Verification and certification report form for programme of activities	
BASIC INFORMATION	
Title and GS reference number of the programme of activities (PoA)	Solar Cooking in Chad (POA) GS ID: 1075
Version number(s) of the PoA-DD(s) to which this report applies	Version 10.0 dated 23/09/2020
GS ID (s) of the VPAs	(GS 3445) Solar cooking in Chad, Iridimi (VPA 01)
Version number of the verification and certification report	6.0
Completion date of the verification and certification report	22/01/2025
Monitoring period number and duration of this morning period	5th for Iridimi (VPA-01) - 01/06/2022 to 31/12/2023
Version number of the monitoring report to which this report applies	Iridimi: Version 3.0 (as part of joint MR with Touloum); Dated – 17/01/2025
Activity Requirements applied	Community Services Activities
Product Requirements applied	GHG Emission Reduction & Sequestration
Coordinating/managing entity (CME)	FairClimateFund
Host Country	Republic of Chad
Applied methodologies and standardized baselines	The Gold Standard Simplified Methodology for Efficient Cookstoves v1.1 (April 2020)
Mandatory sectoral scopes	3: Energy demand
Conditional sectoral scopes, if applicable	Not applicable
Name and UNFCCC reference number of the VVB	E-0052: Carbon Check (India) Private Ltd.
Name, position, and signature of the approver of the verification and certification report	 Amit Anand, CEO

SECTION A. Executive summary

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Introduction:

The Co-ordinating Managing Entity/Project Participant has appointed the VVB, Carbon Check (India) Private Ltd. (CCIPL)/18/ to perform independent verification of the GS Programme of Activities, "Solar Cooking in Chad (POA)" in the Republic of Chad (hereafter referred to as "Programme of Activities or PoA") for the VPAs titled "Solar cooking in Chad, Iridimi (VPA 01).

The PoA involves the distribution of solar cookers to be used along with less efficient three-stone cooking stoves which are using woody biomass, VPAs are efficient in generating heat using solar energy to reduce the use of three-stone stoves typically used in the baseline. By reducing baseline stove usage time, the PoA will save on the consumption of woody biomass and do GHG emissions reduction.

The VPAs are designed to generate emission reductions through the distribution of solar cookers. Solar cookers are reducing the less efficient baseline stoves in common use (baseline scenario). The CME and VPA implementer are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the component project activities.

This report summarises the verification findings of the project, performed on the basis of Procedures, and GS4GG methodology requirements, as well as on the basis of given criteria for consistent project operations, monitoring, reporting, and the subsequent decisions by the Gold Standard Secretariat. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with a request for issuance of VERs. This report contains the findings and resolutions from the verification along with a certification statement for the certified emission reductions.

Objective:

Verification is the process of periodic independent review and ex-post determination of both quantitative and qualitative information by a VVB. In verification, the monitored reductions in GHG emissions that have occurred because of the registered GS project activity during a defined monitoring period are to be verified.

Certification is the written assurance by a VVB that, during a specific period in time, a project activity achieved the emission reductions as verified.

The duration of this monitoring period is 01/06/2022 to 31/12/2023 for VPA 01 (Iridimi). The objective of this verification was to verify and certify Emission Reductions and SDG benefits achieved for the period of "Solar cooking in Chad, Iridimi (VPA 01)" 01/06/2022 to 31/12/2023 (inclusive of both the dates) reported for the "Solar Cooking in Chad (POA)" in the host country "Republic of Chad".

The purpose of verification is to review the monitoring results and verify that the monitoring was implemented according to the monitoring methodology and the monitoring plan given in the PoA/ VPAs and to confirm that the reductions in anthropogenic emissions by sources are sufficient, definitive, and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the implementation of the registered program of activity VPA-DDs.

In particular, the monitoring plan, monitoring report, and the project's compliance with relevant UNFCCC, GS, and host Party criteria are verified to confirm that the component project/s has/have been implemented in accordance with the previously registered/included component project design with conservative assumptions, as documented. Also, it is confirmed that the monitoring plan is following the registered/included VPA-DDs and the approved monitoring methodology.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered/included VPA-DDs.
- To verify the implemented monitoring plan with the registered/included VPA-DD or approved revised VPA-DDs and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a **reasonable level of assurance** about whether the reported GHG emission reduction data are free from material misstatement.
- To verify that reported GHG emission data are sufficiently supported by evidence.

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

The verification comprises a review of the monitoring report covering the monitoring period from VPA 01 (Iridimi): 01/06/2022 to 31/12/2023 and based on the registered/included VPA-DDs including the monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by a project participant.

The verification team assigned by the VVB concludes that the PoA (Version 10.0 dated 23/09/2020), "Solar cooking in Chad, Iridimi (VPA 01)" all relevant requirements of the GS4GG requirements and UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM M&P, the modalities, and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board and Gold Standard Secretariat. The verification has been conducted in line with the GS4GG requirements and CDM VVS for PoAs requirements Version 3.0.

The voluntary project activities were correctly implemented according to the selected monitoring methodology, monitoring plan, and the approved revised VPA-DD/s. The monitoring system was implemented, and maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review of documents and information shared by the CME, CME, the verification team confirms that the VPA has resulted in emission reductions during the first monitoring period as follows:

GS3445 (VPA 01): 15, 348 VERs.

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

SECTION B. Verification team

B.1. Verification team, technical reviewer, and approver[1]

Carbon Check (India) Private Ltd. has appointed a competent team as per the UNFCCC Accreditation Standard, GS4GG requirements, and CCIPL's internal procedures. Further details regarding team competence can be found in Appendix 2. The team is outlined below:

[1] Confirming to the GS requirements of paragraph 2.2 of RU 2020 PR - PR, V1.2 (validation and verification by same VVB), VVB confirms that it was not involved in any kind of validation activity of the project.

Sr. No.	Role	Type of resource	Last name	First name	Affiliation (e.g., name of central or other offices of VVB or outsourced entity)
1	Team Leader/Technical Expert	IR	Mane	Dinesh[2]	CCIPL
2.	Acting Team Lead	IR	Kumar	Pankaj[3]	CCIPL
3.	Local Expert	IR	Tekapso	Leslie	CCIPL
4.	Technical Reviewer	IR	C.	Indumathi	CCIPL
5.	Approver	IR	Anand	Amit	CCIPL

SECTION C. Application of materiality in conducting the verification

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: Recording and reporting of the information in the ER spreadsheet.	Medium	All the input data in the ER spreadsheet including the sales database, determination of parameters for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the.	The risk was mitigated by training the personnel involved in the data capture, and calculation and by following the monitoring responsibilities. The training records were reviewed. The verification team, based on the above, confirms that the risk is appropriately mitigated.
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	The data is recorded in spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database, and Stove efficiency testing records is controlled.	The identified risk was mitigated by managing access to the records. It was confirmed by the CME that the raw data is collected by the field personnel and then transmitted and stored electronically to the CME's office. The organogram of the organization for the data collection and record-keeping was reviewed and found satisfactory. The data quality control is maintained by the CME.
3.	Accuracy of the measuring equipment	Low	Check the calibration records for the	The risk due to the accuracy of the measuring equipment

[2] Mr. Dinesh Mane worked on this project as Team Leader, Technical Expert up to 18-October-2024. After that new Acting Team Leader (Mr. Pankaj Kumar) is allotted for the project.
[3] Mr. Pankaj Kumar worked on this project as Assessor up to 18-October-2024. After that on this project he is allotted as Acting Team Leader.

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	
			measurement equipment used for the efficiency test.	was ensured by planning to check the calibration certificates of the measuring equipment used for stove efficiency.
4.	Competence of personnel involved in conducting standardized tests.	Low	Interview of the personnel involved and check the training records/accreditation certificates (applicable in case of institutions) involved in conducting such tests.	The risk was mitigated by reviewing the training records of the personnel involved in conducting such tests and by following the monitoring responsibilities. For institutions involved in conducting such tests, their accreditation certificates were checked to establish their competence for conducting such tests. The training records and certificates were reviewed which were also confirmed during the verification.
5.	Sample	Medium	The sample size is not suitable or the surveyed stoves at the VPA level are not random.	Cross-check the procedure to identify the sample size against the sampling guideline and standard and confirm the sample size is calculated correctly.

C.2. Consideration of materiality in conducting the verification

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The project is a Micro-scale, project activity achieving total emission reductions of < 10,000 tons of CO2e per year; as such, a 10 percent materiality threshold is applied. The threshold of materiality was evaluated based on §13 of Guideline "Application of materiality in verifications" Version 2.0/B05/ and §9.6.3 (d) of GS4GG VVS for PoAs, version 1.0/B03/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 10% of GS3445 (VPA 01): 15,169 tCO_2e which is equal to 1,546.9 tCO_2e.

In planning the verification, the verification team took cognizance of §11 of the "Guideline: Application of materiality in verifications" Version 02.0/B05/. A materiality threshold of GS3445 (VPA 01) is 1,546.9 tCO_2e determined in line with §9.6.3 (d) of "GS4GG validation and verification standard for programmes of activities", version 1.0/B03/.

Based on the above information, a risk analysis is carried out in the following activities:

1. Monitoring system including the data input procedure (including relevant personnel and applicable template forms used)
2. Copy of the agreement between household and Project Participant (s) (origin of data)
3. Stove unique ID system
4. ER sheet (application of data)
5. Data flow
6. Data control procedures
7. Monitoring survey records

In conducting the verification, VVB took cognizance of §13 of the guideline “Application of materiality in verifications” Version 02.0/B05/ and based on the input of data from different sources checked through a sampling of records. Data flow was checked through a comparison of data in hand-written forms, electronic database, and ER sheet /2/. The competence of the personnel involved in conducting the stove efficiency testing, recording of data, and calculation of the emission reduction data has been checked by the verification team by means of a review of the training documents.

The risks identified can be mitigated through cross check with all sets of documents. The verification team performed the following checks to mitigate the effects of the above-identified sources of error:

Mitigation of Human error risks: The verification team mitigated the risk by checking the training records of the personnel and assessing their competencies, skills, monitoring/testing procedure followed, understanding of the monitoring survey forms, protocol and testing procedure, etc. Further, data was crosschecked with the ER calculation spreadsheet /2/ and the sample raw data.

Mitigation due to error in the Information system: Verification team by conducting interviews with the personnel responsible for such activities mitigated the risk due to errors in an information system. It was confirmed through interviews that the raw data is collected by the field personnel and then transmitted and stored electronically at CME’s office. The data quality control is maintained by the CME.

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing the calibration certificates of all the project equipment.

Competence of personnel involved in conducting standardized tests: The verification team has reviewed the abilities, qualifications, and recognition of involved personnel and institutions of the measuring team. The tests/procedures have been carried out by well-trained personnel. The training certificate of the personnel has been provided to the verification team in this respect.

Mitigation due to an error in Sampling: The verification team mitigated the risk by checking the list of random samples generated for monitoring surveys for VPAs, and the sample size calculation sheet.

In conducting the verification, VVB took cognizance of §13-17 of the Guideline: “Application of materiality in verifications” (version 2.0)/B05/ and based on the input of data from different sources checked through sampling records.

Based on the assessment, CCIPL confirms with a reasonable assurance that the claimed emission reductions are free from material errors, omissions, or misstatements.

