Verification and certification report form for GS project activities

(Version 03.0)

BASIC INFORMATION	
Title and GS reference number of the project activity	Title: Clean Cooking Solutions for Rural Nepal GS reference no.: GS 7544
Scale of the project activity	☐ Large-scale ☒ Small-scale ☐ Micro-scale
Version number of the verification and certification report	02.1
Completion date of the verification and certification report	09/09/2023
Monitoring period number and duration of this monitoring period	4th monitoring period. 01/01/2022 to 31/01/2023 (including both days)
Version number of the monitoring report to which this report applies	Version 02, dated ; 25/07/2023
Crediting period of the project activity corresponding to this monitoring period	02/10/2018 to 01/10/2023
Project participants	Value Network Ventures Advisory Services Pte. Ltd.
Host Party	Nepal
Applied methodologies and standardized baselines	AMS-II.G: Energy efficiency measures in thermal applications of non-renewable biomass -Version 11.1
Mandatory sectoral scopes	3
Conditional sectoral scopes, if applicable	N/A
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	35,853 tCO_2e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	25,908 tCO_2e
SDG impacts	SDG 3: Good Health and Well Being SDG 7: Affordable and Clean Energy SDG 8 : Decent Work and Economic Growth SDG 13 : Climate Action (mandatory)
Name of the VVB	Carbon Check (India) Private Limited

Name, position and signature of the approver of the verification and certification report	 Vikash Kumar Singh, Compliance Officer

SECTION A. Executive summary

The objective of the project is to provide users in areas where they currently utilise inefficient traditional cookstoves that burn firewood as fuel with improved cook stoves. With the project's implementation, less firewood will be consumed in the project area, which will result in less greenhouse gas emissions into the atmosphere. Although the majority of the cookstove units will be installed in the Central Terai plains, the project is generally intended to be implemented throughout the central area of Nepal. The indo-gangetic plain, which stretches from the foothills of Siwalik in the north to the plain lands of India in the south, extends into the Central Terai region. Households in this belt of Nepal is characterized by the consumption of the solid biomass-based fuel.

The project involved distribution of 16,380 mud and metallic ICS in two Nepalese districts, Mahottari and Sarlahi between 15/08/2018 to 07/04/2019. 6,416 mud stoves locally made (Fixed type single pot rectangular/cylindrical rocket stoves) having tested efficiency of 22.10% and 9,964 mettalic stoves having manufactured with the efficiency 25.17% were distributed in the project boundary.

ICS were distributed to the households free of cost, and carbon financing will be used to reimburse the costs. The essential rights to trade the emissions reductions attributable to the project units have been obtained by the implementing agency.

This report summarises the findings of the verification of the project, performed on the basis of gold standard for global goals (GS4GG), as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of ERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Validation & Verification body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS4GG project activity during a defined monitoring period.

Certification is the written assurance by a Validation & Verification body (VVB) that, during a specific period, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the “Clean Cooking Solutions for Rural Nepal” in the host country “Nepal” for the period 01/01/2022 to 31/01/2023 (including both the days).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CCIPL’s objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project’s compliance with relevant GS and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered PDD and the approved monitoring methodology.

Verification methodology and process

The Verification team confirms the contractual relationship signed on the 24/02/2023 between Carbon Check (India) Private Ltd. (hereafter the “VVB”) and the project participant - Value Network Ventures Advisory Services Pte. Ltd. The team assigned to the verification meets the Carbon Check (India) Private Ltd internal procedures including the UNFCCC, GS requirements for the team composition and competence. CCIPL has conducted a thorough contract review as per UNFCCC, GS and Carbon Check’s procedures and requirements.

The verification has been performed as per the requirements described in the Gold Standard for the Global Goals Principles & Requirements (version 1.2) /07/, ; and GS Validation and Verification Standard (version 1.0)/11/ and constitutes the review and completion of the following steps:

- Review of the registered PDD (version 4.1; Dated: 10/02/2021) /02/, including the monitoring plan and the corresponding validation report /09/, and monitoring data;
- Desk review of the MR, emission reduction spreadsheet
- Review of the applied monitoring methodology "AMS-II..G 'Energy efficiency measures in thermal applications of non-renewable biomass" (version 11.1) /06/;
- Review of any CME and EB decisions, clarifications and guidance and the Gold Standard Secretariat;
- On-site assessment (22/06/2023 and 23/06/2023)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The verification of the emission reductions reported for the project activity 'Clean Cooking Solutions for Rural Nepal', GS Registration Reference No. 7544 for the monitoring period 01/01/2022 to 31/01/2023, with regard to the relevant GS requirements and principles for project activities. The project was validated by Carbon Check (India) Pvt Ltd (validation report CCIPL 813 of 10/02/2021) and GS registration was done on 18/09/2020. This has been conducted as per GS updated rule on Validation and Verification by same VVB (RU 2020 PR-PR v1.2) and hence a complete different team has conducted the verification process from that of validation which is inline with the GS requirements.

Conclusion:

The verification team assigned by the Validation & Verification body (VVB) concludes that the monitoring report /01/, meet all relevant requirements of the Gold Standard as per the requirements of GS4GG/B02/. The verification has been conducted in-line with the GS4GG requirements.
The following table provides the resulted emission reduction from the project as verified through the document review and on-site inspection interviews by the verification team:

Vintage	ER (tCO_2e)
01/10/2022 - 31/12/2022	23,880
01/01/2023 – 31/12/2023	2,028
Total ERs (tCO_2e)	25,908

In the opinion of the Carbon Check (India) Pvt Ltd (VVB) , the project activity was correctly implemented according to selected monitoring methodology, monitoring plan /02/and the registered PDD /02/. The monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through document review, on-site interview, the verification team confirms that the project has resulted 25,908 tCO_2e emission reductions during this 4th monitoring period. The GHG emission reductions and non-GHG parameters were correctly calculated/monitored based on the approved monitoring methodology "AMS-II.G, "Energy efficiency measures in thermal applications of non-renewable biomass", (version 11.1) /06/ and the monitoring plan contained in the registered PDD (version 4.1; Dated: 10/02/2021) /02/.

CCIPL as a validation & verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the certification statement provided in this report.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in
1.	Team Leader/ Technical Expert/ Verifier	IR	Gedam	Pallavi	CCIPL	Desk review, SV, Protocol filling, DVR/findings preparation, FVR
2	Trainee assessor	IR	Vernekar	Pradnya	CCIPL	Desk review, SV, Protocol filling, DVR/findings preparation, FVR
2.	Local Expert	EI	Karmacharya	Prasan	CCIPL	Local expert

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	C	Indumathi	CCIPL
2.	Approver	IR	Singh	Vikash Kumar	CCIPL

Pallavi Gedam: She is qualified as Team Leader in TA 1.2 and 3.1 and involved in various validations and verifications under CDM, VCS and Gold Standard (GS) projects. She has also attended Several Gold Standard DOE webinar trainings including training on GS4GG. She holds a Bachelor of Science degree in Chemistry and Master of Science degree in Environmental Science from University of Mumbai. She also a qualified Lead Auditor in ISO 14001:2015 Environmental Management System. She has been involved in number of GS validation and verification projects (as trainee Assessor) GS10898 PoA (GS 10899 to GS 10921) VPA 001 to VPA 023, GS7776 PoA (GS 10716 (VPA 01), GS 916 PoA (GS5417 (VPA 12) GS 5418 (VPA 13).

