randomly selected end user agreements ceding the carbon rights to reconfirm the appropriateness of the end user database. 2) Usage Survey – Integrated in the submitted ER calculator, tab "Sample Size Cal & Results" value= 98.13%. The usage survey was performed and the results are documented under the ER calculator, tab "Monitoring Summary". The VVB confirms that the survey was accurate in terms of data gathering and mathematical modelling. The details of the enduser interviews and corresponding assessments can be referred under section 4.3 of the FVR. Hence value are derived as: Ny,i,j = 98.13% * 28,551 =28,016
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS PD):	Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j ($B_{y=1,new,i,j,survey}$)
Measuring frequency/Time Interval:	In the first year of project implementation
Reporting frequency:	In the first year of project implementation
Reported value:	0.2528 (Tonnes/device/year)[2]
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The exact calibration interval has not been provided in the registered PDD. However, since all equipment are newly purchased before the KPTs and are factory calibrated prior to use, the selected frequency represents good monitoring practice.
Details of monitoring equipment:	The number of meals in ICS cooked has been determined by KPTs conducted in Aug-Sep

[2] For ER calculations,the value for 'By=1,new,i,survey' reported has been multiplied with the 'Charcoal to Wood conversion factor'of 6 in line with the applied methodology.

<table>
<tr><td></td><td>2023 in line with the guidance provided in the PDD, and KPT protocol v3. The monitoring equipment used for conducting the KPT are weighing scale, and moisture meter. All the monitoring equipment were newly purchased at the time of use, so measurements were done with the necessary guarantees and hence deemed acceptable. The factory calibration is found to be valid covering current monitoring period.
QA/QC procedures stated in MR comply with PD and the details of equipment used for conducting WBT is as follows:
Moisture Meters
<table>
<tr><td>Brand/Model</td><td>WM-101
(Pin Type Moisture meter)</td></tr>
<tr><td>Range</td><td>0-99.9%</td></tr>
<tr><td>Number of units</td><td>13</td></tr>
<tr><td>Accuracy</td><td>+/-0.5%</td></tr>
</table>
Weighing scale
<table>
<tr><td>Brand/Model</td><td>BODYTECH
Hanging Scale</td></tr>
<tr><td>Accuracy</td><td>+/-5 grams</td></tr>
<tr><td>Weighing Capacity</td><td>50 kg</td></tr>
<tr><td>Number of units</td><td>13</td></tr>
</table>
The registered PD does not specify the minimum accuracy of the monitoring equipment (moisture meter, Weighing Scale). Verification team confirms that the accuracy of the monitoring equipment used represents good monitoring practice based on sectoral expertise.</td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?</td><td>NA</td></tr>
<tr><td>Calibration frequency /interval:
Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification</td><td>NA</td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?</td><td>The equipment used for the measurement campaign, including weighing scales and moisture meters, were newly purchased at the time of use. All measurements were conducted with the necessary guarantees to ensure accuracy and reliability.</td></tr>
</table>

Company performing the calibration(internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	The value was determined by PP by conducting project KPTs on 20 households out of the monitoring survey samples. For fuel measurement campaign, the sample size was determined by the PP as per CDM Standard v 9.0 and KPT protocol v3.0 provided by clean cooking alliance. VVB confirmed the KPT records during the on site visit. All the raw data forms for the KPT carried out for this parameter were checked by the verification team/11/. Verification team has checked sampled 11 project households in which KPT were carried out for this parameter and found that KPT was carried was properly for these households. Therefore, the VVB finds the value appropriate.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data from monitoring survey /06/ and reporting of emission reductions and all necessary QA/QC processes are in place. The data has been cross-checked with the KPT records documents. For the number of meals parameter, KPT have been performed and this has been checked by the verification team with the related spreadsheets. Furthermore, the verification team has cross checked all the raw data input records in the KPT calculation spread sheets including the calculation procedure for the sampled households and found them to be correct in line with KPT protocol V3. All the raw data forms for the KPT carried out for this parameter were checked by the verification team. Verification team has checked sampled 11 project households in which KPT were carried out for this parameter and found that KPT was carried was properly for these households.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS PD):	The operating lifetime of the project device. (Life Span)
Measuring frequency/Time Interval:	Once at the time of project stove installation
Reporting frequency:	Once at the time of project stove installation
Reported value:	7
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from Manufacturer specification /13/
Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS PD /03/
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	The value in the MR was confirmed with the manufacturer specifications.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data from monitoring survey /06/ and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered VCS PD /03/. The total number of emission reductions for the monitoring period (08-September-2022 to 07-September-2023) is 38,422 tCO_2e.