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 and the supporting documentation. This process included reviewing data and information presented to verify their completeness and a review of the monitoring plan and methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

D.2. Remote site inspection

In line with GS4GG “Principal and Requirement” version 1.2 /B01/,“GS4GG site visit and remote audit requirement” v2.0 /B04/ and approved GS deviation form on 05/05/2024 VVB has conducted a remote-site inspection for verification of the project activity on 08/07/2024 to 09/07/2024. The following activities were carried out during the remote-site visit.

The deviation request form was raised by CME and on approval of deviation request form by Gold Standard on date 05/05/2024 /05/, the verification team has carried out remote-site interviews with enumerators involved in monitoring to assess the information included in the project design document, and stakeholder consultation report. During the desk review, the relevant records related to project design, implementation and operation were checked, stakeholders engaged, and implementing agency and remote-site beneficiary interviews were taken on a sampling basis.

On the basis of the risk analysis, the verification has been planned in accordance with the latest applicable version of the Guideline: "Application of materiality in verifications, version 2/B05/". The risk assessment has been used for the verification and evidence-gathering plans.

Risk associated to the non-conduction of mandatory physical remote-site inspection for verification.

Sr. No	Identification of potential risks	Mitigation measures	Risk Mitigated
1.	Risk associated to verify project implementation and operation with respect to the registered/included documents (VPA DD) Following risk has been identified in this category: 1. Assessment of unique identification of the technology/measures and provision for avoidance of double counting 2. Assessment of the database and QA/QC procedure related to the database entry. 3. Assessment of sales receipt & warranty cards	The identified risks can be mitigated by the following measures: • Check the project database /sales records / end-user agreement for the total number of stoves distributed under the VPAs • Cross-check the total implemented measures of Solar cookers through other means as appropriate such as interviews, reviewing the web-based database, sample cross-check with sales bills etc; • Check the end user registration process including the QA/QC used during the process • Check use and appropriateness of the web-based server or any mobile application used for the end user registration • Check through video call (or video) of sample Solar cooker / with legible unique number or barcode	☒ **Yes** ☐ **No**
2	Risk associated to verify implemented monitoring plan with the registered VPA DD and applied baseline and monitoring methodology Following risk has been identified in this category: 1.Carbon waiver rights from the end-user 2.Repair & maintenance 3.Actual reporting on drop out from the technology 4.CMEs operation & management system including QA/QC for various operational	The identified risks can be mitigated by following measures: • Check the sample agreements for provision of carbon credit rights. • Check the SOP for repair & maintenance. • Check the warranty cards where applicable. • Check the database & CME's SOP for dropping out of technology and how it reflects in the database. • Interviewing the PP's staff (management, implementation, and monitoring)	☒ **Yes** ☐ **No**
3	Risk associated to verify that the actual monitoring systems and procedures comply with the monitoring systems and	The identified risks can be mitigated by the following measures: • For acceptance sampling/interviews with the end-users for confirming monitoring surveys/baseline /Usage Surveys.	☒ **Yes** ☐ **No**

	procedures described in the monitoring plan Following risk has been identified in this category: 1.Appropriateness of monitoring surveys/baseline/Usage Surveys/Leakage Assessment conducted including the traceability of measuring equipment used in testing (if any) etc. 2.Competency of the personnel involved in the monitoring process including those replated to institutions such as laboratory.	• Interviews with the Survey team • Checking the traceability of the monitoring equipment (if any) • Checking the CVs and having interviews of the team involved	
4	Risk associated to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance on whether the reported GHG emission reduction data is free from material misstatement.	The identified risk mitigated by managing access to the records during audio/video calls. It can be verified whether project has adequate controls related to data changes/updates, version tracking, traceability, security and whether data is reproduceable from the sample sheets. Furthermore, data quality control personnel can also be interviewed to establish the level of assurance.	☒ **Yes** ☐ **No**
5	Risk associated to verify that reported GHG emission data is sufficiently supported by evidence.	The identified risk mitigated during remote interview by asking complete set of data for the monitoring period and Information provided in the monitoring report can be cross-checked with other sources such as sales receipts/log. To check whether, calculations of baseline emissions and emission reduction has been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology. Furthermore, appropriate/correct emission factor value has been applied or not.	☒ **Yes** ☐ **No**
6	Any outstanding FAR(s)/pending issue(s) since the previous physical site visit.	The identified risk is mitigated by reviewing the previous Verification report and identification of FARs applicable which will be addressed during current verification.	☒ **Yes** ☐ **No**
7	Any gaps in monitoring data, if any, that cannot be justified as per applicable requirements.	As per the shared data no such gap exists for the proposed monitoring period.	☒ **Yes** ☐ **No**
8	Any design change(s)/temporary deviation(s) since the previous physical site visit.	The identified risk is mitigated by reviewing the previous verification report and finding that design change is not available.	☒ **Yes** ☐ **No**

The verification team applied a sampling approach for remote-site interviews as part of verification in accordance with paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programs of activities, Version 09.0/B06/. In accordance with paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team, and accordingly, the steps listed in paragraph 29 of the sampling standard were followed. So,

in accordance with paragraph 39 (c) of the sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 5 %, and consumer risk of 15 % in determining the VVB's sample size for which the sample size (n) is 9 for each VPA with acceptance number (c) 0.

The verification team assessed the survey database of 323 numbers of samples of survey conducted by PP for this monitoring period for VPA 01. As per the MR/01/, sample is derived from the minimum service level (MSL) for this monitoring period. For the representative sample selection for the VVB's acceptance sampling, end users were randomly selected from the list of 9 samples using a random function (=rand between (1, 323)) for VPA 01 respectively in MS excel. A total of 18 numbers were selected for acceptance sampling for the project/user survey, with 9 numbers chosen from each VPA of end users.

The remote-site interview was performed by a verification team as given in the table below.

D.3. Interviews

Interviews with solar cooker user were taken by a Verification team. All surveys were remotely conducted and screenshot of remote audit of end users with photo IDs was taken as records. Submitted photos, snapshots, and ER sheets maintained of the remote survey were checked by the verification team to confirm.

The VV plan has been shared with the CME on dated 26/06/2024 In line with the VV plan, the VVB team has interviewed the CME team members remotely involved in the survey and the end users for both VPAs.

GS3445 (VPA 01): Iridimi

No.	Name	Organization	Date	Topic	Team member
/1/	Victor Costenoble	FairClimateFund BV	09/07/2024	•Discussion on the stated goal and policy of the PoA. •Discussion on the sustainability, environmental impact, local stakeholders meeting procedure, baseline scenario, additionality, monitoring plan, Start date •Discussion on the GS registered VPA-DDs, eligibility criteria and its compliance, ongoing financial need, SDG impact, eligibility criteria for, safeguarding principles, stakeholder consultations and grievance mechanism in line with GS4GG, requirements.	Leslie Tekapso and Pankaj Kumar
/2/	Cuisseur Solaire	FairClimateFund BV	09/07/2024	Brief project description by the PP. Check the project database/sales records/end-	Leslie Tekapso and Pankaj Kumar

No.	Name	Organization	Date	Topic	Team member
				user agreement for the total number of stoves/water purification distributed under the project; a random selection of the; Interviews with the monitoring survey, KPT, Usage Survey etc.	
/3/	Fatoum Fadoul Amir	End- User PAM Identifier - B2909009	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction Number of people in household	Leslie Tekapso and Pankaj Kumar
/4/	Djiddou Abdallah Hassan	End- User PAM Identifier - B2832426	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction	Leslie Tekapso and Pankaj Kumar

No.	Name	Organization	Date	Topic	Team member
				• Incidence of itchy eyes reduction • Number of people in household	
/5/	Aziza djido Moustapha	End- User PAM Identifier - B2800137	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction • Number of people in household	Leslie Tekapso and Pankaj Kumar
/6/	Amne Ali Mahamat	End- User PAM Identifier - B2830509	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction	Leslie Tekapso and Pankaj Kumar

No.	Name	Organization	Date	Topic	Team member
				Number of people in household	
/7/	Halime Adam Mahamat	End- User PAM Identifier - B2830838	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction Number of people in household	Leslie Tekapso and Pankaj Kumar
/8/	Hissein Mahamout Saleh	End- User PAM Identifier - B2800321	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction	Leslie Tekapso and Pankaj Kumar

No.	Name	Organization	Date	Topic	Team member
				Number of people in household	
/9/	Djamila Abdraman Ali	End- User PAM Identifier - B2831058	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction Number of people in household	Leslie Tekapso and Pankaj Kumar
/10/	Magboullah Younous Bokhit	End- User PAM Identifier - B2792291	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction	Leslie Tekapso and Pankaj Kumar

No.	Name	Organization	Date	Topic	Team member
				• Number of people in a household	
/11/	Rachid Mahamat Ismail	End- User PAM Identifier - B2774125	09/07/2024	• $U_{p,y}$ (Usage rate in project scenario p during year y) • Average household annual savings i.e., decrease in expenditure on wood fuel purchase. • Total estimated amount saved by stove users on wood fuel purchase for the group of VPA's • Smoke level reduction • Incidence of coughing reduction • Incidence of respiratory illness reduction • Incidence of itchy eyes reduction • Number of	Leslie Tekapso and Pankaj Kumar

D.4. Sampling approach

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As assessed in the above sections, emission reductions for the GS3445 (VPA 01): 15,169 VERs is being claimed for this monitoring period and the total population of the stoves under GS3445 (VPA 01) is as below:

Sr. No.	VPA Reference No.	Number of Solar cookers Distributed
1.	GS 3445 (VPA 01)	4,583

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

1. Usage rate in project scenario p during year y ($U_{p,y}$)
2. Average number of meals cooked with baseline stove and Average of meal cooked for period of 7 days (DFn,stove,y)
3. Cumulative saving from an average household using project cookstoves in year y (SDG1: Sp,y)
4. Portion of HHs experiencing fewer respiratory diseases after adopting solar cooking during year y (SDG 3: RDp,y)

5. Portion households experiencing fewer eye infections after adopting solar cooking during year y (EDp,y)

As per the 'Guideline: Sampling and surveys for CDM project activities and programmes of activities, version 04.0'/B06/, paragraph 4. Sampling requirements point no 10 states[4], "Where there is no specific guidance in the applicable methodology, project proponents shall use 90/10 confidence/precision as the criteria for the reliability of sampling efforts for small-scale project activities". As per paragraph 4, project participants or the coordinating/managing 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.

Furthermore, the sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology and the PoA-DD/VPA-DD. The CME has appropriately performed the Sampling procedure in line with the applied methodology and PoA-DD / VPA-DD.

The necessary confidence/precision of 90/10 for each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted during this monitoring exercise.

Assessment of CME sampling

The paragraph 4.2 of the Emissions Reduction Calculation Tool for the "Simplified Methodology for Efficient Cookstoves," version 1.1, specifies the following requirements for surveys:

- Project target population < 300: Minimum sample size 30
- Project target population 300 to 1000: Minimum sample size 10% of group size
- Project target population > 1000 Minimum sample size 100

Based on the review of the joint Monitoring Report (MR) and the Monitoring Survey Report, the verification team observed the following for VPA 01 (Iridimi)

VAP 01
The project target population is 4,583, distributed across different age groups as follows:

Age group of use of solar cookers by beneficiaries	Total population in the sales register	Sample size to be surveyed for the Gold Standard	Sample size to be surveyed for the purposes of the project and to include potential errors
Age group 0-1 (2023)	1,612	100	115
Age group 1-2 (2022)	743	75	90
Age group 2-3 (2021)	2,219	100	115
Age group 3-12 (2012-2020)*	9	0	0
TOTAL SAMPLE SIZE	**4,583**	**275**	**320**

The verification team noted that the CME included a buffer of additional households, resulting in total survey samples of 320 for VPA 01. During the audit, 323 samples were successfully reviewed for VPA 01.