Pradnya Vernekar: Pradnya Vernekar is qualified as Trainee Assessor and involved in various validations and verifications under VCS and GS projects. She has also attended VERRA & Gold Standard DOE webinar training. She is also a qualified Lead Auditor in ISO 14001:2015 Environmental Management System. She holds a Master of Science degree in Environmental Studies from the University of Mumbai.

Prasan karmacharya: He is a local expert for Nepal and speaks the local Nepali language.

Indumathi C: She is appointed Team Leader /Technical Expert for technical area TA 1.1, 1.2,3.1,13.1 & 13.2 and Technical Reviewer. She has actively been involved in the validation and verification or internal technical review of more than 200 GHG offset projects including projects with SDG component She is having more than 13 years of experience, she is certified Energy Manager, Bureau of Energy Efficiency, Govt. of India. She carried out technical reviews for climate change mitigation projects under

different carbon credit mechanisms (UNFCCC, Gold Standard and Voluntary Carbon Standard) for various sectors like renewable energy (solar, wind, hydro, biomass), energy efficiency (cook stoves) and waste to energy (biogas).

SECTION C. Application of materiality

The threshold of materiality was evaluated based on "Guideline: Application of materiality in verifications" (version 02.0) /**15**/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 5% of 25,908 tCO_2e which is equal to 1,295 tCO_2e.

In planning the verification, verification team took cognizance of §11 and §12 of the "Guideline: Application of materiality in verifications" (version 02.0) /15/ and GS Validation and Verification Standard (version 1.0)/11/ a materiality threshold of 1,295 tCO_2e is determined for the current verification of the project activity.

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in the quantification of emissions (which may be more likely to occur if personnel are unfamiliar with, or not well trained regarding, emissions processes or data recording).	*Low*	Being 4th verification, there is less likelihood to have human error in the quantification of emissions. All data parameters are monitored through survey. Hence, the risk level is low.	During on-site interview, the audit team has interviewed the staffs of the monitoring team and checkedall records to confirm whether the monitoring plan/02/ has been well implemented. The recording of monitoring parameters used for determining the project's baseline emissions are used from third party survey report, statistically approved sampling plan and project installation database. The verification team has reviewed the whole data set of records, and crosschecked against relevant options. The verification team has interviewed the staffs of the monitoring team and check the relevant records to confirm whether the data collection procedure and QA/QC procedure have been well implemented.
2.	Undue reliance on a poorly designed information system, which may have few effective quality controls.	*Low*	The project proponent has already established a well-organized monitoring team, monitoring plan, including data collection procedure and QA/QC procedure consistent with registered monitoring plan. The main data parameter to be monitored is operation status of ICS which is done through sampling by third party. In addition, PP manages, entire project ICS database to locate and monitor as in when required. Therefore, less likelihood that poor flow of required data can be witnessed. Hence, the risk level is low.	
3.	Manual adjustment of otherwise	*N/A*	*There is no data parameter which needs*	

	automatically recorded activity levels		*to adjust manually. Therefore, no risk identified.*	

C.2. Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications /15/ and GS Validation and Verification Standard (version 1.0)/11/, a reasonable level of assurance is defined for the verification of the project by complete verification of all the monitoring records was done by the verification team and compared with the values indicated in the emission reduction spread sheet/03/.

Some inconsistencies were identified and subsequently finding was raised. These findings are detailed in Appendix 4 and they were successfully closed. Therefore, related identified mistakes as listed in findings in Appendix 4 to this report have been determined to be immaterial. And thus, it is confirmed that there are no material errors, omissions or misstatements and a reasonable level of assurance is established.

SECTION D. Means of verification

D.1. Desk/document review

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The verification was performed primarily based on the review of the Monitoring report /01/, emission reduction spreadsheet /03/ and supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

D.2. On-site inspection

On site visit was carried out by the VVB team during this monitoring period on 22/06/2023 and 23/06/2023.

The verification team has carried out on-site interviews with project proponent and end users in order to assess the information included in the monitoring report and monitoring measurement procedures adopted during the monitoring period. During the desk review, the relevant monitoring records in consistent with the PDD and corresponding validation report were checked. Third party survey report, interview with end users and sample end users and ICSs with unique ID and operational status (flame on) were checked. Details obtained are cross checked with third party survey report to cross check consistency of information. On site interview details are given below.

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Kanth	Sandip	Environment Protection Centre (EPC)	22/06/2023	Project Design, ownership details, carbon credit sharing arrangements, monitoring and reporting arrangements, QA/QC procedures, baseline	Pallavi Gedam (PG), Prasan Karmachary a (PK)

					assessment, project technology.	
2.	Choudhury	Sandeep Roy	VNV	22/06/2023	MR preration, GS requirements, Emission reduction calculations, methodology applicability, start date justification etc.	
3.	Chhetri	Suraj	Prakriti Consult Pvt. Ltd. (Nepal)	22/06/2023	Survey report, methodology, assessment, sample selection, results etc.	
4.	Kapad	Uma Devi	End-user (mud ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves • Benefits of using the stoves.	
5	Kapad	Sugandhi Devi	End-user (Mud ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves. .	Pallavi Gedam (PG), Prasan Karmacharya (PK)
6	Shah	Pabitri Devi	End-user (Mud ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves	

					Benefits of using the stoves.	
7	Shah	Samindri Devi	End-user (Mud ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
8	Shah	Shiva Kali Devi	End-user (Mud ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
9	Mukhiya	Sagani Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
10	Shah	Shikilia Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS	

					• Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
11	Mukhiya	Sanjogiya Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
12	Ray	Rajkumari Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
13	Shah	Rekha Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	

14	Mukhiya	Koshila Devi	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	
15	Shah	Ram ekbal	End-user (Metallic Rocket ICS)	22/06/2023	Information achieved on • Usage of ICS • Identification of baseline stove used • Performance satisfaction of the stoves Benefits of using the stoves.	

D.4. Sampling approach

PP's sampling approach:

PP has proposed stratified random sampling plan using 90/10 as confidence / precision. This is in line with the applied methodology /06/. The sample size for each parameter is determined following guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4) /13/. The monitoring parameters monitored through the sampling plan are:

a) Number of operating unit (ICS) under the project activity
b) Continued use of pre-project devices

CCIPL's verification team sampling approach.

As per §25 of the Standard: Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /11/, the verification team has to verify whether the project participant 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 line with §26 of the Sampling Standard (version 09.0) /13/, the verification team has applied a acceptance sampling approach for on site visit as part of verification. Since PP had applied a sampling approach, the verification team has chosen acceptance sampling for monitoring parameters in accordance with §28 of the sampling standard (version 09.0) /13/.