Table 5: Emission reductions claimed in this monitoring period

Year	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions (tCO_2e)
2022 (08-Sep -2022 to 31-December-2022)	N/A	N/A	N/A	964
2023 (1-January - 2023 to 07-Sep-2023)	N/A	N/A	N/A	37,458
Total	N/A	N/A	N/A	**38,422**

Table 6: Comparison of Ex-ante and achieved emission reductions and removal s (ERR) values

Monitoring period days: 08-Sep-2022 to 07-Sep-2023

No. of days : 365

Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
433,651	**38,422**	**91.14% lower**	The primary reason for lower VCUs in the current monitoring period attributed to lower ICS distribution than envisaged ex-ante

The verification team has checked and confirmed the calculations in the spreadsheet and found /02/ to be accurate. The monitoring report is supported by emission reduction spreadsheet. The consistency and formula were verified and found to be accurate. The comparison of Ex-ante and Ex-Post has been provided by the PP in the section 5.4 of the MR/01/, and it clearly states that the primary reason for achieved emission reductions being lower than the ex- ante emission reductions in the monitoring period is attributed to lower ICS distribution than envisaged ex-ante. The stoves have different number of operational days as per their installation dates. This has been also checked during the onsite visit by the verification team, Hence the remark made by PP is deemed appropriate.

4.4 Quality of Evidence to Determine Reductions and Removals

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

When assessing the audit trails, CCIPL also examined:

1) Whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
2) The source and nature of the evidence

3) If comparable information was available from sources other than that used in the monitoring report, CCIPL cross-checked the monitoring report against the other sources to confirm that the stated figures were correct. The sources and the data referenced are shown in Appendix 1.1 below.

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

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

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

4.5 Non-Permanence Risk Analysis

Not applicable since this project is non-AFOLU project.

5 VERIFICATION OPINION

5.1 Verification Summary

The Project Participant, d.light design ltd, has commissioned the VVB, Carbon Check (India) Private Ltd. to perform the 1st periodic verification of the VCS Project Activity "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" for the period 08-September-2022 to 07-September-2023 (both days included). This report summarizes the findings of the verification of the project, performed based on VCS criteria, as well as criteria given to provide for consistent project operations, monitoring, and reporting.

The project participants of the project are responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the monitoring report.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

Based on documented evidence and corroborated by an on-site assessment, CCIPL confirms that:

- the project has been implemented and operated as per the design document.
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS requirements.
- the monitoring is in place as per the applied baseline and monitoring methodology /B02/.

It is CCIPL's opinion that the GHG emission reduction stated in the monitoring report version 3.0 of 19/03/2024 for the project "D.LIGHT'S IMPROVED COOKING PROJECT IN KENYA" VCS 4223 for the period from 08-September-2022 to 07-September-2023 (both days included) are fairly stated. The GHG emission reductions were calculated correctly based on the approved monitoring methodology VMR0006, version 1.1 and the monitoring plan contained in the MR, version 3.0 dated 19/03/2024 and was found to be 38,422 tCO_2 eq.

The verification team assigned by Carbon Check (India) Private Ltd concludes that the project activity as described in the VCS PD /03/ and the Monitoring report /01/, meets all relevant requirements of VCS and declares that the verification was conducted in accordance with ISO 14064-3: 2019.