Since the surveyed samples exceeded the required minimum for VPA 01, the verification team finds the sampling approach satisfactory.

[4] https://cdm.unfccc.int/Reference/catalogue/document?doc_id=000003360#_Toc362602343

SECTION E. Verification findings

E.1. General

E.1.1. Compliance of the monitoring report with the monitoring report form

Means of verification	Document Review, Interview
Findings	CAR 5 was raised and has been resolved successfully.
Conclusion	CME has used the GS4GG template Monitoring Report, version 1.1. The verification team confirms that the latest available version of the monitoring report template has been used by the CME and the MR/01/ follows the monitoring report form and related template guide Monitoring Report, version 1.1. This confirms compliance with the §9.3.2 b (iv) of GS4GG VVS for PoAs, version 1.0, and GS4GG requirements.

E.1.2. Remaining forward action requests from validation and/or previous verifications

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Not Applicable

E.2. Programme of activities

E.2.1. Compliance of the program implementation with the registered program design document

Means of verification	Document Review, Interview
Findings	CL 06 & CAR 03 were raised and have been resolved successfully.
Conclusion	CCIPL by means of remote interview and document provided by the CME confirms that all physical features (technology, project equipment, and monitoring equipment) of the included VPAs in the PoA are in place and that the coordinating/managing entity has operated the PoA and the VPAs as per the PoA-DD and the VPA-DD. The verification team confirms the actual operation of the VPA and PoA implementation and operation in compliance with the PoA-DD / VPA-DD in order to confirm the compliance of § 9.2.4 of GS4GG VVS for PoA, Version 1.0/B03/ and GS4GG requirements.

E.2.2. Implementation and operation of the management system

Means of verification	Document Review, Interview
Findings	CL 01, CAR 06 and CAR 08 raised and have been resolved successfully.
Conclusion	The PoA management system including the record-keeping system has been explained in the PoA. During verification, the verification team based on a review of provided documents and discussion on video conferencing has assessed this management system. The verification team evaluated the management systems in place to implement the monitoring of the project activity. This included the roles and responsibilities of the monitoring staff, data collection, transfer and aggregation procedures, data storage, and archiving procedure for the monitoring system.

	Monitoring surveys were conducted by the implementation partner of FairClimateFund. To ensure the completeness and accuracy of monitoring information, an electronic database is operated and maintained by the VPA implementer. This information is further maintained by the CME. The data is further periodically checked by the CME to ensure there is no double counting. This provision for the avoidance of double counting as outlined in the PoA management system has been verified by means of review records of the sales database and on-site interviews during verification. CCIPL confirms that the project solar cookers are operational through remote video interview visits and interviews with end users. Each solar cooker distributed under the project will have unique serial number on the product. The unique serial number along with the customer details (name, address, is also stored in the sales database along with the unique serial number assigned to each product. Along with the serial number, the solar cooker technology, end username, address, commissioning date etc. had also been noted which were found to be consistent on ground. Furthermore, as per report of CME and from remote interviews conducted by VVB, it was confirmed that no disputes, inputs, and comments has received via the Continuous Input and Grievance Mechanism during this monitoring period It is noted that no changes have been observed or identified, that 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 /B02/. Verification team based on the review of the MR /01/ and provided evidence confirms that the households/end users relinquish their right of carbon credits /14/. Furthermore, the solar cooker implemented under the project is uniquely identified, thus avoiding any potential double counting. As verified through document review and off-site interviews, the project implementation and operation, all physical features of the project comply with the VPA DD /11/. Verification team has checked the information in the monitoring report /01/ and compared it against the registered VPA DD /11/ and found to be consistent. The verification team by means of document review and offsite 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.). PP has provided end user agreement /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 PP's project database as well as web-research of carbon registries (CDM, GS, VCS), provided agreements with the project owner and distributors/producers and unique identification (serial number/logo) system on the solar cooker, verification team confirms that there are no other such GS microscale projects in the region where the project intervenes. 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 responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan provided in VPA-DD. The details about the monitoring system have been provided in the Monitoring report. Verification team confirms that: a) The project activity is implemented as per registered PoA DD /03/. b) The actual operation of the proposed VPAs is in line with the registered/revised PoA DD /03/. c) It has reviewed the registered PoA DD /03/ 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. The verification team confirms that the monitoring management system of the GS4GG PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of § 9.4.14 (iv) of GS4GG VVS PoA version 1.0 and GS4GG requirements.

E.3. Voluntary project activities

E.3.1. Compliance of the VPA implementation with the included VPA design document

Means of verification	Document Review, Interview
Findings	CL 03 was raised and has been resolved successfully.
Conclusion	The implementation status of the PoA and the voluntary project activities is:

Project Participants:	FairClimateFund
Title of PoA:	Solar Cooking in Chad (POA)
Title of VPA:	GS3445 Solar cooking in Chad, Iridimi (VPA 01)
GS Reference No:	PoA – GS1075 VPA 01 - GS3445
Start date of VPA	VPA 01 - 01/01/2012
Applied Baseline and monitoring methodology:	The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1, (April 2020)
Project Scale:	Microscale
Location of the project activity:	Republic of Chad
Reported monitoring Period verified in this verification:	Iridimi (VPA 01): 01/06/2022 to 31/12/2023

The VPAs distribute the Solar cookers. The Solar cookers under the VPA use solar energy to generate heat. These solar cookers are efficient in using solar energy to generate heat, thus saving fuel (Wood) compared to the traditional stoves.

	The number of stoves deployed under each VPAs has been confirmed by the monitoring database and as stated below: **Sr. No.** | **VPA Reference No.** | **Number of solar cookers Distributed** 1. | VPA 01 - GS3445 | 4,583 It was confirmed that FairClimateFund is the Coordinating/Managing Entity for the PoA. The actual voluntary project activity/ies are in line with the VPAs. FairClimateFund is the VPA implementer for the VPAs. The information (including data and variables) provided in the MR /01/ is in line with the details provided in the VPA-DD. CCIPL's verification team considers the project description of the project contained in the PoA and the VPAs to be complete and accurate. The VPAs comply with the relevant methodology, tools, forms, and guidance. In accordance with §9.4.7 (d) of GS4GG VVS for PoAs, version 1.0/B03/, the verification team confirms that there is no information (data and variables) in the current monitoring period that are different from that stated in the approved revised VPA-DD which has caused an increase in the estimates of GHG emission reductions. The verification team has assessed the project to check any proposed or actual changes to the project design in accordance with §8.4.1 (b) of GS4GG VVS for PoAs, Version 1.0 /B03/. In the opinion of CCIPL, there is no change to the project design. After reviewing the data shared by CME, CCIPL's verification team confirms that the VPAs are implemented within the boundary of the PoA as described in the PoA-DD. Temporary deviations from the approved Monitoring & Reporting Plan, which is mentioned under section B.2.1 of the MR /01/.

E.3.2. Compliance with the registered monitoring plan with applied methodologies and standardized baselines

Means of verification	Document Review, Interview
Findings	CAR 4 was raised and has been resolved successfully.
Conclusion	The verification team can confirm that the monitoring plan contained in the VPAs is in accordance with the approved methodology applied by the project activity, i.e., The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020). The monitoring plan is in accordance with the approved methodology, The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020) is applied by the component project activities and as provided in the VPA. The verification took cognizance of § 9.2.5 of GS4GG VVS for PoAs, Version 01.0/B03/ and GS4GG requirements.

E.3.3. Compliance of monitoring activities with the registered monitoring plan

The monitoring has been carried out in accordance with the monitoring plan contained in the VPA-DD. This conclusion has been made based on the assessment below.

E.3.3.1. Data and parameters fixed ex-ante or at the renewal of crediting period

Means of verification	Document Review, Interview

Findings	N/A
Conclusion	The verification team confirms that the Data and parameters fixed ex-ante are following the registered VPA-DD and the monitoring plan. Please refer to Appendix 5 for a detailed analysis of the ex-ante parameters. For the current monitoring period; Iridimi: 01/06/2022 to 31/12/2023 for VPA 01, CME has applied for 3 deviation and all three were approved by Gold Standard under deviation 411, 552 and 695/05/. No changes were requested to the start date of the crediting period for Iridimi (VPA-01). The VVB FAR in last verification report is now a null point since the Gold Standard has approved the deviation request (DEV 695/05/) The verification took cognizance of § 7.14.3 (a) of GS4GG VVS for PoAs, Version 1.0/B03/ and GS4GG requirements.

E.3.3.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	CAR 02 was raised and has been resolved successfully.
Conclusion	The Verification team confirms that the Data and parameters monitored are following the VPA-DD and the monitoring plan. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of this report. The verification took cognizance of § 344, § 7.14.3 (b) of GS4GG VVS for PoAs, Version 1.0/B03/ and GS4GG Requirements.

E.3.3.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	CL 02,CL 04, CAR 01 were raised and have been resolved successfully.
Conclusion	Monitoring surveys were conducted during the current monitoring period. The total population of the solar cooker under VPA 01 is considered for the monitoring period are 4,583 for VPA 01. The monitoring parameters required to be monitored through the sampling plan are: 1. The average usage rate of the appliance (Up,y) 2. Average number of meals cooked with baseline stove and Average of meal cooked for period of 7 days (DFn,stove,y) 3. Cumulative saving from an average household using project cookstoves in year y (SDG1: Sp,y) 4. Portion of HHs experiencing fewer respiratory diseases after adopting solar cooking during year y (SDG 3: RDp,y) 5. Portion households experiencing fewer eye infections after adopting solar cooking during year y (EDp,y) Across VPA random sampling was applied for the VPA by CME for the selection of the monitoring samples with 90/10 confidence/precision for all the parameters of annual monitoring which is deemed acceptable as per the PoA and VPAs.

	Applying the random number generator, the solar cooker were randomly picked from the defined population up to the required sample size as calculated by the CME. The verification team confirms that the applied method for sample size calculation is in accordance with the PoA-DD / VPA-DD. The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology and the PoA/ VPA-DD. The CME has appropriately performed the Random Sampling procedure in line with the applied methodology and is best suited for this type of project. As the PoA mentions the option for a random Sampling procedure, it is acceptable to the verification team. The necessary confidence/precision of 90/10 for each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted and through interviews with end users, PP has taken 320 random samples from VPA 01 for survey from database, the verification team applied a sampling approach for remote interviews as part of verification in accordance with paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programs of activities, Version 09.0/B06/. In accordance with paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team, and accordingly, the steps listed in paragraph 29 of the sampling standard were followed. So, in accordance with paragraph 39 (c) of the sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 10 %, and consumer risk of 20 % in determining the VVB's sample size for which the sample size (n) is 18 with acceptance number (c) 0. A total of 18 numbers were selected for acceptance sampling for the project/user survey, with 9 numbers chosen from each VPA of end users. End user list with names can be found under section D.3 of this report. Sampling approach applied: Monitoring survey- Simple Random sampling. Project field test- Simple random sampling The VVB team has cross checked the random generator used by the Project developer to determine the random samples for each group. Data collection and analysis: The results of the survey were checked through acceptance sampling and found to be correct. Moreover, filled survey forms were checked to corroborate the monitoring survey information in the excel. Reliability of test: The verification team has verified the ER calculation spreadsheets /02/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under methodology correctly. The verification team confirmed that the sampling plan and the parameter values are in accordance with the monitoring plan provided in PoA DD /03/ and the applied methodology "The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020)/B07/"

E.3.4. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Document Review, Interview
Findings	N/A
Conclusion	No device is used for measurement. Hence this point is Not applicable.