The following table illustrates the agenda covered during the acceptance sampling by the VVB in accordance with Table 1, § 37 of "Standard: Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /13/;

Parameter	How the PP conducted sampling surveys	How the VVB could obtain records for verification	Criteria for deciding what ultimately constitutes a discrepancy
Number of operating unit (ICS) under the project activity-proportionate parameter	Sampling based survey (questionnaire survey/interviews)	Cross-check of a sample of PP's samples (Questionnaire, operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from on-site inspection interviews • Baseline scenario • Enquire/observe whether ICS systems are in use or not?	VVB results, accounting for duly justified differences.
Continued use of pre-project devices	Sampling based survey (questionnaire survey/interviews)	Cross-check of a sample of PP's samples (Questionnaire, operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from on-site inspection interviews	VVB results, accounting for duly\ justified differences.

CCIPL has considered para 39 (a) of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0" for determining the sampling size to be visited by VVB /**13**/. In case of the current verification, the verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 09.0 /09/: Considering Acceptable Quality Level (AQL): 0.5% Unacceptable Quality Level (UQL): 20% and producer risk of 5% and consumer risk of 20% a sample size of 11 was required as per Table 2 in the referred Standard /**13**/. Acceptance number (c) thus determined for the sample size is 0. CCIPL verified 12 samples to validate the project activity. The verification team selected random samples from PP's sample list. VVB has assessed (by on-site interview, & desk review of contract document between PP & user) a total of 12 samples. The stoves details (unique serial number, date of installation, type of ICS, name of user and address) were also checked and found to be consistent with that reported in the installation database. No inconsistency was observed for any of the 12 samples with respect to onsite interviews & document review of PP & user agreement, and that reported in the stove installation database. This assessment of the selected samples was done to ascertain the implementation status of the project activity w.r.t. the stove types, serial number, location etc. of ICS.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	1	--	--

Compliance of the project implementation and operation with the registered PDD	-	--	--
Post-registration changes	--	--	--
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	1	1	--
Compliance of monitoring activities with the registered monitoring plan	2	--	--
Compliance with the calibration frequency requirements for measuring instruments	--	--	--
Assessment of data and calculation of emission reductions or net removals	1	1	--
Assessment of reported sustainable development co-benefits	1	--	--
Global stakeholder consultation	--	--	--
Others (Supporting documents)	-	--	--
Other (From last verification)	1	--	--
Total	7	2	--

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	Comparing the monitoring report /**01**/ with the monitoring report form provided by GS
Findings	CL 01 was raised during this verification regarding inconsistency in the MR with the MR form. Changes made in the MR are assessed by VVB and hence the CL is closed.
Conclusion	CCIPL confirms the following: • The compliance of the Monitoring Report /01/ (with the valid version of the applicable GS Monitoring Report template, version 1.1 also including the TEMPLATE GUIDE Monitoring Report v. 1.1 for completion of the form) /21/. • PP has used the latest version of the Monitoring Report template /21/ and assessment team confirms that the information in the latest version of the Monitoring Report /01/ has been filled according to the template filling instruction, referring the registered PDD /02/. The validation team confirms that the requirements of the Monitoring Report template /21/ filling guidelines have been appropriately met.

E.2. Remaining forward action requests from validation and/or previous verifications

No pending FARs are opened in this monitoring period.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	As verified from on-site interview and third-party survey report/16/, the audit team confirms the project implementation and operation complies with the project design document /02/. The purpose of the project is to disseminate efficient, improved cooking stoves (ICS) in Nepal. The ICS are mud-brick rocket ICS (Fixed type single pot rectangular/cylindrical rocket stoves) and metallic stoves. The

	improvement in thermal efficiency is achieved by properly designing the dimensions of the combustion chamber and ensuring effective air flow during cooking. The baseline cooking practice in Nepal is the use of the "three-stone" cooking stove, popularly known as traditional stoves using firewood. The project thus reduces greenhouse gas (GHG) emissions by replacing traditional wood-fuel three stone stoves with wood-fuel ICS. The replacement of traditional stoves by ICS improves heat transfer to the cooking utensil thereby reducing the amount of fuel (non-renewable biomass) required for cooking. A reduction in consumption of non-renewable biomass contributes towards reduction in GHG emissions into the atmosphere. Thus, ICS reduce GHG emissions through their improved thermal efficiency as compared to traditional/ baseline stoves. This project is implemented by Environment Protection Centre (EPC) wherein women self-help groups are formed who are trained to construct mud ICS at users point. Users transfer the ownership of carbon credit via end user agreement /10/. VNV is working as partner to EPC for sale of carbon credit generated from the project activity. The operational and management structured is verified from document review and on-site interview. The project involves 9,964 metallic ICS and 6,416 mud ICS implemented in two districts of Nepal namely Mahottari and Sarlahi. The implementation took place between 15/08/2018 to 07/04/2019. The metallic stoves are having a technical life of 5 years and mud stoves of 4 years. The initial tested efficiency of mud ICS is 22.10% and of metallic stoves 25.17%. During this 4th monitoring period operational status of total 16,380 ICS were taken into consideration and monitoring surveys suggested a weighted average of 92.10% operational ICS, which results in 15,087 number of stoves operating in this period. CCIPL has verified 12 households more than the required 11 samples as explained in section D.4 above to ascertain accuracy of information. CCIPL confirms the project cook-stoves are operating in all samples interviewed, each cook-stove has unique identification number which has been provided in the end user agreement/10/ and are correct as per project database. Along with the serial number, the stove model, end username, address, installation date etc. had also been noted which were found to be consistent on ground. It is noted that no changes have been observed or identified which may impact the additionality, no addition of component nor extension of technology, no addition nor removal of project sites, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; no change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology AMS-II.G version 11.1 /06/. The operational status of all project ICS, impact on identified SDGs from 01/01/2022 to 31/01/2023 has been taken into consideration.
Findings	N/A
Conclusion	The Verification team by means of on-site inspection, interviews and document review, assessed that all features in the monitoring report /01/ are in line with the registered PDD /02/ and the PP has operated the monitoring survey as per the monitoring plan in line with the PDD/02/. In conclusion the verification team confirms that; 1. The project activity is implemented as per registered PDD /02/

	2. The actual operation of the proposed GS4GG project activity is in line with the registered PDD /02/ 3. It has reviewed the registered PDD /02/ including the monitoring plan, the applied monitoring methodology and found that the final MR/01/ for this monitoring period is in line with all the above-mentioned documents. Verification team based on review of monitoring survey records/16/ and on-site interviews confirms that a robust and effective grievance addressable mechanism is in place and however there are not any grievance during the reported monitoring period. In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered PDD /02/

E.4. Post-registration changes

Not Applicable

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[1]

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Not Applicable

E.4.2. Corrections

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Not Applicable

E.4.3. Changes to the start date of the crediting period

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Not Applicable

E.4.4. Inclusion of a monitoring plan

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Not Applicable

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

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Not Applicable

E.4.6. Changes to the project design

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Not Applicable

[1] Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

E.4.7. Changes specific to afforestation and reforestation project activities

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Not Applicable

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	During this monitoring period, the validated and registered monitoring plan was found to be in accordance with the applied methodology /**02**/, **/06**/.
Findings	CAR 02 and CL 05 were raised as MR showed values and parameters inconsistent with the applied methodological regulations. Changes made in the updated MR and ER are assessed by VVB and hence the CAR and CL are closed.
Conclusion	. The verification team has checked the actual monitoring plan against the registered monitoring plan/02/ and monitoring methodology/06/. Further, the verification team has checked monitoring system by means of comparison with the information given in the monitoring plan/02/ and monitoring methodology /06/. The monitoring plan is completely in accordance with the approved methodology /06/ applied by the registered PDD/02/.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification

The following ex-ante parameters are considered in the calculation of the emission reductions:

Parameter	Value	Description/Assessment
Annual quantity of woody biomass that would have been used in the absence of the project activity **($B_{old,i,j}$)** in Tonnes /household/year	4.23 ton/household /year	The data has been derived from baseline surveys and fixed ex-ante in the registered PDD /**02**/ as required by the methodology /**04**/.
Efficiency of the system being replaced (Traditional Cooking Stoves) ($\eta_{old,i,j}$)	10%	Default value is taken as per applied methodology Table 17 /**06**/. This is consistent with registered PDD.
Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass (**$f_{NRB,y}$** (Fraction)	86%	Calculated as per procedures outlined in tool of Annex 07 of EB 102 and approved from Ministry of Environment and Forest, Nepal.
Net calorific value of the non-renewable woody biomass that is substituted **($NCV_{biomass}$)** in TJ/Tonne	0.0156	Net Calorific Value of the wood used as cooking fuel. Default value as per the applied methodology /06/.
Emission factor for the substitution of non-renewable woody biomass by similar	64.4	Emission factor for the substitution of non-renewable biomass by similar consumers. Default value as per the applied methodology /**06**/.

	consumers **($EF_{projected\_fossilfuel}$)** in tCO_2/TJ		
	Leakage adjustment factor **(Ly)** (fraction)	0.95	Net to gross Adjustment Factor. Default value as per the applied methodology /06/.
Findings	N/A		
Conclusion	VVB is able to confirm that the Data and parameters fixed ex ante have been implemented in full compliance with the registered PDD and monitoring plan /02/.		

E.6.2. Data and parameters monitored.

Means of verification	**Parameter**	**Value**	**Description/Assessment**
	Air quality	Reduction in smoke: 100% Respiratory Disease: 100% Eye infection: 98.57% Cough: 95.71%	Improved air quality in households because of the project activity was surveyed by third party surveyors and the same has been verified by the verification team and is found in line with the survey sheet and monitoring plan /02/
	Number of project devices of type i and age a that are operating in year y $N_{y,a,i}$ (Number)	15,087	From the total commissioned ICS, PP has monitored the number of project ICS in operation based on sampling survey. As per survey of 76 samples, 92.10% samples were operating at the time of survey. Hence, 92.10% of the total commissioned ICS during the monitoring period is considered in operation. As detailed in section D.4 above, CCIPL verified 12 samples of project ICS and found all ICS were in operation. Hence, the information available in the database to be consistent with onsite observations.
	Efficiency of the device of each type I and batch j implemented as part of the project activity ($\eta_{new,l,j}$)	For Mud ICS: 21.05% and 20.53% and for Metallic ICS: 23.10% , 22.07% and 21.03% for three periods	PP has chosen linear decrease in efficiency as per paragraph 37(a) of the methodology and accordingly decreased the project system efficiency for each year of operation. The applied efficiency is correct as per the methodology requirement and final PDD and hence accepted.
	Life span of ICS	5 years for metallic ICS and 4 years for mud ICS	Life of ICS is as per manufacturer specification and this is consistent with the applied methodology. As detailed in section B.1 of the MR, both project mud ICS and metallic ICS are still have remaining life during this monitoring period.

	Number of ICS distributed per household	1	As per project implementation database, 1 ICS is distributed in each household. This is also conservative as per the applied methodology.
	Adjustment to account for any continued use of pre-project devices during the year y (μ_y)	0.9562	As per sample survey, it was noted users use pre-project devices during downtime of project ICS which was average 13 days in a year. Considering this, yearly factor for compensating pre-project device use for the project is calculated as 96.44%. VVB noted during interview with end users the use of pre-project device is very rare and survey's result found to be correct as per user's confirmation. Hence, the result is accepted.
	Date of commissioning of batch j	First Batch: 31/10/2018 (installed from 15/ 08 2018 to 31/10 2018) Second Batch: 31/01 2019 (installed from 01/11 2018 to 31/01 2019) Third Batch: 07/04/2019 (installed from 01 /02 2019 to 07/04 2019)	The date of commissioning of batch is considered as per the applied methodology requirement. The date of commissioning of project devices are found correct as per the project database and accordingly the date of commissioning of bath is taken correctly for the project devices.
	Date of commissioning of project device i	Installed between 15/08/2018 to 07/04/2019	The project includes 9,964 metallic ICS and 6,416 mud ICS implemented in two districts of Nepal namely Mahottari and Sarlahi. The implementation took place between 15/08/2018 to 07/04/2019. The date of commissioning of each device is found consistent in the project database.
Findings	CAR 02 has been raised as concern regarding correct valuation of parameters. Changes made in the updated MR has been assessed by the Verification team and hence the following CAR has been successfully closed.		
Conclusion	Verification team confirms that the data and parameters fixed ex ante are in compliance with the registered PDD /02/ and monitoring plan /02/.		

E.6.3. Implementation of sampling plan

Means of verification	According to the standard for sampling and survey /13/ and related guidelines, the sampling plan was determined at the time of project registration and applied during the monitoring. - Sampling method: Stratified random sampling method is adopted as the target population (project ICS) involves two type of stoves. The

sample size is determined by the requirement to achieve 90/10 in line with the methodology for annual survey. Sampling approaches may follow the Guideline "Sampling and surveys for CDM project activities and programme of activities" for calculation of sample size.

- Data to be collected: Number of project devices of type i and operating in year y.
- Implementation plan: Annual or biennial.

Sampling method: The sample size included all households and considering proportion of metallic and mud stoves in total population sample number is determined to be 68. With 10% oversize of sample size the total sample considered is 76. This number is then further divided for mud stoves and metallic stoves based on its proportion in total population.

Strata	Population	Proportion	Sample
Metallic ICS Installation			
Mahottari	6,375	0.64	29
Sarlahi	3,589	0.36	17
Mud ICS Installation			
Mahottari	3,547	0.55	17
Sarlahi	2,869	0.45	13
Total	**16,380**		**76**

From each district, PP has randomly selected the ICS applying random sampling function in excel and accordingly the target ICS sample is determined for survey. The total sample size has been derived using equation from 'Guidelines for Sampling and Surveys for CDM Project activites and Programme of Activities Ver. 4.0. /13/. The expected parameter values (mean, standard deviation and proportion) have been taken from the guideline /13/.

Data collected: Questionnaire survey form used by third party surveyor and a detailed survey report has been provided /05/. Since the relative margin of error obtained is less than 10% for the monitored parameter, relative precision of the data is statistically acceptable and deemed representative of the population.

VVB has opted using accepting sampling as per paragraph 28 of the Standard: Sampling and surveys for CDM project activities and programmes of activities version 9.0 /13/ on PPs monitoring sampling list and number.

CCIPL has considered para 39 (a) of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0" for determining the sampling size to be visited by VVB /13/. In case of the current monitoring period, the verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 09.0 /09/: Considering Acceptable Quality Level (AQL): 0.5% Unacceptable Quality Level (UQL): 20% and producer risk of 5% and consumer risk of 20% a sample size of 11 was required as per Table 2 in the referred Standard /13/. Acceptance number (c) thus determined for the sample size is 0. However, CCIPL could verify 12 samples and found all the ICS are in operation.