5.2 Verification Conclusion

Carbon Check (India) Private Ltd concludes the verification with a positive opinion that the VCS Project Activity "D. LIGHT'S IMPROVED COOKING PROJECT IN KENYA" as described in the VCS MR (version 3.0, dated 19/03/2024) /01/, meets all the applicable VCS requirements, including those specified in the Project Standard, relevant methodology, tools and guidelines.
The selected baseline and monitoring methodology /B02/ (VMR0006, Version 1.1) is applicable to the project and correctly applied. VVB confirms that the project has been implemented in accordance with the Monitoring report /01/.
Verification period: From [08-September-2022] to [07-September-2023]
Verified GHG emission reductions and carbon dioxide removals in the above verification period:

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Reduction VCUs (tCO_2e)	Removal VCUs (tCO_2e)	Total VCUs (tCO_2e)
08-Sep-2022 to 31-Dec-2022	0	0	0	964	0	964
01-Jan-2023 to 07-Sep-2023	0	0	0	37,458	0	37,458
Total	0	0	0	**38,422**	0	**38,422**

VVB is of the opinion that the project has been implemented in accordance with the project description, the MP complies with the approved monitoring methodology, the monitoring complies with the MP and the monitored data and calculation of ERs are assessed and confirmed as correct. Therefore, CCIPL hereby certifies, and requests the issuance of, the reported ERs during the monitoring period of 08-September-2022 to 07-September-2023 amounting to 38,422 tCO_2e to the VCS Registry.

5.3 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
08-Sep-2022 to 31-Dec-2022	136,630	964	99.29% lower	The primary reason for lower VCUs in the current monitoring period attributed to lower ICS distribution than envisaged ex-ante
01-Jan-2023 to	297,021	37,458	87.39% lower	

07-Sep-2023				
Total	**433,651**	**38,422**	**91.14% lower**	

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

No Commercially sensitive information provided by the PP during this monitoring period.

APPENDIX 1.1: DOCUMENTS REFERENCED

Sr. no.	Document
/01/	• Monitoring report (version 1.0 dated 31/12/2023) • Monitoring report (version 3.0 dated 19/03/2024)
/02/	• Ex-post ER calculation spreadsheet for first MP ver 01 • Ex-post ER calculation spreadsheet for first MP ver 3.0
/03/	Registered VCS PD, ex-ante ER calculation sheet and corresponding validation report
/04/	Evidence of start date of the project
/05/	KML file including geo-coordinates of the installed project activity.
/06/	Monitoring Survey records for monitoring parameters including KPT survey
/07/	Database for cook stoves distribution/sales records for this monitoring period.
/08/	Scanned monitoring survey forms during this monitoring period.
/09/	Sampling sheet of representative sampling applied during this monitoring period.
/10/	Sample size and precision level achieved calculator for the monitoring period.
/11/	Evidence of randomness of the sample taken by the PP for the monitoring parameters.
/12/	Technical details of weighing scale and moisture meter used.
/13/	Technical specifications of the Jikokoa and Ecoachar Stoves including the life span.
/14/	Evidence for unique identification of each of the Jikokoa and Ecoachar Stoves.
/15/	Consent deed as proof of right of relinquishment of VERs from the end users of the stove.
/16/	Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program.
/17/	Evidence for literary documents taken as reference.
/18/	Grievance logbooks/registers maintained at various PP offices
/19/	Evidence for trainings conducted during this monitoring period.
/20/	Emails sent to retailers and stove manufacturers as evidence for the project and potential risk of Scope 3 emissions double claiming.
/21/	Internal audit records
/22/	Internal management system policy records and other documentation
/23/	Employment records with payment of wages records
/24/	Contract in between VVB and d.light design, ltd.
/25/	Purchase records of equipment
/26/	Safeguarding Policy, dated 01/10/2020, The Human Resources Department, d. light
/27/	Employee Handbook, dated 08/04/2019
/28/	HR policy, dated June 2022
/29/	Inclusivity, Non-Discrimination, and Harassment Policy, 12/02/2021, Human Resources, d.light
/30/	Child Labor Policy, dated September 2019, Human Resources, d.light
/31/	Code of Business Ethics Policy, dated 01/06/2016, Ethics Committee, d.light
/32/	Anti-Corruption policy, dated 01/06/2016, Finance, d.light

Background Documents

Ref no.	Referenced Documents
/B01/	VCS Requirements • VCS Standard (v4.6, dated 21-March-2024) • VCS Program Guide (v4.4, dated 29-August-2023) • VCS Validation and Verification Manual version (v3.2, dated 19-October-2016) • Registration & Issuance Process (v4.4, dated 04-October-2023)