E.3.5. Emission Reduction Quantification

Assessment of data and calculation of emission reductions or net removals In line with the requirement of Gold Standard Methodology. The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020)/B07/ the verification team has reviewed the Monitoring report /01/ and ER spreadsheets /02/ to check the arithmetic calculation of the emission reductions. The equation used for the calculation is compared with those provided in the VPA and The Gold Standard Methodology. The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020).

E.3.5.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	CL 05 & CL 07 were raised and have been resolved successfully.
Conclusion	When the baseline fuel and the projected fuel are different and/or the emission factors are different, the overall GHG reductions achieved by the project activity in year y are calculated as follows: $ER_y = \sum_{0to1}^{xtoy} Np,y * P_y * U_{p,y} * (f_{NRB,y} * E_{Fb,fuel,CO2} + EF_{b,fuel,non\_CO2}) * (1 - DF_{b,Stove,y})$ Where: $N_{p,y}$ — Number of projects cookstoves of each age group operational in the year y P_y — Quantity of firewood that is saved in the year y (tones per household in year y) $U_{p,y}$ — Usage rate for project cookstoves in year y, based on adoption rate and drop off rate revealed by usage surveys (fraction) $f_{NRB,b,y}$ — Fraction of biomass, used in year y for baseline scenario, which can be established as non-renewable. $EF_{b,fuel,CO2}$ — CO2 emission factor of firewood that is substituted or reduced. (Default value for wood fuel 1.747 tCO2/ton of wood) $EF_{b,fuel,non\_CO2}$ — Non-CO2 emission factor of firewood that is substituted or reduced. (IPCC Fifth Assessment Report: Climate Change (IPCC AR5) value for wood fuel 0.58 tCO2/ton of wood) $DF_{b,Stove,y}$ — Usage of baseline cookstove during the year y (fraction) in project scenario x — y – 1 y — Year of the crediting period *Determination of quantity of biomass saved (Py):* Quantity of fire wood that is saved (P,y) is estimated as follows: $P_y = B_{b,y} * (1 - \frac{\eta b}{\eta p,y})$

Where:

$B_{b,y}$	Quantity of firewood consumed in baseline scenario during year y (tonnes per household per year)
$\eta_{p,y}$	Efficiency of project cookstove in year y (fraction)
η_b	Efficiency of the baseline cookstove being replaced (fraction). A default value of 10% shall be used if the replaced cookstove is a three stone fire, or a conventional device without a grate or a chimney i.e., with no improved combustion air supply or flue gas ventilation

Determination of project cookstove efficiency (ηp,y and ηp):
Efficiency of project cookstove in year y (ηp,y) is estimated as follows:

$$\eta_{p,y} = \eta_p * (DF_\eta)^{y-1} * 0.94$$

Where

$\eta_{p,y}$	Efficiency of project cookstove in year y (fraction)
η_p	Efficiency of project cookstove (fraction) determined at the start of the project activity
DF_η	Discount factor to account for efficiency loss of project cookstove per year of operation (Fraction). The default value for this parameter is 0.99 i.e., 1% efficiency loss/year.
0.94	Adjustment factor to account for uncertainty related to project cookstove efficiency test

From the above equation and the parameter values, emission reductions for the period 01/06/2022 to 31/12/2023 (inclusive of both dates) for Iridimi (VPA 01) respectively are calculated as:

Specific-case VPA reference number	Emission Reductions (tCO_2e)
GS 3445 (VPA 01)	15,169

The verification team confirms that the calculation of emission reductions is in accordance with the applied methodological equation and the VPAs. Calculations have been checked and confirmed from the ER spreadsheet/02/.

The verification took cognizance of § 12.13.2 of GS4GG VVS for PoA, version 1.0/B03/ and GS4GG requirements.

E.3.5.2. Calculation of project GHG emissions or actual net GHG removals by sinks

>> NA.

Emissions from the project are considered to be 0 tCO2e for both VPA 01. Solar cookers do not emit emissions in the project scenario.

E.3.5.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	N/A
Conclusion	As per para 6 of the applied methodology, the CME has conducted the survey to analyse the applicability of leakage emissions. It is found that the project activity doesn't qualify for any of the criteria for considering leakage emission. Hence, As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves, the net emission reductions (ER_y) for a micro-scale programme of activities (POA) need to be discounted by a factor of 0.95 to account for leakages related to non-renewable biomass saved by the project activity.

E.3.5.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	N/A
Conclusion	The 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 VPAs. The total number of ERs achieved during the monitoring period for GS3445 (VPA 01) is 15,169 VERs respectively. In summary, the verification team confirms that for vintage year 2022 and 2023 the actual emission reduction is higher than the estimated in the VPA-DD for the current monitoring period. The verification took cognizance of § 12.13.2 GS4GG VVS PoAs, version 1.0/B03/ and GS4GG requirements.

Title and GS reference number of the VPA	**GHG emission reductions or net GHG removals by sinks (tCO_2e)**	
	Amount achieved from 1st June 2022 to 31st December 2022	**Amount achieved from 1st January 2023 to 31st December 2023**
Solar cooking in Chad, Iridimi (VPA 01) GS3445	5,348 tCO_{2e}	10,000 tCO_{2e}

E.3.5.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included VPA

Means of verification	Document Review
Findings	N/A
Conclusion	A comparison of the actual GHG emission reductions with the estimates in the included specific VPA is given in the below table. The verification team took cognizance of § 356 of CDM VVS for PoAs, version 03 and GS4GG requirements.

Title and UNFCCC reference number of the VPA	Value estimated in an ex-ante calculation in the included VPA-DD(s)	Actual values achieved by the VPAs during this monitoring period
Solar cooking in Chad, Iridimi (VPA 01) GS3445	2022: 5,833 tCO2e 2023: 10,000 tCO2e	2022: 5,348 tCO_{2e} 2023: 10,000 tCO_{2e}

E.3.5.6. Remarks on difference from estimated value in included VPA

Means of verification	Document review
Findings	N/A
Conclusion	The actual emission reductions for the IRIDMI camp (VPA 01) is somewhat lower, compared to the ex-ante estimates in the VPA-DDs. The CME noted this discrepancy in section E.6 of the MR/01/, which was further evaluated by the VVB.

E.3.6. Assessment of reported sustainable development co-benefits.

Means of verification	Document Review, Interview
Findings	N/A
Conclusion	The Verification team confirms that the data and parameters monitored related to sustainable development co-benefits are in compliance with the VPAs and the monitoring plan. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of the verification report. The verification took cognizance of § 7.9.1 of GS4GG VVS for PoAs, Version 1.0/B03/.

SECTION F. Internal quality control

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The final verification report passed a technical review. A technical reviewer qualified in accordance with the CCIPL's qualification scheme for GS4GG validation and verification has performed the technical review.

SECTION G. Verification opinion

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Carbon Check (India) Private Ltd. has performed the third verification of the GS Programme of Activities "Solar Cooking in Chad (POA)" (hereafter referred to as "Programme of Activities or PoA") for the Solar cooking in Chad, Iridimi (VPA 01) GS3445 .

The verification team assigned by the VVB concludes that the PoA (Version 10.0, dated 23/09/2020), Solar cooking in Chad, Iridimi (VPA 01) GS3445, as described in the VPA-DD and the Monitoring report (Version 3.0, dated 17/01/2025), meet all relevant GS4GG requirements and requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM M&P, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board.

Verification methodology and process:

The Verification team confirms the contractual relationship signed on 22/05/2024 between the VVB, Carbon Check (India) Private Ltd., and (FairClimateFund). The team assigned to the verification meets

the Carbon Check (India) Private Ltd.'s internal procedures including the UNFCCC and GS4GG requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and Carbon Check's procedures and requirements.

The verification is being performed as per the requirements described in the GS4GG VVS for PoAs, version 1.0/B03/, and GS4GG requirements and constitutes the review and completion of the following steps:

- Reviewing the PoA GS1075 (Version 10.0 dated 23/09/2020), the VPA for Solar cooking in Chad, Iridimi (VPA 01) GS3445 to include the monitoring plan and the corresponding verification report.
- Previous verification and certification reports and the monitoring reports for the previous monitoring periods.
- Desk review of the validation report, MR/01/, and other relevant documents including documents related to the project activities in emission reductions.
- Review of the applied monitoring methodology (The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020)/B07/.
- Review of any CMP and EB decisions, clarifications, and guidance.
- Resolution of CARs and CLs raised during verification.
- Issuance of Verification Report.

The voluntary project activities were correctly implemented according to the selected monitoring methodology, monitoring plan, and VPA/s. The monitoring system was installed, and maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review, the verification team confirms that the PoA has resulted in the Solar cooking in Chad, Iridimi (VPA 01) GS3445: 15,169 tCO_2e of emission reductions for the period 01/06/2022 to 31/12/2023 (inclusive of both dates) for VPA 01 during the fifth monitoring period and Solar cooking in Chad, Iridim (VPA 01) GS3445: 15,169 tCO2e during the first monitoring period and achieved SDG benefits as detailed in Appendix 6 for the period.

Verified emission reductions:

Specific-case VPA reference number	Emission Reductions (tCO_2e)
GS3445 (VPA 01)	15,169

The sustainable development contribution achieved during this monitoring period is shown in Appendix 6. CCIPL as a VVB is therefore pleased to issue a positive verification opinion in the attached Certification statement.

SECTION H. Certification statement

>>

Carbon Check (India) Private Ltd., the VVB, has performed the verification of the GS Programme of Activities, GS1075 "Solar Cooking in Chad (POA)" in "Republic of Chad". The PoA involves the distribution of solar cookers. The activity involves the distribution and maintenance of domestic solar cookers through local implementation partners (IP). The solar cookers distributed under VPA are efficient in generating heat using solar energy instead of using three-stone stoves typically used in the baseline. By using solar cookers along with inefficient stoves, the PoA will save on the consumption of woody biomass/charcoal and reduces GHG emissions.

The voluntary project activities of the Programme of Activities are designed to generate emission reductions through the distribution of solar cookers in Republic of Chad. The CME and VPA implementer are responsible for the collection of data in accordance with the monitoring plan and reporting GHG emissions reductions from the voluntary project activity/ies. It is VVB's responsibility to express an independent verification statement on the reported GHG emission reductions from the component

project/s. The VVB does not express any opinion on the selected baseline scenario or on the validated and registered PoA-DD/VPA-DD. The verification is carried out in line with the GS4GG VVS and its requirements.

The verification was performed to identify the compliance of the component project with implementation and monitoring requirements and to verify the actual amount of emission reductions achieved by the project, through obtaining evidence that included.

i) Checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and

ii) The collection of evidence supporting the reported data.

The verification is based on:

- PoA, Version 10.0 dated 23/09/2020.
- Solar cooking in Chad, Iridimi (VPA 01) GS3445 are included in the PoA and its monitoring plan for the monitoring period is from : 01/06/2022 to 31/12/2023 (inclusive of both dates).
- Approved GS monitoring methodology The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020)
- Validation report for the PoA and the VPA.
- Monitoring report Version 3.0 dated 17/01/2025.

This statement covers the verification period from 01/06/2022 to 31/12/2023 (inclusive of both dates) for VPA 01.

The VVB had raised one (0) FAR, 7 clarifications, and 8 Corrective action requests which have been resolved by the CME.

The VVB considers it necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the monitoring methodology and that the monitoring plan contained in the VPAs is fairly stated.

The VVB, hereby certifies that the project activity achieved emission reductions by sources of GHG equal to GS3445 (VPA 01): 15,169 tCO_2e for the period 01/06/2022 to 31/12/2023 (inclusive of both dates) for VPA 01 and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Limit
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CER	Certified Emission Reduction
CL	Clarification Request
CME	Co-ordinating and Managing entity
VPA	Voluntary Project Activity
VPA-DD	Voluntary Project Activity Design Document
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DR	Document review
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
GS4GG	Gold Standard for the Global Goals
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MP	Monitoring Period
MR	Monitoring Report
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
QC/QA	Quality control /Quality assurance
SDG	Sustainable Development Goal
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
VVB	Validation & Verification Body
MSL	Maximum sampling Limit

Appendix 2. Competence of team members and technical reviewers

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

Mr. Pankaj Kumar

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), A 6.4 AS (V1.0) 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 Expert	☐ Expert Social aspect	☐ Expert Environment	

☒ Regional 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

20th January 2025

Mr. Vikash Kumar Singh
Director-Compliance

Expiry Date

19th January 2026

Mr. Amit Anand
CEO

Revision History of the document:

Revision date	Summary of changes
Jan 2024	Initial Adoption
April 2024	Revision due to A6.4 implementation
Jan 2025	Changes due to updates in organization structure and annual revision

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Tekapso Leslie

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), A 6.4 AS (V1.0) 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 Expert	☐ Expert Social aspect	☐ Expert Environment	

☒ Local Expert for Cameroon, Madagascar, Cote d' Ivoire, Burkino Faso and all french speaking countries

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

20th January 2025

Mr. Vikash Kumar Singh
Director-Compliance

Expiry Date

19th January 2026

Mr. Amit Anand
CEO

Revision History of the document:

Revision	Summary of changes
Dec 2023[1]	Change in template due to revision in TA and function
April 2024	Revision due to A6.4 implementation
Jan 2025	Revision due to update in the organization structure and annual revision

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

Ms. Indumathi C

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of DM AS (V7.0), A 6.4 AS (V1.0) 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 Expert	☒ Expert Social aspect	☒ Expert Environment	
☒ Regional Expert for India and Sri Lanka			

in the following Technical Areas:

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

Issue Date

20th January 2025

Expiry Date

19th January 2026

Mr. Vikash Kumar Singh
Director-Compliance

Mr. Amit Anand
CEO

Revision History of the document:

Revision date	Summary of changes
Dec 2023[1]	Change in the template due to revision in TA and function
April 2024	Initial Adoption
Jan 2025	Changes due to updates in organization structure and annual revision

CCIPL_FM 7.9 Certificate of Competency_V6.0_27122024

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

Appendix 3. Documents reviewed or referenced.

No.	Title	Provider
/01/	Monitoring report: a. Joint_Monitoring_Report IRIDIMI & TOULOUM, version 3.0 (2022 & 2023) _17-01-2025 b. Joint_Monitoring_Report IRIDIMI & TOULOUM, version 1.4 (2022 & 2023) _15.10.2024 c. Joint_Monitoring_Report IRIDIMI & TOULOUM, version 1.3 (2022 & 2023) _08.10.2024 d. Joint_Monitoring_Report IRIDIMI & TOULOUM, version 1.2 (2022 & 2023) _25.09.2024 e. Joint_Monitoring_Report IRIDIMI & TOULOUM, version 1.1 (2022 & 2023) _13.05.2024	CME
/02/	ER calculation- Iridimi 5th MP-Round 2 Review Sep_2024	CME
/03/	Registered PoA DD 1075 and ER Sheet	CME
/04/	GS12011 - Ex-ante ER calculation VPA-02 03.01.2024(1) (2)	CME
/05/	GS4GG Deviation • Dev_411 • Dev_552 • Dev_695	CME
/06/	Grievance Books_2022_2024_Iridimi and Touloum.pdf	CME
/07/	• Kobo formulaire 2023 • Kobo Survey_English version	CME
/08/	• Copy of Iridimi - 2024 Sampling UPDATED • Touloum - 2024 Sampling UPDATED 1st MAR 2024	CME
/09/	CP Renewal_GS1075_GS3445-Final round_APPROVED_2020.pdf	CME
/10/	Example_Sample_Questionnaire_and_photo_KoboToolbox.pdf / Usage Survey (Enquête d'usage) 2022-23 _ KoboToolb	CME
/11/	GS3445 GS4GG VPA-DD v11 23092020_final.pdf (VPA 01)	CME
/12/	Kobo_Registration_Example.pdf	CME
/13/	2022_2023 Usage Survey Screenshot_PoA 1075_Solar Cooking in Chad	CME
/14/	• Signed_Carbon Waivers_Iridimi Camp •	CME

/15/	Training and Awareness Raising Activity Records_Touloum and Iridimi.pdf	CME
/16/	Declaration of No Double Counting_FairClimateFund-signed FCF	CME
/17/	2023 Monitoring data Iridimi R1 Review July 2024	CME
/18/	Contract between CME and VVB	
/B01/	Principles-Requirements, version 1.2	GS4GG
/B02/	Programme-of-Activity-Requirements, version 2.1	GS4GG
/B03/	Validation-and-Verification-Standard, version 1.0	GS4GG
/B04/	Site visit and remote audit requirement" v2.0	GS4GG
/B05/	Guideline: Application of materiality in verifications" Version 02.0	GS4GG
/B06/	Guideline: Sampling and surveys for CDM project activities and programmes of activities, version 04.0 Standard: Sampling and surveys for CDM project activities and programs of activities, Version 09.0	GS4GG
/B07/	The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 (April 2020	GS4GG

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

1.1 Clarifications (CLs)

Table 1 Clarifications Required.

CL ID	01	Section no.	B.1	Date: 20/06/2024
Description of CL				
In section B.1 , CME shall clarify the maintenance procedure and record keeping for both VPAs i.e. VPA 01 and VPA 02.				
Project participant response				**Date: 23/09/2024**
The maintenance and record keeping procedure for the registration, recording and subsequent management of the Iridimi (VPA 01) and Touloum VPA has now been included under section B.1 of the MR.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the updated MR and found that CME has now updated the maintenance and record keeping procedure for the registration, recording and subsequent management of the Iridimi (VPA 01) and Touloum (VPA 2) in section B.1. **Hence, CL is closed.**				

CL ID	02	Section no.	D.2	Date: 20/06/2024
Description of CL				
CME shall clarify how the usage rate is 100% even in the 5th monitoring period.				
Project participant response				**Date: 23/09/2024**
The following explanation for the usage rate of 100% has been added to the joint monitoring report (section C: Usage Rate: Iridimi (VPA-01) and Touloum (VPA-02). The use of solar cookers remain critical in the Touloum and Iridimi refugee camps, where refugees have extremely limited resources and where wood fuel is in short supply, and expensive. The use of solar cookers has allowed families to diversify the tools available for cooking on an everyday basis. Simply put, families/beneficiaries have no other choice than to cook with the Solar Cookers as they remain an indispensable component of the everyday culinary routine. **Given the context of the refugee camp, there are no other viable options.** In addition, and most importantly solar cookers are replaced and repaired regularly to ensure there are functioning at all times. The available of ADES team in the camp enable them to collect the needs of beneficiaries and intervene with short notice. Although the usage rate remains 100%, the ER calculations are because, on average, households are using the solar cooker to cook only 49.3% of meals, while the rest of their meals (50.7%) are cooked using				

traditional stoves (predominantly three stone fires: trois pierres). As such, the 100% usage rate is directly applied to 49.3% of meals.
Documentation provided by project participant
VVB assessment **Date: 24/09/2024**
VVB has reviewed the updated monitoring report and responses and determined that the response is appropriate. According to the usage survey for Iridimi (VPA 01) and Touloum (VPA 02), the percentage of meals cooked with solar cookers is 49.3% (see cell “CJ” in Iridimi and “CH” in Touloum of respective Usage Survey & SDG Calcs tab of ER sheet), and a 100% usage rate supports this. Further, during a remote audit, VVB confirmed that all selected sampled end users were utilizing solar cookstoves. **Hence, CL is closed.**

CL ID	**03**	**Section no.**	**D.4**	**Date: 20/06/2024**
Description of CL				
Total population of solar cooker for the year 2022, 2023 and (2012-2020) presented in MR are not consistent with the population records of VPA 01 Iridimi-Sampling work sheet. CME shall clarify.				
Project participant response				**Date: 23/09/2024**
The version shared with the VVB was the exact same version that was shared with ADES team in advance of the monitoring survey. However, HAMERKOP after QA/QC procedure during the writing of the monitoring report, found some duplicate names which were removed from this earlier version and a CLEAN version was produced with no duplicates. This data clean-up, completed after the survey did not change the number of samples needed, nor did it have any effect on the names of those that were to be chosen for the survey. This final version merely reflected a DATA clean-up/QA/QC procedure. The latest, clean version of the Iridimi Sampling Work sheet has been updated and shared with the VVB as a supplementary data sheet. This sampling worksheet was uploaded as a supplementary document named **Copy of Iridimi - 2024 Sampling UPDATED** This new data sheet precisely reflects the age groups and the TOTAL sample size as indicated in section D.4 (page 36) of the joint MR.				
Documentation provided by project participant				
This sampling worksheet was uploaded as a supplementary document named **Copy of Iridimi - 2024 Sampling UPDATED**				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the updated MR and responses and found that CME has now clarified the population inconsistencies for solar cookers in VPA 1 for the years 2022, 2023, and 2012-2020, as detailed in the MR and aligned with the population records from the VPA 01 Iridimi-Sampling worksheet. **Hence, CL is closed.**				

CL ID	04	Section no.	D.4	Date: 20/06/2024
Description of CL				
The total sample size for Iridimi VPA 01 presented in MR are not consistent with the population records of VPA 01 Iridimi-Sampling work sheet. CME shall clarify.				
Project participant response				**Date: 23/09/2024**
Please see comment above. This was due to final QA/QC procedure to remove duplicate names during the writing of the MR.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the updated MR and named Copy of Iridimi - 2024 Sampling_ADES and found that CME has now the total sample size for Iridimi VPA 01 presented in MR are not consistent with the population records of VPA 01 Iridimi-Sampling work sheet. **Hence, CL is closed.**				

CL ID	05	Section no.	E.5	Date: 20/06/2024
Description of CL				
VVB has found that the actual ER as per ER sheet - Iridimi is 10,258 tCO2e. CME shall justify why only capped figure is mentioned for both VPAs.				
Project participant response				**Date: 23/09/2024**
The actual ERs for each camp (Iridimi and Touloum) are clearly stated within the MR on page 3 (Footnotes for Table 1) as well as on page 40-41 (section E.4). These figures are above the 10,000 tCO2e allowed under the microscale project, yet still clearly outlined in the MR.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the responses, ER sheet, and updated MR, and found that CME has clarified the region for using the capped figure of ERs for Iridimi (VPA 01) in accordance with § 2.1.1 (c) of GS4GG Microscale Project Requirements, Version 1.2. **Hence, CL is closed.**				

CL ID	06	Section no.	E.5	Date: 20/06/2024
Description of CL				

In section E.5, CME shall clarify the increase in Euro/HHs (SDG 1) from approved VPA DD (Iridimi Camp - VPA 01).

Project participant response	**Date: 23/09/2024**

Section E.5.1 (Iridimi) has now been updated with the following explanation:

The estimation of wood fuel savings in the approved VPA DD were calculated based on 2021 usage survey findings indicating an estimated yearly accumulated money saving from an average representative household. This equated to 62,612 XOF per annum. It is likely that the most important factor contributing to the increase in the yearly HH savings at the Iridimi and Touloum Camps is due to the escalation of violence in neighbouring Sudan which brought a renewed influx of refugees into both the Iridimi and Touloum camps. ADES reported an increase in wood fuel prices due to a shortage of supply in and the increased demand in the region. Wood fuel is not readily available in the region and much of it is transported from further south. A supply line under increased disruption and stress due to regional violence.

Further, the usage rate used to estimate SDG1 in the registered VPA DD for Iridimi (2021) was 89.4% versus the actual rate used to calculate the HH savings of 100%. This may further explain the increase in savings due to the high adoption and utilisation rate of the stoves.

Documentation provided by project participant

VVB assessment	**Date: 28/08/2024**

VVB has assessed the report and found that CME has clarified the increase in Euro/HHs (SDG 1) from approved VPA DD (Iridimi Camp - VPA 01) in section E.5 of the updated MR and same has been updated in section 3.5 of the verification report.

Hence, CL is closed.

CL ID	**07**	**Section no.**	**E.5**	**Date: 20/06/2024**

Description of CL
In section E.5,CME shall clarify the increase in emission reduction from approved VPA DD (Touloum Camp-VPA 02).

Project participant response	**Date: 23/09/2024**

Section E.5.1 (Touloum Camp) has been updated with the following justification for increase in ERs in Touloum camp as compared to the approved VPA DD.

The estimated ex-ante ERs for the period of February to December 2022 at the Touloum camp was 5,947 tCO2e. The actual values achieved during this period came to 8,940 tCO2e (equivalent to 9,753 tCO2e pro rata for 12 months). The reason for the higher than anticipated (estimated ERs) was due to the fact the demand, and distribution of Solar Cookers at the Touloum Camp occurred more quickly and efficiently than anticipated. Given that the nearby refugee population in the Iridimi camp had already been benefiting from solar cookers for several years, the Touloum refugees were already aware of the technology (through dialogue and conversations with ADES team) and its potential to greatly facilitate the everyday lives and alleviate economic and social difficulties within the refugee camp. As a result, when the distribution of solar cookers began, the adoption and enthusiasm to participate in the program was already strong. Further to this, ADES had already developed expertise in solar cooker manufacturing and distribution from their

previous experience at the Iridimi camp, which expediated and thus exceeded the estimates of the number of cookers that could be distributed in that first period (February to December 2022). Though there is a minor discrepancy, the actual values remain only slightly higher than the anticipated values for this period. Further to the round 2 review assessment clarification request, the Joint monitoring report has now been updated (section E.5.1) with the comparison of the number of solar cookers listed in the validated project design document for the Touloum Camp as compared to those distributed during the first monitoring period. These numbers correspond to the resulting increase in anticipated ERs curing the monitoring period as compared to the anticipated number of ERs from the project VPA DD. The consultants have now amended the ex-ante emissions reductions for the Touloum Refugee Camp (VPA-02) which reflect the numbers reported in the Validated project Design Document. A previous error was detected by the consultants as the previous reporting of the ex-ante ERs for the period February-December 2022 of 7,699 t.CO2e and the period January – December 2023 of 10,000 t.CO2e has now been changed to 5,947 t.CO2e and 8,099 tCO2e, respectively. The consultants have now provided additional documentation to the VVB in evidence of these ex-ante estimations (see below)
Documentation provided by project participant
GS12011 – Ex-ante ER Calculation VPA-02 03.01.2024 Excel sheet **GS12011 GS4GG VPA-DD VPA 02 v.2 04.01.pdf**

VVB assessment	**Date: 24/09/2024**
VVB has reviewed the responses and found that CME has clarified the increase in emission reductions from the approved VPA DD (Touloum Camp-VPA 02). **Hence, CL is closed.**	

1.2 Corrective action required (CARs)

Table 2 Corrective action Required.

CAR ID	**01**	**Section no.**	**C**	**Date: 20/06/2024**
Description of CAR				
CME shall submit the random survey size in line with TEMPLATE GUIDE - Monitoring Report, version 1.1.				
Project participant response				**Date: 23/09/2024**
The random survey size for each sampling group is shown on the provided Excel documents: Copy of Iridimi - 2024 Sampling UPDATED and the Touloum - 2024 Sampling UPDATED 1st MAR 2024. The first tab shows the summary the sampling selection. Under each separate selection age tab, the RAND() function was used to randomly select the appropriate number of sampled beneficiaries as according to the methodological stipulation and described in the MR. The use of the RAND() function can be found/demonstrated in column I in both worksheets. The procedure for this selection process has also been explained on page 36 of the MR. Additional footnotes have now been provided on page 39 of the Joint Monitoring Report to explain the selection of randomly selected usage survey samples and alignment with the Gold Standard Regulations.				
Documentation provided by project participant				

VVB assessment	Date: 24/09/2024
VVB has assessed the responses and updated MR and found that the randomly selected samples are in line with Copy of Iridimi - 2024 Sampling UPDATED and the Touloum - 2024 Sampling UPDATED 1st MAR 2024. And, CME has provided the clarification for the **randomly selected samples in footnote 8 & 9.** **Hence, CAR is closed.**	

CAR ID	02	Section no.	D.2	Date: 20/06/2024
Description of CAR				
In section D.2 of the MR and found that CME has considered that Discount factor to account for efficiency loss of project cookstoves (DFn) is zero. CME shall provide supporting documents to validate the claim of 0% efficiency loss.				
Project participant response				**Date: 23/09/2024**
We acknowledge that a 100% thermal efficiency is not possible as the laws of thermodynamsolar cooker preclude any stove from operating without any energy loss during the transfer of thermal energy from the sun to the solar cooker. However, this justification is based purely on the fact that the solar cookers operate on 100% solar energy and do not require any woodfuel or other fuel to operate. This efficiency is being used for the purposes of calculating the difference in the thermal efficiency in the project scenario (solar cookers) vs the baseline scenario (firewood; as per methodology requirements) and use the equation provided by the methodology. The PoA has been running since 2016 on this basis. Further, we highlight that the Gold Standard confirmed that the methodology was applicable to this PoA/VPA at the time of the PoA/VPA registration/design certification for the Touloum Camp. The latest deviation request approved for the Touloum camp also confirmed the use of this approach (see doc DEV_411). Finally, to further demonstrate the previous approval of the approach, HAMERKOP has provided the Approved Gold Standard Validation Report (CP Renewal_GS1075_GS3445-Final round_APPROVED_2020) from SustainCert for the Touloum (VPA-02) camp in the supplementary information shared with the VVB. This was also amply discussed and documented during the project design certification and the VVB should refer to these documents rather than ask the same questions already asked each time a VVB look at this PoA.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the responses and found that CME has clarified the considered that Discount factor to account for efficiency loss of project cookstoves (DFn) is zero. Further VVB found that that the Gold Standard confirmed the applicability of this methodology to the PoA/VPA at the time of its registration/design certification. The latest deviation request approved for Touloum Camp also support this approach (see document DEV_411). To further support this, HAMERKOP has provided the Approved Gold Standard Validation Report (CP Renewal_GS1075_GS3445-Final round_APPROVED_2020) from SustainCert for the Touloum (VPA-02) camp. **Hence, CAR is closed.**				

CAR ID	03	Section no.	E.2	Date: 20/06/2024
Description of CAR				
CME shall include the illustration of VPA 02 in SDG 1, 3 & 7.				
Project participant response				**Date: 23/09/2024**
The illustration of the calculations for Touloum (VPA 02) has now been updated under section E.2. for SDG 1, 3 & 7.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB has assessed the updated MR and found that CME has now updated and included the illustration of Touloum (VPA 02) in SDG 1, 3 & 7 in section E.2 of the updated MR. **Hence, CAR is closed.**				

CAR ID	04	Section no.	G.1	Date: 20/06/2024
Description of CAR				
As per grievance log sheet, CME shall documents all input and grievances received during this monitoring period for both VPAs. CME shall submit grievance logbook.				
Project participant response				**Date: 23/09/2024**
The Grievance Books for Iridimi and Touloum Camp for the year 2022, 2023 and 2024 have been uploaded to the supplementary information list provided to the VVB. This can be found under: Grievance Books_2022_2024_Iridimi and Touloum.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
CME has now provided the grievance logbook. **Hence, CAR is closed.**				

CAR ID	05	Section no.	ER Sheet	Date: 20/06/2024
Description of CAR				
In cell AN of the Usage survey & SDG Calcs, the date format is not in line with Template guide, version 1.1.				
Project participant response				**Date: 23/09/2024**
Date formatting for Usage Survey and SDG Calc spreadsheets (Iridimi and Touloum) Cell AN has been changed to standard format as stipulated under Template Guide v.1.1 (DD/MM/YYYY)				

The date formatting has now been changed in columns A and B in both the Usage Survey and SDG Calculation spreadsheets (Iridimi and Touloum) as well as column AN/AP in both SDG Calc spreadsheets (Iridimi and Touloum).
Documentation provided by project participant
VVB assessment **Date: 24/09/2024**
VVB has assessed ER sheet Usage survey & SDG Calcs tab and found that the date format is in line with Template guide, version 1.1 without tab. **Hence, CAR is closed**

CAR ID	**06**	**Section no.**		**Date: 10/07/2024**
Description of CAR				
VVB assessed that there are two VPAs of the PP in the region, how the PP insuring to avoid the double counting of SOLAR COOKER distribution across other VPAs. Further, PP shall update the same in the relevant section of MR.				
Project participant response				**Date: 23/09/2024**
The MR already contains information to explain how the risk of double counting is effectively mitigated: 1. These regions are geographically distinct and separate (section A.2) as well as the rigorous data collection and QA/QC procedure to ensure that the risk of double counting is effectively mitigated (sections B.1 & D.2). The following answer to the request provides further elaboration: As demonstrated in section A.2 of the MR, and shown with a corresponding map, the Iridimi and Touloum VPA's are separate refugee camps with distinct geographical locals. These camps are not proximate, nor immediately adjacent to one another. Each stove distributed with each separate camp is recorded according to separate data bases and are specific to only the individuals and/or families living within those camps. As such, there is no risk of double counting between the two VPA's given 1) their geographical distance and distinct nature, and 2) the structured and consistent recording of beneficiaries' names, identification numbers, and photo ID. The exact Geographical location (GPS coordinates) of each beneficiary is recorded via the Kobo Toolbox registration form. HAMERKOP has provided a separate document named Kobo_Registration_Example_Form to demonstrate the above information. HAMERKOP as well as ADES conduct regular QA/QC procedures to ensure that within each camp, there are no replicate recipients or entries to avoid any discrepancies or double counting within the camps themselves. This QA/QC is undertaken by HAMERKOP during the regular review of the master database for each camp, and any issues are immediately communicated to ADES to address any mistakes or typo's that may have occurred during the data collection phase.				
Documentation provided by project participant				
The ''Declaration of no double counting'', signed by Fair Climate Fund has now been provided.				
VVB assessment **Date: 24/09/2024**				
VVB has assessed the CME responses and found that significant measures taken by CME to avoid double counting. Further, CME has provided the declaration related to double counting.				

Hence, CAR is closed.

CAR ID	07	Section no.		Date: 10/07/2024
Description of CAR				
Has an agreement been made with end users ensuring that they do not claim the carbon credits, with only PP authorized to make such claims? Further, PP shall update the same in the relevant section of MR.				
Project participant response				**Date: 23/09/2024**
Section B.1 (Maintenance and Record Keeping Procedure) has been updated to include the following details regarding the formal authorisation given to FCF to claim all carbon credits generated by the project. Yes, only the PP (FairClimateFund) is authorized to make claims on ER's and associated Carbon Credits. Each time a new beneficiary receives a Solar Cooker, he/she is required to sign a 'Carbon Waiver Form' which formally recognizes their consent to give up any rights to the ER's and Carbon credits generated that result from their use of the Solar Cooker. Using the application KoboCollect, a photo of each beneficiary is taken of them signing the Carbon Waiver Form. As mentioned in the section above, an example of these photos has been provided as a supplementary document named Kobo_Registration_Example. Further, another supplementary document has been provided named Signed Carbon Waivers (10 copies)-Touloum CAMP, which details the exact phrasing and agreement between FCF and the beneficiaries. This is the form that is signed and documented with photo evidence as per the evidence provided in the Kobo_Registration_Example.				
Documentation provided by project participant				
VVB assessment				**Date: 24/09/2024**
VVB reviewed the updated MR and found that CME has an agreement in the form of a "Carbon waiver" with end users for VPA 1 & VPA 2, ensuring they do not claim the carbon credits, only the PP authorized to make such claims in section B.1 of the updated Joint MR. **Hence, CAR is closed.**				

CAR ID	08	Section no.	MR	Date: 15/07/2024
Description of CAR				
During document review of the VPA DDs and monitoring reports for the VPA 1 & 2, project verification team reveals that the monitoring frequency of the monitoring parameter "$U_{p,y}$" is annual. The current monitoring period for Iridimi i.e. VPA 1 is 01/06/2022 to 31/12/2023 and Touloum i.e. VPA 2 is 21/02/2022 to 31/12/2023, which is more than one year. The last monitoring survey carried out by CME in March 2022 for VPA 1 and for the current monitoring period the results of the monitoring survey used, which was carried out in March 2024 for both VPAs. However, during remote audit interview CME clarified that, they have also carried out monitoring survey in March 2023, which is complaint annual monitoring survey frequency as per VPA DDs of both VPAs. Though, the same is not declared in MR. Hence PP is requested to provide the monitoring survey details carried out in March 2023 along with its results in the MR. Also, CME is requested to establish that, the results of monitoring survey carried out in				

March 24 are conservative to apply for the whole monitoring period of more than one year instead to apply results of survey carried out in March 2023 for the monitoring period ends of one year.

Project participant response	**Date: 23/09/2024**

As stated above, HAMERKOP and the ADES team have fulfilled the GS requirements, as outlined in the approved DDs for Iridimi (VPA 01) and Touloum (VPA 02) refugee camps, to undertake annual usage surveys during the allotted monitoring period.

The Usage Survey carried out at the Iridimi and Touloum refugee camps was completed in March of 2023 in preparation for the 1st Verification at Touloum Camp and the 5th verification at the Iridimi camp. It is the objective of the FCF/HAMERKOP/ADES (project proponents) team to align the timing of the monitoring periods at both camps in order to facilitate a consistent and predictable workflow for the project implementation partner (ADES) on the ground. By aligning the monitoring periods, the logic ensues that the project proponents would be able to complete both usage (VPA 01 and VPA 02) surveys simultaneously, thus maximizing the efficiency and working capacity of the ADES team, already in an extremely difficult situation welcoming and housing new refugees and attending to matters that extend far beyond the scope of the solar cooker project.

However, due to a number of incurred delays in the validation of the Touloum VPA, at no fault of the project proponents, the project team was not able to complete the joint MR for Iridimi and Touloum immediately following the usage surveys conducted in March of 2023. Though eventually approved (with significant delay), the deviation requests requested by SustainCert (attached as supplementary info and detailed in section B.1.2. of the MR) caused significant delays during the validation of the Touloum VPA 02. As a result, the project proponents were not able to complete the joint verification (1st at Touloum and 5th at Iridimi) immediately following the usage surveys completed in March of 2023.

In order to demonstrate the PLANNED versus ACTUAL dates of the monitoring period in each camp, and help illustrate why the 2023 survey was not utilized as planned, HAMERKOP have provided a screenshot of the monitoring_period schedule_plan in the supplementary information.

The project proponents strongly considered whether to include the results of the March 2023 survey alongside the 2024 Usage Survey results included within this verification round. The reason they were not included is threefold:

1. The usage survey results (2023) were identical to the 2024 survey results, indicating a 100% usage rate of beneficiary households at the Iridimi and Touloum camps. As a result, and in response to the VVB question regarding the conservative nature of the 2024 survey, there is no difference in the achieved results of the usage survey and thus SDG calculations reported in this current monitoring period.
2. The 2024 usage survey is representative of all stoves included in the 2023 survey. In this case, the 0–1-year-old stoves in 2023 became 1-2 year old stoves in 2024. As a result, the usage survey properly accounts for all of the stoves from the 2023 survey and is inclusive of the chrono sequence of solar cooker distribution.
3. The project proponents deemed that it was imperative to include the most recent possible survey (March 2024) in the usage survey results as the 2023 survey would not properly capture the stoves distributed between March 2023- February 2024.

Nevertheless, the proponents acknowledge the importance of properly reporting and detailing the results of the usage survey according to the agreed upon, and requisite, timeline outlined in the DD and the rules of the GS. As a result, HAMERKOP have provided the results of the 2023 Usage Survey in Iridimi (VPA 01) and Touloum (VPA 02) camps in the supplementary information (2023 Monitoring data Iridimi & Touloum R1 Review July 2024) provided to the VVB as well as the sampling data for

monitoring surveys (Iridimi and Touloum Enquete de suivi mars 2023). This data set details the following:

1. The sample sizes used for the 2024 monitoring survey at Iridimi (total of 323) and Touloum (total of 229) are significantly higher than the total sample size used in 2023 which equated to a total of 272 beneficiaries (Iridimi) and 113 (Touloum), which highlights the rapid influx of refugees into both camps and the necessity to ensure that the most up to date monitoring survey was used.
2. Consistent with this first point, the average household size in Iridimi and Touloum has been steadily increasing since the inception of the project. At Iridimi, for example, the average HH size at the end of the first monitoring period (2016) was 4.38 and saw a steady increase in 2018 (4.62), 2020 (4.87), 2023 (4.95) and finally 2024 (5.10). At Touloum, the average HH size increased from 4.96 in 2023 to 5.2 in 2024. This systematic increase demonstrates the importance of accounting Cfor changes in the structure and organisation of the population within the camps as the camps welcome new waves of refugees.
3. For respiratory illness, SDG3, the quantification of beneficiaries reporting on the frequency of respiratory illnesses (significantly or partially reduced) was 100% in 2023 and 98.8% in 2024, again showing the conservative nature of this metric in the latest monitoring survey
4. Finally, and most importantly, the usage survey results (100%) did not differ from 2023 to 2024, and thus the calculations of the achieved results for each respective SDG remain unchanged.

With regards to the calculation of ERs, as evidenced in the supplementary data, the inclusion of calculation parameters for the 2024 data (as opposed to the 2023 data) demonstrates the conservative nature parameters used for the quantification of ERs on an annual basis:

1. There is a higher weighted average stove efficiency for the baseline stoves in 2024 (12.32%) versus 2023 (11.16%) further illustrating the conservative nature of the 2024 survey and the importance of selecting from a larger, up to date, sample size.
2. The average number of meals cooked with the solar cooker in 2024 was 49.3% compared to 50.6% in 2023, again showing the conservativeness of the latest usage survey.

The 2023 usage survey report has not been submitted since the survey report was not completed due to the fact that Gold Standard had requested that a deviation request be completed to continue with the process for project validation for Touloum (VPA 02). As a result, the joint monitoring report for the Touloum and Iridimi Refugee camps was delayed. Due to this delay, only the 2024 usage survey data for both camps were submitted within a report format. Nonetheless, proof has been provided that the 2023 usage survey was conducted in alignment with GS regulations (see documentation provided below)

Documentation provided by project participant

The results of the 2023 Usage Survey in Iridimi (VPA 01) and Touloum (VPA 02) camps in the supplementary information (2023 Monitoring data Iridimi & Touloum R1 Review July 2024) have been provided

The sampling data for monitoring surveys (Iridimi and Touloum Enquete de suivi mars 2023) has now been provided

A Screenshot of the KoboToolbox form has now been provided as 2022_2023 Usage Survey Screenshot_PoA 1075_Solar Cooking in Chad

A Word Document with the 2022-2023 Usage Survey Questions has now been provided: Usage Survey (Enquête d'usage) 2022-23 _ KoboToolb

VVB assessment	Date: 24/09/2024
VVB has reviewed the updated monitoring report and responses and has found that CME has provided a justification for using the 2024 monitoring survey report instead of the 2023 report. CME has also supplied a comparison between the 2023 and 2024 survey reports including 2022-2023 Usage Survey Questions and HAMERKOP have provided a screenshot of the monitoring_period schedule_plan **Hence, CAR is closed.**	

Appendix 5. Data and parameters fixed ex-ante

SDG 13: Climate Action

Parameter	$EF_{b,fuel,CO2}$
Data unit:	tCO2/t firewood
Default values used:	1.747
Purpose of data	Deriving the greenhouse gas emissions released by non-renewable biomass saved.
Source and Verification of the source	Section 4 of The Gold Standard Simplified Methodology for Efficient Cookstoves

Parameter	$EF_{b,fuel,non\_CO2}$
Data unit:	tCO2/t firewood
Default values used:	0.58
Purpose of data	Deriving the greenhouse gas emissions released by non-renewable biomass saved.
Source and Verification of the source	Section 4 of The Gold Standard Simplified Methodology for Efficient Cookstoves

Parameter	$\eta_{p,y}$
Data unit:	Fraction
Default values used:	1
Purpose of data	To calculate VERs
Source and Verification of the source	The cookers do not use fuel per se and so there is no loss of energy being used.

Parameter	f_{NRB}
Data unit:	Fraction
Default values used:	0.96
Purpose of data	To calculate VERs
Source and Verification of the source	A new value was submitted by the project developer on 25/09/2020 to the GS. This value was accepted by the GS on 08/10/2020.

Parameter	$B_{b,y}$
Data unit:	t/hh/a (tons of firewood per household per annum)
Default values used:	MSL: 0.5 tonne per capita per year (MSL method)
Purpose of data	To calculate VERs
Source and Verification of the source	Derived from the minimum service level (MSL) or KPT

Parameter	L_y
Data unit:	fraction
Default values used:	0.95
Purpose of data	To calculate VERs
Source and Verification of the source	Default value

Appendix 6. Data and parameters monitored

Relevant SDG Indicator	**SDG 13, SDG 7, SDG 13**
Data/ Parameter	**$U_{p,y}$**
Unit	Percentage
Description	Usage rate in project scenario p during year y
Source of data	Ongoing Monitoring Surveys (ER Calculation - Iridimi 5th MP May 2024
Value(s) applied	Iridimi (VPA-01): 100%
Measurement methods and procedure	Estimated on the basis of the monitoring survey results. All respondents surveyed answered that they were using their solar cooker.
Monitoring frequency	Annual
QA/QC procedures	Gathered data is cross-checked with sales records for user identification and stove installation date. During the ongoing monitoring studies, qualitative checks on the physical condition of stoves are performed to cross-check with the information provided by the user and potentially flag premature stove failure. All information was gathered and analysed by local ADES' staff and HAMERKOP (carbon consultant).
Purpose of data	Calculating NRB saved and calculating SDG 1, 7 & 13 impacts.
Additional comment	-
VVB Assessment	VVB has assessed the "Ongoing Monitoring Studies (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023), version 3.0_ 17/01/2025)" against to **$U_{p,y}$.** which was found in line with the values mentioned same has been cross checked by VVB during end-user interviews and confirmed that the values mentioned are correct.

Relevant SDG Indicator	**SDG 13, SDG 7, SDG 1**
Data/ Parameter	**$N_{p,y}$**
Unit	Number
Description	Number of project cookers installed
Source of data	Sales records (ER calculation – Iridimi 5th MP May 2024
Value(s) applied	Iridimi (VPA-01): 4,583
Measurement methods and procedure	Measured. Data collected and updated by ADES and checked by HAMERKOP based on the number of stoves distributed and entered into the sales records. Some duplication of records was identified, these could relate to different family members using the same WFP number but to be conservative it has been decided to remove these possible duplications.
Monitoring frequency	Continuous
QA/QC procedures	Checks that contracts contain all information required, once information is entered into the spreadsheet, checks that information matches over a 10% sample.
Purpose of data	Calculating NRB saved.
Additional comment	-

VVB Assessment	VVB has assessed the "Sales records (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023),version 3.0_ 17/01/2025)" against $\mathbf{N_{p,y}}$ which was found in line with the values mentioned same has been checked by VVB and confirmed that the values mentioned are correct.

Relevant SDG Indicator	**SDG 13, Climate action**
Data/ Parameter	$\mathbf{DF_{b,stove,y}}$
Unit	Percentage
Description	Discount factor to account for usage of baseline cookstove during the year y in project scenario
Source of data	Ongoing Monitoring Studies (ER Calculation - Iridimi 5th MP May 2024 and ER calculation – Touloum 1st MP May 2024)
Value(s) applied	50.7% in both Iridimi
Measurement methods and procedure	Calculated based on the monitoring survey results. Calculation method: Average number of meals cooked with the baseline stove / Average number of meals cooked over a period of 7 days
Monitoring frequency	Annual
QA/QC procedures	Gathered data is cross-checked with sales record for user identification and stove installation date. All information gathered is analysed by HAMERKOP.
Purpose of data	Calculating NRB saved.
Additional comment	-
VVB Assessment	VVB has assessed the "Ongoing Monitoring Studies (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023),version 3.0_ 17/01/2025)" against $\mathbf{DF_{b,stove,y}}$ which was found in line with the values mentioned same has been checked by VVB during a remote site interviews and confirmed that the values mentioned are correct.

Relevant SDG Indicator	**SDG 13, Climate action**
Data/ Parameter	**ηb**
Unit	Fraction
Description	Efficiency of the cookstove being used in the baseline scenario.
Source of data	Monitored parameter. Furthermore, methodology default value for 3-stone fires/banco stoves and stove tests for Save 80 (CDM PDD, pg 51). Portion of stove times in use from Koundji-nan Mouya (2011) .
Value(s) applied	Iridimi (VPA-01): (89% x 0.10) + (11% x 0.31) = 12.32%
Measurement methods and procedure	The monitoring survey conducted in February – March 2024 in Iridimi showed that 11% of all respondents were still using a save80 stove vs. 89% using an either the 3-stone or the banco stoves. This gives an adjusted weighted average efficiency of 12.32%. The weighted average of the results from the usage surveys within each VPA is used to determine the weighted average efficiency of the baseline stove, assuming a 10% efficiency

	for a 3-stone fire/Banco (methodology default) and a 31% efficiency for the Save80[5].
Monitoring frequency	-
QA/QC procedures	-
Purpose of data	Calculation for quantity of firewood saved in year y.
Additional comment	-
VVB Assessment	The default value is being used from a methodology that is in line with the requirement.

Relevant SDG Indicator	SDG 13, Climate action
Data/ Parameter	DFη
Unit	Fraction
Description	Discount factor to account for efficiency loss of project solar cookers
Source of data	NA
Value(s) applied	0
Measurement methods and procedure	N.A.
Monitoring frequency	N.A.
QA/QC procedures	N.A.
Purpose of data	Calculating NRB saved.
Additional comment	Solar cookers' efficiency is considered as 100% with no loss of efficiency. It is acknowledged that 100% thermal efficiency is not possible as the laws of thermodynam solar cooker preclude any stove from operating without any energy loss during the transfer of thermal energy from the sun to the solar cooker. However, this justification is based purely on the fact that the solar cookers operate on 100% solar energy and do not require any woodfuel or other fuel to operate. This efficiency is being used for the purposes of calculating the difference in the thermal efficiency in the project scenario (solar cookers) vs the baseline scenario (firewood; as per methodology requirements) and use the equation provided by the methodology.
VVB Assessment	The default value is being used from a methodology that is in line with the requirement.

Relevant SDG Indicator	**SDG 1**
Data/ Parameter	**$S_{p,y}$**
Unit	CFA francs / year
Description	Cumulated savings from an average household using the project cookstoves in year y
Measured/calculated/default	Measured
Source of data	Ongoing Monitoring Studies (ER Calculation - Iridimi 5th MP May 2024 and ER calculation – Touloum 1st MP May 2024)
Value(s) of monitored parameter	Iridimi (VPA-01):

5 Source: Comparative Analysis on the Performance of Four Selected Fuel Wood Stoves Using Water Boiling Tests: https://www.researchgate.net/publication/324694858_Comparative_Analysis_on_the_Performance_of_Four_Selected_Fuel_Wood_Stoves_Using_Water_Boiling_Test

	31,771,343 CFA Francs (47,657 EUR) in total per month or 125 EUR per household per year
Monitoring equipment	N/A
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Calculated based on the monitoring survey results. Calculation method: $S_{p,y} = N_p \times U_{p,y} \times S_{pi,y}$ Where: N_p = number of households who have received / acquired / using a solar cooker $U_{p,y}$ = usage rate in project scenario *p* during year *y* $S_{pi,y}$ = yearly cumulated money saving from an average representative household in year *y*
QA/QC procedures	Gathered data is cross-checked with sales record for user identification and stove installation date. All information gathered and analysed by a local independent consultant and HAMERKOP.
Purpose of data	Calculating SDG 1 impacts
Additional comments	N.A.
VVB Assessment	VVB has assessed the "Ongoing Monitoring Studies (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023), version 3.0_ 17/01/2025" against "**$S_{p,y}$**" which was found in line with the values calculated same has been cross checked by VVB during interviews and confirmed that the values mentioned are correct.

Relevant SDG Indicator	**SDG 3, Good health, and well-being**
Data/ Parameter	**$RD_{p,y}$**
Unit	Percentage
Description	Portion of households experiencing fewer respiratory diseases after adopting solar cooking during year y
Source of data	Ongoing Monitoring Studies (ER Calculation - Iridimi 5th MP May 2024 and ER calculation – Touloum 1st MP May 2024)
Value(s) applied	100%
Measurement methods and procedure	Estimated based on the monitoring survey results. •Iridimi (VPA-01): 98.8% respondents reported improvement; 44.3% reporting partial improvement and 54.5% reporting significant improvement.
Monitoring frequency	Annual
QA/QC procedures	Gathered data is cross-checked with sales record for user identification and stove installation date. All information gathered and analysed by a local independent consultant and HAMERKOP.
Purpose of data	Calculating SDG 3 impacts in project scenario
Additional comment	N.A.
VVB Assessment	VVB has assessed the "Ongoing Monitoring Studies (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023),version 3.0_ 17/01/2025" against **"$RD_{p,y}$"** which was found in line with the values calculated same has been cross-checked by VVB during interviews and confirmed that the values mentioned are correct.

Relevant SDG Indicator	**SDG 3, Good health, and well-being**
Data/ Parameter	**$ED_{p,y}$**
Unit	Percentage
Description	Portion of households experiencing fewer eye infections after adopting solar cooking during year *y*
Source of data	Ongoing Monitoring Studies (ER Calculation - Iridimi 5th MP May 2024 and ER calculation – Touloum 1st MP May 2024)
Value(s) applied	Iridimi: 90.4%
Measurement methods and procedure	Estimated based on the monitoring survey results. •Iridimi (VPA-01):90.4% of all respondents reported improvement; 66.9% reporting partial improvement and 23.5% reporting significant improvement. Estimated on the basis of the monitoring survey results.
Monitoring frequency	Annual
QA/QC procedures	Gathered data is cross-checked with sales record for user identification and stove installation date. All information gathered and analysed by a local independent consultant and HAMERKOP.
Purpose of data	Calculating SDG 3 impacts in project scenario
Additional comment	NA
VVB Assessment	VVB has assessed the "Ongoing Monitoring Studies (ER calculation - Joint_Monitoring_Report IRIDIMI & TOULOUM (2022 & 2023),version 3.0_ 17/01/2025 against "**$ED_{p,y}$**" which was found in line with the values mentioned in the supporting document same has been cross-checked by VVB during interviews and confirmed that the values mentioned are correct.

Safeguarding Principles Assessment (SPA) Monitoring

>> Not Applicable
No safeguarding principles were added to the Monitoring plan by CME.

Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved **Amount achieved from 01st June 2022 to 31st December 2023**	Units/ Products
GS 3445 (VPA 01)	Emissions Reductions	15,169	**VERs**
SDG 1: No poverty	Average household savings i.e., decrease in expenditure on basic service such as cooking, lighting, drinking	**Iridimi (VPA-01):** 125	**Euros / HH / year**
SDG 3. Good health and well being	Households' perception of health benefits (reduction in the incidence of eye and respiratory diseases) as a fraction	**Iridimi (VPA-01):** Respiratory –98.8% Eye – 90.4%	**Fraction (%) of all respondents declaring that they perceived a significant or partial reduction in**

			the occurrence of eye and respiratory diseases within their respective household, since the adoption of the solar cookers
SDG 7. Affordable and clean energy	Number of beneficiaries: households	**Iridimi (VPA-01):** 4,583	**Number of households who have benefitted from project cookers installed (as of 2023)**