Findings	N/A
Conclusion	VVB confirms that for all the parameters, the respective confidence/precision was met in accordance with the applied methodology AMS-II.G (version 11.1) /06/. The verification team has opted acceptance sampling over PP's monitoring survey (selected random samples) as per paragraph 28 of the Standard: Sampling and surveys for CDM project activities and programmes of activities version 9.0 /13/.

	The sampling plan implemented by the PP is in accordance with the applied methodology /06/ and the registered PDD /02/. The same is acceptable to the verification team. The verification took cognizance of § 9.4.15 of GS VVS (version 01.0) /11/.

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	There is no monitoring equipment involved in monitoring of the required parameters. Hence, no calibration requirement applicable for the project activity.
Findings	NA
Conclusion	NA

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The methodology AMS II G (Energy efficiency measures in thermal applications of non-renewable biomass version.11.1) does not account for baseline emissions separately, but instead quantifies net emission reductions achieved by the project. During this monitoring period from 01/01/2022 to 31/01/2023 (396 days). Considering the effective population of ICS for each batch, total baseline emission during monitoring period for this period is calculated to be 27,272 tons of CO_2eq in the baseline situation /02/.
Findings	N/A
Conclusion	N/A

E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The calculation algorithm in the methodology directly calculates emission reductions hence this is not applicable /06/.
Findings	CL 06 and CAR 02 were raised and successfully resolved. Please refer Appendix 4 below.
Conclusion	VVB confirms that the calculation of Project emissions have been carried out in accordance with the formulae and methods described in the registered PDD/02/ and the applied methodology AMS- II.G v11.1 /06/.

E.8.3. Calculation of leakage GHG emissions

Means of verification	The Net to Gross Leakage Adjustment Factor has been included in the emission reduction calculations considering the leakage of 5% (as per the methodology), it is accounted as 1,364 tCO2eq.as per paragraph 39 of the applied methodology AMS- II.G v11.1 /06/.
Findings	NA
Conclusion	VVB confirms that the calculation of leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered PDD /02/ and the applied methodology AMS- II.G v11.1/06/.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	The emission reductions have been calculated using the following formulae: $ER_y = B_{y,savings} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} \times N_{y,I} \times \mu_y$ Where: $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes p cookstove device of type *i* and batch *j* during year $B_{y,savings}$ is calculated as following: $B_{y,savings} = B_{old} * (1-\eta_{old}/ \eta_{new})$. B_{old} is fixed ex-ante to be 4. ton/year as per PDD /**02**/. η_{old} is also fixed ex-ante to 10% default as per the methodology /**06**/. η_{new} for t fourth year is 21.05% and 20.53% for mud stove a 23.10%, 22.07% and 21.03% for metallic stoves. $f_{NRB,y}$ = Fraction of woody biomass that can be established as nc renewable biomass (fNRB) fixed ex-ante to be 86 calculated as per procedure outlined in tool to calcula fNRB /**02**/. $NCV_{biomass}$ = Net calorific value of the non-renewable woody bioma that is substituted (IPCC default for wood fuel, 0.01 TJ/tonne, based on the gross weight of the wood that 'air-dried') $EF_{projected\_fossilfuel}$ = Emission factor for the fossil fuels projected to be used substitution of non-renewable woody biomass by simi consumers. Use a value of 64.4 t CO_2/TJ $N_{y,i,a}$ = Number of project devices of type *i* and age *a* operati during year *y*. During this monitoring period it 15,087(92.10% of total ICS) as explained in section E.6 above. μ_y = Adjustment to account for any continued use of pre-proj devices during the year *y*. 95.62% as per sample surve As per paragraph 29 of the applied methodology and PDD, . Therefore, ERs achieved during the monitoring period is 25,908 tCO_2.
Findings	NA
Conclusion	Verification team has confirmed that the calculation of summary of GHG emission reductions have been carried out in accordance with the formulae and methods described in the approved methodology/06/ and registered PDD /02/.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The emission reductions from the project for the monitoring period as reported in the monitoring report revision 2 dated 25/07/2023 /01/ is equivalent to 25,908 tCO_2e (round down value). The estimated emission reduction was estimated to be 35,853 tCO_2.
Findings	NA
Conclusion	The Verification team confirms that the calculation of actual GHG emission reductions have been carried out in accordance with the

	formulae and methods described in the registered PDD/02/ and the applied methodology/06/ and the project emission reduction calculations have been checked and assessed by the verification team with the help of Emission reduction worksheet /03/ and the same has been verified.

E.8.6. **Comparison of monitored parameters with last monitoring period**.

Means of verification

The verification team has verified and compared the monitoring report /01/ with the last monitoring report and through document review stated the following

Parameter	Values obtained in this MP	Values obtained on last MP
Air Quality (Users' perception on smoke reduction and Incidence of disease) (SDG 3)	Smoke Reduction: 100% Eye infection: 98.57% Respiratory disease: 100% Cough: 95.71%	Smoke Reduction: 100% Eye Infections: 100% Respiratory Disease: 100% Cough: 100%
Access to affordable and clean energy services (Number of ICS under the project) (SDG7)	15,087	15,723
Access to affordable and clean energy services (ICS Operational)	92.10%	95.99%
Livelihood of poor (Reduction in fuel collection time and cooking time)	Fuel collection:98.57% Cooking: 100%	Fuel collection:97.92% Cooking: 100%
Quantitative employment and Income Generation (Number of Jobs Created) SDG 8	396 Stove master and 15 employees	396 Stove master and 15 employees
$\eta_{new,l,j}$	Mud: 21.05% and 20.53% Metallic: 23.10%, 22.07% and 21.03%	Mud: 21.05% and 20.53% Metallic: 23.10% and 22.07%
Life span	Mud Stoves: 4 years	Mud Stoves: 4 years
$N_{d,HH}$	1	1
μ_y	0.9562	0.9644

	Date of commissioning of batch j	First Batch: 31/10/2018 (installed from 15/08/2018 to 31/10/2018) Second Batch: 31/01/2019 (installed from 01/11/2018 to 31/01/2019) Third Batch: 07/04/2019 (installed from 01/02/2019 to 07/04/2019)	First Batch: 31/10/2018 (installed from 15/08/2018 to 31/10/2018) Second Batch: 31/01/2019 (installed from 01/11/2018 to 31/01/2019) Third Batch: 07/04/2019 (installed from 01/02/2019 to 07/04/2019)
	Date of commissioning of project device i	Installed between 15/08/2018 to 07/04/2019	Installed between 15/08/ August 2018 to 07/04/ April 2019
Findings	NA		
Conclusion	The verification team has assessed the monitoring report for this MP /01/ with the previous one and all the changes in the values of the parameters are inline with the monitoring plan included in the registered PDD/02/		

E.8.7. Remarks on difference from estimated value in registered PDD

Means of verification	The actual emission reductions are less than the ex-ante estimated emission reductions during the monitoring period.
Findings	NA
Conclusion	The Validation team can assure that the actual emission reductions occurring in the project are less than the estimated emission reductions in regards with the current monitoring report /01/,registered PDD /02/ and emission reduction worksheet /03/

E.8.8. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification

GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
NA	25,908 tCO_2e

Year-wise break-up of emission reductions:

Year	Emission Reductions (tCO_2e)
01/01/2022 to 31/12/2022	23,880
01/01/2023 to 31/01/2023	2,028
Total (tCO_2e)	25,908

Findings	NA
Conclusion	The Verification team states that the actual GHG emission reductions during this monitoring period is 25,908 tCO_2 and the calculations have been done according to the approved methodology /06/ and the registered PDD/02/

E.9. Calculation of net benefits or direct calculation for each SDG Impact

Means of verification

Data variable	Source of Data /20/	Reported value for the project period
Users' perception on improved air quality. - SDG 3	Survey report	100% users reported smoke reduction and reduction in respiratory dieses. 98.57% reported reduction in eye infection and 95.71 reported reduction in cough.

VVB Assessment

As per third party survey the sample end users reported positive feedback related to health and illness compared to baseline scenario. The monitoring procedure is as per registered monitoring plan and verification team also interviewed end users who confirmed positive feedback related to health and illness.

Data variable	Source of Data	Reported value for the project period
Access to affordable and clean energy services-SDG 7	Project developers record /**03/, /20**/	92.10% users (of total 15,087) are accessed to clean and affordable energy services.

VVB Assessment

In line with the monitoring plan, 15,087 project ICS are found operational during the monitoring period. Hence, 15,087 project users are accessed to affordable and clean energy services.

Data variable	Source of Data	Reported value for the project period
Livelihood of poor (Reduction in fuel collection time and cooking time)- SDG 7	Survey report /20/	98.57% users reported time saving in firewood collection and 100% reported time saving in cooking.

VVB Assessment

Under livelihood of poor, PP is targeting to monitor 'reduction in fuel collection time' and 'reduction in cooking time' which has been done by third party surveyor from sample end users. All sampled users reported less time consumption for fuel collection as due to the project activity less fuel is used for the same thermal needs. The monitoring procedure is as per registered monitoring plan and verification team also interviewed end users who confirmed positive feedback related to fuel collection time.

Data variable	Source of Data	Reported value for the project period
Quantitative employment and Income Generation- SDG 8	PD's internal records /17/	396 indirect job of mason and 15d 15 direct job.

VVB Assessment

	Due to the project implementation the project developer trained 396 women on payment basis to construct mud ICS who were engaged to install project mud ICS. In addition to this indirect job creation, PD has 15 direct employees to manage and operate the project activities. PD's employment records, training records etc. were checked /17/ and confirm the data to be correct. **Data variable** | **Source of Data** | **Reported value for the project period** GHG emissions (tco2eq) | Excel sheet for ER calculation /03/ | GHG emission reductions during this monitoring period is 25,908 tCO_2 **VVB Assessment** The Verification team VVB states that the actual GHG emission reductions during this monitoring period is 25,908 tCO_2 and the calculations have been done according the approved methodology /06/ and the registered PDD/02/ **Continuous grievance mechanism**: The project developer has a defined continuous grievance input mechanism in place which is made aware to all stakeholders specially to project ICS users in their ICS user's manual and VER right transfer agreement. As per PDD's record there was no grievance recorded during the monitoring period. VVB interviewed ICS users and could confirm there was no grievance recorded by any stakeholders. Hence, PDD's justification is accepted.
Findings	CL 03 was raised and successfully resolved.Please refer Appendix 4 below..
Conclusion	CCIPL confirms that monitoring of all the sustainable development monitoring parameters during this monitoring period is in line with the SD monitoring plan and are consistent with on-site review.

E.10. Global stakeholder consultation

Means of verification	Not Applicable
Findings	NA
Conclusion	NA

SECTION F. Internal quality control

The final verification report passed a technical review before being submitted to the Project Participant for further submission to Gold Standard. A technical reviewer qualified in accordance with CCIPL's qualification scheme for GS validation and verification performance .

SECTION G. Verification/Certification opinion

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Carbon Check (India) Private Ltd. (CCIPL) has performed the 4th periodic verification of the GS Project Activity "Clean Cooking Solutions for Rural Nepal" in Nepal having GS reference number GS 7544.

The verification team assigned by the VVB concludes that the project activity as described in the registered PDD (version 04.1 of 10/02/2021) /02/ and the monitoring report (version 02 dated 25/07/2023) /01/, meets all relevant GS4GG requirements for project activity and UNFCCC, GS

requirements. The verification has been conducted in-line with the GS4GG requirements, GS4GG Community Services Activity Requirements /22/ and GS validation and Verification Standard (version 1.0)./11/

Verification methodology and process:

The verification team confirms the contractual relationship signed on 24/02/2023 between the VVB, Carbon Check (India) Private Ltd. and Project Participants (Value Network Ventures Advisory Services Pte. Ltd.). The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The verification team has conducted thorough review as per GS4GG Community Services Activity Requirements, UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the GS4GG requirements /08/ and constitutes the review and completion of the following steps:

- Reviewing the registered PDD (version 4.1; dated 10/02/2021) /02/;
- Receipt of the MR (version 2.0 dated 25/07/2023 and other versions) /01/;
- Desk review of the MR /01/ and other relevant documents;
- Review of the applied monitoring methodology (AMS-II.G, version 11.1) /06/;
- On-site assessment (22/06/2023);
- Resolution of CARs and CLs raised during verification;
- Issuance of Verification Report

The project activity was correctly implemented according to the selected monitoring methodology and registered PDD /02/. Through document review and on-site visit assessment, the verification team confirms that the project activity has resulted in 25,908 tCO_2e emission reductions during this fourth monitoring period (01/01/2022 to 31/01/2023).

The VVB has raised seven (07) clarifications and two (02) corrective action requests, all of which are successfully closed.

The break-up of emission reduction from 01/01/2022 to 31/12/2023 as verified during the course of verification are as below:

Vintage	Emission reductions (tCO_2e)
01/01/2022 to 31/12/2022	25,880
01/01/2023 to 31/01/2023	2,028
Total (tCO_2e)	25,908

The VVB considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered PDD/02/ are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 25,908 tCO_2 equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

CCIPL therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

SECTION H. Certification statement

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In the opinion of the Carbon Check (India) Pvt Ltd, the GHG emission reductions stated in the monitoring report version 2 dated 25/07/2023 for project activity, “Clean Cooking Solutions for Rural Nepal” for period 01/01/2022 to 31/01/2023 (Inclusive of both the dates) are stated. The GHG emission reductions were calculated correctly based on the approved monitoring methodology “AMS-II.G, “Energy efficiency measures in thermal applications of non-renewable biomass”, (version 11.1) /06/ and the monitoring plan contained in the registered PDD (version 4.1; Dated: 10/02/2021) /02/. Hence, CCIPL able to certify that the emission reductions from the project during this monitoring period 01/01/2022 to 31/01/2023 (Inclusive of both the dates) amount achieved is to 25,908 tCO_2e.

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CCIPL	Carbon Check India Pvt. Ltd.
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification Request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
ER	Emission Reductions
ER	External Resources
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
fNRB	Fraction of non-renewable biomass
FVR	Final Verification report
GHG(s)	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goals
GWP	Global Warming Potential
ICS	Improved Cooking Stoves
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Country
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
OSV	On Site Visit
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
SD	Sustainability Development
SDG	Sustainable Development Goals
SMP	Sustainability Monitoring Plan
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change

VER	Verified Emission Reduction
VNV	Value Network Ventures Advisory Services Pte. Ltd.
VVB	Validation and Verification Body
VVS	Validation and verification standard

Appendix 2. Competence of team members and technical reviewers

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Pallavi Gedam

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 India		

in the following Technical Areas:

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

Issue Date
1st January 2023

Expiry Date
31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Appendix 3. Documents reviewed or referenced

No.	Title	References to the document	Provider
01	Monitoring report for the project activity 'Clean Cooking Solutions for Rural Nepal' covering period 01/01/2022 to 31/01/2023	a)Initial Version 01 of 01/07/2023, b)Final version 02 of 25/07/2023,	PP
02	PDD for the project activity 'Clean Cooking Solutions for Rural Nepal	Version 4.1 of 10/02/2021	PP
03	Emission reduction worksheet 'GS 7544_ER_Calculation sheet_MP-4_V.01_25072023 & GS7544_ER_Calculation sheet_MP-4_V.02_25072023.xls	Version 01 of 01/07/2023, version 2.0 of 25/07/2023	PP
04	Sales database	Sales database entry , SD#4_Data_entry.xls	PP
05	Sampling calculation sheet	Sampling calculation data, SD#5_7544_Sampling_v2.xls	PP
06	Small-scale Methodology AMS-II.G 'Energy efficiency measures in thermal applications of non-renewable biomass'	Version 11.1	Publicly available
07	Gold Standard for the Global Goals Principles & Requirements	Version 1.2 of October 2019	Publicly available
08	Gold Standard for the Global Goals CS Activity Requirements	Version 1.2 of October 2019	Publicly available
09	Validation report for the project 'Clean Cooking Solutions for Rural Nepal'	Version 2.1 of 21/01/2021	VVB
10	Agreement for transaction of carbon credit from the project activity 'Clean Cooking Solutions for Rural Nepal'	Agreement dated 01/08/2018	PP
11	GS validation and verification standard	Version 1 06/03/2023	Publicly available
12	Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities	Ver. 4.0 (EB86, Annex 4)	Publicly available
13	Standard for Sampling and surveys for CDM project activities and programmes of activities	Version 09	Publicly available
14	LDC Country Information	http://unfccc.int/cooperation_and_support/ldc/items/3097.php	Publicly available
15	Guideline: Application of materiality in verifications	Version 2	Publicly available
16	Final Report- User's survey 2021 for Clean Cooking solutions for Rural Nepal (Gs 7544)	January 2022	PP
17	Employment records, trainings etc.	Data for September 2022 (SD#6_Salary_payment)	PP

18	Grievance Expression book/logbook	Submitted as evidence SD#8_Grievance_process_book	PP
19	Proof of right of relinquishment of VERs from the end users of the stove	Submitted as evidence SD#7_Installation_card_ERRT	PP
20	Survey report	Submitted as evidence SD#2_Survey_Questionnaire	PP

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CL from this validation

CL ID	01	**Section no.**	Key Project Information	**Date:** 24/07/2023
Description of CL				
Under Key Project information of the Monitoring report 1) PP to refer the latest version of registered PDD. 2)In table 2 of the MR PP to divide the monitoring period into calendar years and calculate the amount of Product in "VER" units generated in each calendar year as per GS template filling guidelines.				
Project participant response				**Date:** 25/07/2023
1) The latest version of the registered PDD is updated as 4.1 in the updated MR (version 2.0). *2) The monitoring period is split into calendar years in the table 2 of updated MR (version 2.0)*				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023)				
VVB assessment				**Date:** 30/07/2023
VVB has assessed the following changes made in the updated MR provided by the PP and finds them to be correct and appropriate. Hence the raised finding is closed.				

CL ID	02	**Section no.**	B1	**Date:** 24/07/2023
Description of CL				
In the "*Description of implemented project" section it is stated "During this monitoring period, monitoring was done through sampling survey as mentioned in the approved PDD. For this, 100 samples were surveyed and 94.99% of them were found to be operating*." Whereas it is evident for the surveyed data that 76 samples are taken into consideration and 92.10% was the operating percentage. Moreover, PP has considered the Total Number of ICS 'N' 16,380 but the emission reduction show's 16,378 ICS. PP to clarify difference for the same.				
Project participant response				**Date:** 25/07/2023
The PP acknowledges that the information in stated section of the MR was not updated as per the monitoring survey. Hence it is clarify that the sample size for the monitoring survey is 76 with operational percentage of 92.10% and this is as per the monitoring survey and consistent with the monitoring survey information contained in section D.4 of the MR. *The total number of ICS "N" installed in the project is 16,380 which is as per the installation database. The inconsistency in the ER sheet (Tab "Efficiency reduction cal" cells D3:D5 and E3:E5) has been corrected and the same is linked in row 33 of Tab "ER Calculation sheet". The ER calculation is updated accordingly throughout the MR.*				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023) *Updated ER sheet (GS7544_ER_Calculation sheet_MP-4_V02_25072023)*				

VVB assessment	**Date:** 30/07/2023
VVB has assessed the following changes made in the updated MR *(GS7544_Monitoring Report_MP-4_v02_25072023)* and updated ER sheet *(GS7544_ER_Calculation sheet_MP-4_V02_25072023)* and finds them to be consistent and correct. Hence the raised finding stands closed.	

CL ID	03	**Section no.**	D2	**Date:** 24/07/2023
Description of CL				
1) Section D2 of the Monitoring report the monitored parameter for SDG 7 "Number of ICS under the project" value is supported by % of operating stoves (95.99%) in the MR which is not in line with the surveyed data (92.10%). PP to clarify the same. 2) Section D2 of the Monitoring report the monitored parameter for SDG 13 "**μ_y",** calculation method row states "*The monitoring surveys captured the estimated downtime and use of pre-project device in days. Average downtime calculated is 15.5 days and rounded up to 16 days which is considered as use of pre-project devices and calculated the factor for the year 2022."*, whereas in the ER calculation sheet tab of the ER sheet states " *Monitored and calculated during the survey using downtime and continued use of pre-project device (Average downtime calculated is 12.45 days and rounded up to 13 days which is considered as use of pre-project devices and calculated the factor for the year 2022)"*. PP to clarify the same.				
Project participant response				**Date:** 25/07/2023
1) PP acknowledges that the information for the SDG7 was retained from the previous monitoring period for "Value(s) of monitored parameter". The same is corrected as 92.10% in the updated MR (version 2.0) *2) The information contained in section D2 of the MR is consistent with the monitoring survey results. However, PP acknowledges the typographical mistake in remarks for the parameter presented in ER sheet (Tab "ER Calculation sheet" cell "N31") while the value applied for the parameter is as per the survey results. The information is corrected in the revised ER sheet.*				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023) *Updated ER sheet (GS7544_ER_Calculation sheet_MP-4_V02_25072023)*				
VVB assessment				**Date:** 30/07/2023
VVB has assessed the following changes made in the updated MR *(GS7544_Monitoring Report_MP-4_v02_25072023)* and updated ER sheet *(GS7544_ER_Calculation sheet_MP-4_V02_25072023)* and finds them to be consistent and correct. Hence the raised finding stands closed.				

CL ID	04	**Section no.**	D3	**Date:** 24/07/2023
Description of CL				
PP to clarify about the value of "Value obtained last monitoring period" for the "Access to affordable and clean energy services (Number of ICS under the project)"				
Project participant response				**Date:** 25/07/2023
The value for the "Access to affordable and clean energy services (Number of ICS under the project) was mistaken as 16,723 instead of 15,723. The same has been corrected in section D3 of the revised MR.				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023)				
VVB assessment				**Date:** 30/07/2023
Changes made in the section D3 of the updated MR has been assessed by the VVB and is deemed to be correct and appropriate. Hence the requested CL is closed.				

CL ID	05	**Section no.**	D4	**Date:** 24/07/2023

Description of CL	
PP to clarify about the value of “expected proportion of ICS” stated as 75% which in the later table is obtained as 80% (Pb = 0.80).	
Project participant response	**Date:** 25/07/2023
The expected proportion used for the calculation of the sample is 80% which was stated otherwise in the MR submitted. The value has been corrected in the updated MR.	
Documentation provided by project participant	
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023)	
VVB assessment	**Date:** 30/07/2023
PP has updated the following section in the updated MR *(GS7544_Monitoring Report_MP-4_v02_25072023)* and the same has been assessed by the VVB and are deemed correct and appropriate. Hence the raised finding is closed.	

CL ID	06	**Section no.**	ER spreadsheet	**Date:** 24/07/2023
Description of CL				
1) PP to clarify the dates in the “Efficiency reduction cal” tab for the batch wise ICS monitored in the ER calculation sheet. 2) PP to clarify on the total number of stoves distributed batchwise in the row A 33. 3) PP has referred to methodology version 11 in the ER spreadsheet. PP to clarify the same. 4) Under sub sheet “Efficiency reduction cal” PP has considered the monitoring period from 01/03/2020 to 28/02/2021. PP should provide the revised emission reduction sheet without hardcoding.				
Project participant response				**Date:** 25/07/2023
1) The ICS under the project were installed in three batches (Batch 1: 15/08/2018 to 31/10/208; Batch 2: 01/11/2018 to 31/01/2019; and Batch 3: 01/02/2019 to 07/04/2019). The efficiency of ICS implemented for respective batch has been considered from the first date of installation of ICS i.e. the mud ICS implemented in first batch would operate at efficiency of 22.10% from the batch commissioning date (31/10/2018) to the 14/08/2019. Similar approach is taken for other batches of the ICS considering the life of each type (mud and metallic) of ICS implemented in the project. For the calculation of the emission reduction, applicable efficiency for each type of ICS for respective duration within the monitoring period has been applied. PP believes that this clarified the concern. *2) The number of stoves distributed batchwise in row 33 of the ER sheet (Tab: “ER Calculation sheet”) has been updated as per the database.* *3) The reference to applied methodology has been updated as 11.1 at respective places in the ER spreadsheet.* *4) The inconsistency in the monitoring period in the sub sheet* “Efficiency reduction cal” is corrected in the revised ER spreadsheet. *PP has ensured that the revised emission reduction sheet is submitted without any hardcoding.*				
Documentation provided by project participant				
Updated ER sheet (GS7544_ER_Calculation sheet_MP-4_V02_25072023)				

VVB assessment	**Date:** 30/07/2023
1) PP has provided clarification regarding the distribution of ICS batchwise with effective dates, same has been assessed by VVB and is found to be correct and appropriate. Hence the raised concern is now closed. 2) PP has justified the number of stoves distributed and stoves operational for this monitoring period (batch wise) and hence the emission reductions calculated are free from overlapping and double counting. Hence the raised concern stands closed. 3) VVB has assessed the following changes made in the updated ER sheet *(GS7544_ER_Calculation sheet_MP-4_V02_25072023)* and finds them to be consistent and correct. Hence the raised concern stands closed. 4) VVB has assessed the following changes made in the updated ER sheet *(GS7544_ER_Calculation sheet_MP-4_V02_25072023)* and finds them to be consistent and correct. Hence the raised concern stands closed The findings are closed.	

CL ID	07	**Section no.**	Sampling Spreadsheet	**Date:** 24/07/2023
Description of CL				
PP is requested to use other variable for "Proportion of Metallic ICS in total population" as "n" to avoid assigning different parameter as same variable. Also PP to confirm on the authenticity of the samples chosen during the this monitoring period in the sampling sheet.				
Project participant response				**Date:** 25/07/2023
The legend used for variables in the "Sampling Spreadsheet" is updated in line with the legends used in section D.4 of the MR. *The PP followed the sampling and survey guideline for "CDM Project Activities and Programme of Activites (version 4.0)" for the sample calculation. The households sampled for the MP under consideration are selected based approach discussed in section D4 of the MR. The detail of the sampling is presented in annex 1.2 of the users' survey report submitted to the VVB. Please refer to SD#1.*				
Documentation provided by project participant				
Revised sampling spreadsheet (SD#5_7544_sampling_v2) *Survey report (SD#1_GS7544_ICS User Survey-2021)*				
VVB assessment				**Date:** 30/07/2023
VVB has assessed the following justification made by PP and the documents provided that supports the same and is found to be correct and appropriate. Hence the finding is closed.				

Table 2. CAR from this validation

CAR ID	01	**Section no.**	D2	**Date:** 24-07-2023
Description of CAR				
Section D2 of the MR under the parameter "Quantitative employment and Income Generation**"** associated with SDG 8, should rectify the section for "Measuring/reading/recording frequency:"				
Project participant response				**Date:** 25/07/2023
The section D2 of the MR for the parameter "Quantitative employment and income generation" under SDG8 has been updated aligning with the registered PDD.				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023)				
VVB assessment				**Date:** 30/07/2023
VVB has assessed the changes made in the updated MR *(GS7544_Monitoring Report_MP-4_v02_25072023)* and deemed to be correct and appropriate. Hence the raised CAR stands closed.				

CAR ID	02	Section no.	D2	Date: 24-07-2023
Description of CAR				
PP to clarify on the value for the parameter "$N_{y,i,a}$" under section D.2 of the MR. PP needs to check and rectify the same throughout the MR and ER spreadsheet.				
Project participant response				**Date:** 25/07/2023
The clarification for the calculation of parameter "Ny,i,a" under section D.2 of the MR is presented in "calculation method" row of the same table. The value is obtained from the survey and any inconsistencies in this proportional parameter has been corrected throughout the MR and ER spreadsheet.				
Documentation provided by project participant				
Updated MR (GS7544_Monitoring Report_MP-4_v02_25072023) *Updated ER sheet (GS7544_ER_Calculation sheet_MP-4_V02_25072023)*				
VVB assessment				**Date:** 30/07/2023
Changes made by the PP in the ER sheet and the MR is assessed by the VVB and is deemed appropriate and in-line with methodology requirements. Hence the raised CAR now stands closed.				