	• VCS Program Definitions version (v4.4, dated 29-August-2023) • VCS MR template version 4.3
/B02/	Applied baseline and monitoring methodology. • VMR0006. version 1.1, "Methodology for Installation of High Efficiency Firewood Cookstoves"
/B03/	Methodological Tool CDM Tool 30 "Calculation of the fraction of non-renewable biomass" Version 04.0
/B04/	• "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0) • Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04)
/B05/	Website and links: 1. IPCC (http://www.ipcc-nggip.iges.or.jp) 2. http://cdm.unfccc.int 3. http://www.v-c-s.org
/B06/	GCC Registry: https://projects.globalcarboncouncil.com/
/B07/	Gold Standard Impact Registry: https://registry.goldstandard.org/projects?q=&page=1

APPENDIX 2: ABBREVIATIONS

BE	Baseline Emission
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd
CDM	Clean Development Mechanism
CL	Clarification Request
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
DPR	Detailed project report
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)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
MW	Mega Watt
MWh	Mega Watt Hour
NA	Not Applicable
OSV	On Site Visit
PD	Project Description
PP	Project Proponent
QC /QA	Quality control/Quality assurance
TR	Technical Review
UNFCCC	United Nations Framework Convention on Verified Carbon Standard Climate Change
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit
VVB	Validation Verification Body
VVM	Validation and Verification Manual
VVS	Validation and Verification Standard

APPENDIX 3: CERTIFICATES OF COMPTENCE

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Dinesh Mane

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
☐ CCB Expert	☐ Legal Expert	☒ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG+	☒ Social no-harm(S+)	☒ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

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

Issue Date
5th December 2023

Expiry Date
31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022[1]	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function
Jan 2023	Addition in function as Financial expert

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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

Carbon Check (India) Private Limited

Certificate of Competency

Willis Austine Ochieng Okumu

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 Kenya		

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

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Swapnil Thanekar

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
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG+	☐ Social no-harm(S+)	☐ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

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

Issue Date

10th January 2024

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
Jan 2024	Initial Adoption

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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

APPENDIX 4: FINDINGS LOG

Table 1. FARs from validation

Finding	CL 01		
Classification	☐ CAR	☐ CL	☒ FAR
Description of finding *(VVB)*	The verifying VVB shall check in the 1st verification that ICS distributions subsequent to project registration date are also subsidized.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	PP has provided necessary documents and records related to it to the verifying VVB during the 1st verification.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	During on-site visit, VVB has confirmed that the ICS were distributed at subsidized cost by the means of on-site interviews and checking the end-user carbon waivers / sales receipts. Hence, the finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Table 1. CLs from this verification

Finding	CL 01		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *(VVB)*	Under section 4.1 of the MR in parameter "$\eta_{new,i,j}$" in value applied row PP has mentioned *"As per equation (5) above the…"*. However, no equation provided above. PP needs to clarify the same.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The reference for equation 5 in parameter "$\eta_{new,i,j}$" under section 4.1 of the revised MR has now been corrected.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed section 4.1 of the revised MR and confirms that the change has been made as requested. Hence, the finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CL 02		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *(VVB)*	PP is requested to clarify whether any non-conformities identified during internal audit carried out to ensure the maintenance of high-quality standards in section 4.3 of the MR as required by VCS MR template requirements V 4.3.		

Finding	CL 02
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	PP confirms that no material non-conformities were identified during the internal audit conducted. The same has been updated in the section 4.3 of the revised MR, aligning with the VCS MR template requirements V 4.3.
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the changes made in section 4.3 of the latest version of the MR and confirms that it aligns with the template requirements. Further the VVB also reviewed the internal audit records to confirm the same. Hence, the finding is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 03		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *(VVB)*	For the monitoring year 2023 ICS distribution value is not found to be consistent in *sheet "Sample Size Cal & Results" and " ICS Distribution Summary"* sheet of ER spreadsheet. Also it is not consistent in the MR section 4.3 screenshots. PP needs to clarify the same.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	For the monitoring year 2023, the inconsistency in the ICS distribution value has been addressed. The values are now consistent in both the "Sample Size Cal & Results" sheet and the "ICS Distribution Summary" sheet of the ER spreadsheet. Additionally, the discrepancies in the MR section 4.3 screenshots have been rectified, and the updated screenshots reflecting the accurate ICS distribution values have been provided.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the changes made in the updated versions of the ER spreadsheet and the MR. The values has been updated from 25247 to 26730 in the tab “Sample size Cal & Results”, as confirmed from the Sales Database. The inconsistency has been resolved and the changes have been made as requested. Hence, the finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Table 2. CARs from this Project Verification

Finding	CAR 01		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *(VVB)*	Project activity type is not mentioned in section 1.3 of MR in line with VCS MR template requirements V 4.3.		

Finding	CAR 01
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	Section 1.3 of the MR has been revised to add "Project activity type" in line with the VCS MR template requirements V 4.3.
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the latest version of the MR and the project activity type has been added as requested. Hence, the finding is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 02		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *(VVB)*	PP is requested to confirm, regarding areas outside the project area that are predicted to be impacted by the project, in section 2.1.1 of MR under row "Location of stakeholders" as required by VCS MR template requirements V 4.3.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The impact of the project ICSs are deemed localized and hence areas outside the project area are not predicted to be impacted by the project. Further as specified in the PD, a comprehensive stakeholder consultation has already been done at the registration stage of the project. Since the consultation, there has been no change in the stakeholder makeup hence identification of stakeholders again is not needed.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the updated version of the MR and the change has been made as requested. Hence, finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CAR 03		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	CAR 03
Description of finding *(VVB)*	PP is not justified the reason for the monitoring results communication to local stakeholders is not applicable during verification in row "communication of monitored results" under section 2.1.2: of MR as required by VCS MR template requirements V 4.3.
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The results of the monitoring are presented on the social media accounts of PP as a mode of ongoing communication with stakeholders. The MR has been revised to state the same.
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	The details provided by the PP have been reviewed and found to be sufficient. Hence, the finding is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 04		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *(VVB)*	The unit for the values needs to be mentioned by PP in table of section 3.1 of MR.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The table presented in section 3.1 of the MR outlines the quantity of ICS distributed at the end of the monitoring period. The unit for the total ICS distributed is 'Number,' and this information is now provided in the table of section 3.1 of the MR.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the updated MR and the change has been made in section 3.1 as requested. Hence, finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CAR 05		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *(VVB)*	PP is requested to provide values of all sub parameters which is used to calculate the parameter "$N_{y,i,j}$" in row "Calculation method" under section 4.2 of the MR for transparency purpose.		

Finding	CAR 05
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The values for all sub-parameters used in calculating the parameter "Ny,i,j" within the "Calculation method" row of section 4.2 in the revised MR have been provided to ensure transparency.
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	The values have been provided as requested in the revised MR. Hence, the finding is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 06		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *(VVB)*	PP is requested to provide the calibration details of all the equipment's (Weighing scale, moisture meter etc.) used for the project KPT purpose in line with monitoring parameter "$B_{y=1,new,i,survey}$" in section 4.2 of MR.		
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	The equipment used for the measurement campaign, including weighing scales and moisture meters, were newly purchased at the time of use. All measurements were conducted with the necessary guarantees to ensure accuracy and reliability. The purchased invoices along with comprehensive details of the equipment used are being attached. Further, the details of equipment used for measurement have been provided under the monitoring parameter "By=1,new,i,survey" in section 4.2 of the MR.		
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	The details provided by the PP were found to be sufficient Hence, the finding is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CAR 07		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	CAR 07
Description of finding *(VVB)*	PP is requested to provide the organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities in section 4.3 of the MR as required by VCS MR template requirements V 4.3.
Corrective Action or clarification #1 *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)*	Section 4.3 of the MR has been revised to add "organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities" in line with the VCS MR template requirements V 4.3.
VVB Assessment #1 *The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.*	VVB has reviewed the updated version of the MR and confirms that sufficient details have been provided as requested. The roles and responsibilities were also verified during the on site visit. Hence, finding is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed