Verification and certification report form for programme of activities	
BASIC INFORMATION	
Title and GS4GG reference number of the programme of activities (PoA)	Improved Cooking Stoves in Bangladesh GS PoA Reference number: GS10833
Version number(s) of the PoA-DD(s) to which this report applies	Version 3.0; dated 01/09/2021
GS ID (s) of the VPAs	VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979, VPA 06 - GS10980, VPA 07 - GS10981, VPA 08- GS10982
Version number of the verification and certification report	03
Completion date of the verification and certification report	25/09/2023
Monitoring period number and duration of this morning period	First Monitoring Period (second PoA period) 13/01/2021 to 12/01/2023 (both days inclusive)
Version number of the monitoring report to which this report applies	Version 3.1 (Dated: 01/09/2023)
Activity Requirements applied	Community Services Activities
Product Requirements applied	GHG Emission Reduction & Sequestration
Coordinating/managing entity (CME)	SZ Consultancy Services Ltd. (SZCSL)
Host Country	People's Republic of Bangladesh
Applied methodologies and standardized baselines	AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass - Version 11.1
Mandatory sectoral scopes	3: 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	 Vikash Kumar Singh, Compliance Officer

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) to perform an independent verification of the GS Programme of Activities, "Improved Cooking Stoves in Bangladesh" (hereafter referred to as "Programme of Activities or PoA") for the VPAs titled, "VPA 01 - GS10974: Improved Cooking Stoves in Bangladesh – CPA No.12 "SZ Consultancy Services Ltd."; VPA 02 - GS10976: Improved Cooking Stoves in Bangladesh – CPA No.13 "SZ Consultancy Services Ltd."; VPA 03 - GS10977: Improved Cooking Stoves in Bangladesh – CPA No.14 "SZ Consultancy Services Ltd."; VPA 04 - GS10978: Improved Cooking Stoves in Bangladesh – CPA No.15 "SZ Consultancy Services Ltd."; VPA 05 - GS10979: Improved Cooking Stoves in Bangladesh – CPA No.16 "SZ Consultancy Services Ltd."; VPA 06 - GS10980: Improved Cooking Stoves in Bangladesh – CPA No.17 "SZ Consultancy Services Ltd."; VPA 07 - GS10981: Improved Cooking Stoves in Bangladesh – CPA No.18 "SZ Consultancy Services Ltd."; VPA 08 - GS10982: Improved Cooking Stoves in Bangladesh – CPA No.19 "SZ Consultancy Services Ltd."

The project involves dissemination and maintenance of improved cooking stoves in households in Bangladesh. The dissemination of Improved Cookstoves (ICS) replaces existing, less efficient traditional cooking stoves used for cooking. The Project reduces GHG emission and particulate emissions (PM), thus enhancing health and the Indoor Air Quality of project households, thereby achieving equivalent GHG emissions reductions in Bangladesh.

The VPAs are designed to generate emission reductions by the distribution of high efficiency wood fuel ICS. The fuel-efficient cook stoves are replacing 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 Voluntary project activities.

This report summarises the findings of the verification of the project, performed on the basis of paragraph 62 of the CDM Modalities & Procedures /B01-c/ and GS4GG requirements /B08/, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board and Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of VERs. This report contains the findings and resolutions from the verification and a certification statement for the certified emission reductions.

Objective:

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

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 objective of this verification was to verify and certify emission reductions reported for the "Improved Cooking Stoves in Bangladesh" in the host country People's Republic of Bangladesh for the period 13/01/2021 to 12/01/2023 (both days inclusive).

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 in the PoA /VPAs /B04/ and used 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 programme of activities / VPA-DDs /B04/.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant UNFCCC and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered/included component project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with 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-DDs 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 is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

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

The verification comprises a review of the monitoring report covering the monitoring period from 13/01/2021 to 12/01/2023 (both days inclusive) and based on the registered/included VPA-DDs including the monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participant.

The verification team assigned by the VVB concludes that the PoA (Version 3.0, dated 01/09/2021) /B04/, VPA 01 to VPA 08 (Version 4.0 dated 16/08/2023) as described in the VPA-DDs /B04/ and the monitoring report (version 3.1; dated 01/09/2023) /1/, meet all relevant requirements of the GS4GG requirements /B08/ 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. The verification has been conducted in-line with the GS4GG requirements /B08/ and CDM VVS for PoAs requirements Version 03.0 /B01/.

The voluntary project activities were correctly implemented according to selected monitoring methodology, monitoring plan and the approved revised VPA-DD/s. The monitoring system was implemented, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on-site inspection and interviews, the verification team confirms that the PoA has resulted in 875,421 tCO_2e (447,003 tCO_2e for MS1 and 428,418 tCO_2e for MS2) emission reductions during the first monitoring period of the second crediting period.

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

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:

Sr. No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Team Leader/Technical Expert	IR	Agarwalla	Sanjay Kumar	CCIPL
2.	Team Member	IR	Halder	Manas	CCIPL
3.	Technical Reviewer	IR	Shivaji	Chakraborty	CCIPL
4.	Approver	IR	Kumar	Vikash Kumar	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 ER spreadsheet data of the stoves, including sales database, determination of parameter for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the PoA-DD/VPA-DDs*	*The risk will be mitigated by reviewing the training of the personnel involved in the data capture, calculation and by following the monitoring responsibilities. The training records will be reviewed which will also be confirmed during the on-site visit interviews.*
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	*Medium*	*The data is recorded in the spreadsheet based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database and baseline stove efficiency testing, and other quality test records.*	*The identified risk will be mitigated by reviewing the management of access to the records. It will be confirmed through interviews whether the raw data is collected by the field personnel and then transmitted and stored electronically to the CME/PAI's office. The data quality control to be checked.*
3.	Accuracy of the measuring equipment	*Low*	*Check the calibration records for the measurement equipment used for efficiency test.*	*The risk due to accuracy of the measuring equipment will be ensured by planning to check calibration certificates of the measuring equipment used for*

				stove efficiency (water boiling tests and Controlled Cooked Test).
4.	Sample	*Medium*	*Sample size is not suitable; or the surveyed stoves at the project 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.*
5.	Competence of personnel involved in conducting standardized tests viz., monitoring survey, usage survey, and other quality test etc.	*Medium*	*Interview of the personnel involved and check the training records / accreditation certificates involved in conducting such tests.*	*The risk will be 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 will be checked to establish their competency. The training records and certificates will be reviewed which will also be confirmed during the onsite interviews.*

C.2. Consideration of materiality in conducting the verification

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The threshold of materiality was evaluated based on §13 of "Guideline: Application of materiality in verifications" Version 02.0 and §306 of CDM VVS for PoAs, version 03.0 /B01/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 1% of 447,003 tCO_2e which is equal to 4,470 tCO_2e for MS1 (13/01/2021 to 12/01/2022) and 1% of 428,418 tCO_2e which is equal to 4,284 tCO_2e for MS2 (13/01/2022 to 12/01/2023).

In planning the verification, the verification team took cognizance of §11 and 12 of the "Guideline: Application of materiality in verifications" Version 02.0. A materiality threshold of 4,470 tCO_2e for MS1 and 4,284 tCO_2e for MS2 is determined in line with §306 (d) of CDM VVS for PoAs, version 03.0 /B01-a/.

Based on the above, activities in which risks were assessed were:

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
8. Stove efficiency test (WBT) records

In conducting the verification, VVB took cognizance of §13 of the "Guideline: Application of materiality in verifications" Version 02.0 and based on the input of data from different sources checked through sampling of records during on-site visit interviews. Data flow was checked through 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 reductions data has been checked by the verification team by means of on-site visit interviews.

The risks identified can be mitigated through cross check with all sets of documents. The verification team performed the following checks in order 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 form / WBT protocol and testing procedure etc. during the on-site visit interviews. Further, data was crosschecked with the ER calculation spreadsheet /2/ and the raw data.

Mitigation due to error in Information system: Verification team by conducting interviews with the personnel responsible for such activities mitigated the risk due to error in 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 calibration certificates of all the project equipment.

Competence of personnel involved in conducting standardized tests viz., WBT: Verification team has reviewed the abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the WBT. The WBT has been carried out by the well-trained personnel and training certificate of the personnel has been provided to the verification team in this respect /5/. The training content /5/ has also been provided to the verification team. The verification team based on on-site visit interviews and review of competency documents and training records /5/ confirms that the team was qualified to carry out the WBT in line with the protocol.

Mitigation due to error in Sampling: The verification team mitigated the risk by checking the ER sheet /2/ for each VPAs, list of random samples /9/ generated for monitoring surveys for VPAs and sample size calculation sheet /2/ and interviews with personnel responsible for the same.

In conducting the verification, VVB took cognizance of §13-17 of the "Guideline: Application of materiality in verifications" (version 02.0) and based on the input of data from different sources checked through sampling of records during on-site visit interviews.

Based on the assessment carried out, CCIPL confirms with a reasonable level of 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 /1/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology /B02/. Documents reviewed or referenced during the verification are listed in Appendix 3 of this report.

D.2. On-site inspection

The verification team has carried out on-site inspection and interviews in order to assess the information included in the monitoring report and monitoring measurement procedures adopted during the monitoring period. During the desk review, the relevant monitoring records were checked. Previous validation reports, photographs of the instruments used for WBT, soft copy of original survey records and WBT records were used to cross check consistency of information.

Through the review of validation reports, comparing the relevant evidence and interview with the CME's representatives, CCIPL has confirmed that the project is implemented in line with the PoA-DD / VPA-DDs during the monitoring period. There is no change of the project design, operation and monitoring plan.

On-site inspection and interviews were performed by verification team in order to assess the following:

On-site inspection and interviews: 06/04/2023 & 07/04/2023				
No.	**Activities performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening Meeting and brief project description by the PP; check the project data base / sales records / end user agreement for the total number of stoves distributed under the VPAs.	VPA implementer's office	06/04/2023 & 07/04/2023	Sanjay Kumar Agarwalla and Manas Halder
2.	Compliance of monitoring plan with the applied methodology and registered monitoring plan; project implementation and operation as per the PoA-DD/VPA-DDs.	VPA implementer's office	06/04/2023 & 07/04/2023	
3.	Discussion on the monitoring survey and WBT process; review of QA/QC process (such as related to instruments utilized for carrying out such standardized tests for e.g., WBT) including interview/competency assessment (abilities, qualifications, training and recognition of involved personnel and institutions of the measuring team) of person/institution responsible for conduction of survey/WBTs; Review of monitored data, Discussion on monitoring report and ER calculation spread sheets	VPA implementer's office	06/04/2023 & 07/04/2023	
4.	Physical site visit (to check project implementation and operation and sample households from CME/PP's survey samples)	End user house visit	06/04/2023 & 07/04/2023	
5.	Discussion on OSV findings and Closing meeting.	VPA implementer's office	06/04/2023 & 07/04/2023	

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Kumar	Ritesh	CSIPL	06/04/2023 & 07/04/2023	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla and Manas Halder
2.	Subham	Saket	CSIPL	06/04/2023 & 07/04/2023	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla and Manas Halder
3.	Gupta	Mohit	CSIPL	06/04/2023 & 07/04/2023	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla and Manas Halder
4.	Khalequzzaman	Md.	SZCSL	06/04/2023 & 07/04/2023	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla and Manas Halder
5.	Sarkar	Animesh Kumar	SZCSL	06/04/2023 & 07/04/2023	Project implementation and operation, monitoring procedure, data and information flow, Quality Assurance – Management and operating system, Monitoring records, MR and ER calculation	Sanjay Kumar Agarwalla and Manas Halder
6.	Mridha	Ruman	SZCSL	06/04/2023 & 07/04/2023	Discussion on the WBT process; review of QA/QC process (such as related to instruments utilized for carrying out such standardized tests for e.g., WBT) including competency assessment (abilities, qualifications and	Sanjay Kumar Agarwalla and Manas Halder

					recognition of involved personnel and institutions of the measuring team) of person/institution responsible for conduction of WBTs	
7.	Hossain	Md. Kamal	SZCSL	06/04/2023 & 07/04/2023	Discussion on the WBT process; review of QA/QC process (such as related to instruments utilized for carrying out such standardized tests for e.g., WBT) including competency assessment (abilities, qualifications and recognition of involved personnel and institutions of the measuring team) of person/institution responsible for conduction of WBTs	Sanjay Kumar Agarwalla and Manas Halder
8.	Saha	Atanu Kumar	SZCSL	06/04/2023 & 07/04/2023	Discussion on the WBT process; review of QA/QC process (such as related to instruments utilized for carrying out such standardized tests for e.g., WBT) including competency assessment (abilities, qualifications and recognition of involved personnel and institutions of the measuring team) of person/institution responsible for conduction of WBTs	Sanjay Kumar Agarwalla and Manas Halder
9.	Islam	Md. Hasibul	SZCSL	06/04/2023 & 07/04/2023	Project implementation, sales/distribution records and database management.	Sanjay Kumar Agarwalla and Manas Halder
10.	Alam	Md. Ashraful	SZCSL	06/04/2023 & 07/04/2023	Project implementation, sales/distribution records and database management.	Sanjay Kumar Agarwalla and Manas Halder
11.	Stove ID: ARA-SIR-TAR-TAR-D-44	Forida	End user	06/04/2023	On-site monitoring survey	Sanjay Kumar Agarwalla and Manas Halder

12.	Stov ID: BAL-BAG-MON-SUN-D-1683	Khokon (brother)	End user	06/04/2023	On-site monitoring survey	Sanjay Kumar Agarwalla and Manas Halder
13.	Stove ID: MME-GAZ-GAS-TON-W-12-D-374	Helen (daughter)	End user	06/04/2023	On-site monitoring survey	Sanjay Kumar Agarwalla and Manas Halder
14.	Begum Stove ID: RBH-SHA-BHE-SAY-D-232	Mrs. Rasheda (mother)	End user	06/04/2023	On-site monitoring survey	Sanjay Kumar Agarwalla and Manas Halder
15.	Stove ID: SAM-THA-BAL-AMJ-D-37	Baby (Wife)	End user	06/04/2023	On-site monitoring survey	Sanjay Kumar Agarwalla and Manas Halder
16.	Stove ID: SME-KIS-HOS-SID-D-748	Mst. Rekha (wife)	End user	06/04/2023	On-site monitoring survey	
17.	Stove ID: SUB-GAI-GOB-NAK-D-310	Md.Taharul	End user	06/04/2023	On-site monitoring survey	
18.	Stove ID: ZOH-BOG-BOG-W08-D-61	Md. Anower	End user	06/04/2023	On-site monitoring survey	
19.	Stove ID: BA-MEH-MEH-PIR-C-111	Md. Milon	End user	06/04/2023	On-site monitoring survey	
20.	Stove ID: DE1-MEH-MEH-AMJ-C-553	Md. Laltu	End user	06/04/2023	On-site monitoring survey	
21.	Chandra Stove ID: GSN-NIL-SAI-W03-C-996	Mintu (brother)	End user	06/04/2023	On-site monitoring survey	
22.	Stove ID: GSN-RAN-SAD-W-13-C-84	Md. Badul (brother)	End user	06/04/2023	On-site monitoring survey	
23.	Stove ID: JAS-GAI-GOB-DOR-C-710	Md. Rofiq	End user	06/04/2023	On-site monitoring survey	
24.	Stove ID: MAB-NAT-SAD-KAF-C-90	Md. Asraful	End user	06/04/2023	On-site monitoring survey	

25.	Mia Stove ID: MSE-MEH-MEH-AMJ-C-80	Mintu (brother)	End user	06/04/2023	On-site monitoring survey	
26.	Hossain Stove ID: THS-GAI-SAD-KOP-2-C-11	Md. Moazzem (brother)	End user	06/04/2023	On-site monitoring survey	
27.	Stove ID: BBS-DIN-GHO-PAL-D-733	Mst. Sahajadi (wife)	End user	07/04/2023	On-site monitoring survey	
28.	Stove ID: CHU-DIN-SAD-W12-D-495	Md. Sohel (husband)	End user	07/04/2023	On-site monitoring survey	
29.	Das Stove ID: DS-JES-MON-HOR-D-247	Sochi	End user	07/04/2023	On-site monitoring survey	
30.	Bagom Stove ID: LIA-KHU-TER-MOD-D-57	Arefa	End user	07/04/2023	On-site monitoring survey	
31.	Stove ID: MAM-NIL-SAI-WD-D-150	Rubaya (sister)	End user	07/04/2023	On-site monitoring survey	
32.	Begum Stove ID: MAS-JES-SAR-NAV-D-166	Rasida (sister)	End user	07/04/2023	On-site monitoring survey	
33.	Begum Stove ID: RID-JES-CHO-WD-4-D-104	Pinjira (mother)	End user	07/04/2023	On-site monitoring survey	
34.	Stove ID: SOI-FAR-MAD-NOW-D-853	Amena (wife)	End user	07/04/2023	On-site monitoring survey	
35.	Munsi Stove ID: AS-MAG-SHA-TAL-C-707	Md.Fasiyar	End user	07/04/2023	On-site monitoring survey	

36.	BA-MEH-MEH-AMD-C-69	Hasan (brother)	End user	07/04/2023	On-site monitoring survey	
37.	Haque Stove ID: BA-MEH-MEH-BUR-C-61	Imadul (brother)	End user	07/04/2023	On-site monitoring survey	
38.	Stove ID: ENS-KUR-ULI-THE-C-181	Babu (son)	End user	07/04/2023	On-site monitoring survey	
39.	Hasan Stove ID: GSN-RAN-SAD-RAJ-I-27	Md. Abul (chef)	End user	07/04/2023	On-site monitoring survey	
40.	Mia Stove ID: MBH-SHA-GHO-GHO-C-31	Bangal	End user	07/04/2023	On-site monitoring survey	
41.	Ara Stove ID: MSC-DIN-BIR-WD-6-C-01	Rowshon (wife)	End user	07/04/2023	On-site monitoring survey	
42.	Stove ID: OVS-RAN-SAD-CHA-C-2	Md. Babu (employee)	End user	07/04/2023	On-site monitoring survey	

D.4. Sampling approach

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As assessed in above sections, emission reductions for the eight VPAs (VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979, VPA 06- GS10980, VPA 07- GS10981, VPA 08- GS10982) are being claimed for this monitoring period and the total population of the stoves under these eight VPAs are as below:

SR. No.	VPA Reference No.	Total number of domestic ICS	Total number of non-domestic ICS
1	VPA 01 - GS10974	44,457	812
2	VPA 02 - GS10976	49,842	586
3	VPA 03 - GS10977	53,837	443
4	VPA 04 - GS10978	57,433	322
5	VPA 05 - GS10979	55,934	371
6	VPA 06 - GS10980	60,068	247
7	VPA 07 - GS10981	58,448	314
8	VPA 08 - GS10982	53,033	293
TOTAL		**433,052**	**3,388**

The monitoring parameters required to be monitored through the sampling plan are:
1. Efficiency of the system being deployed as part of the project activity ($\eta_{new,i,j}$)
2. Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)
3. Adjustment to account for any continued use of pre-project devices during the year y (μ_y)

Stratified random sampling was applied by the CME for selection of the monitoring samples with 95/10 confidence/precision for cross-VPA sampling for all the parameters which is deemed acceptable as per the PoA/ VPAs. Stratified random sampling was applied separately for each sampling frame (domestic ICS and non-domestic ICS). The ICS in each sampling frame were stratified by ICS batch i.e. year of installation (2013 and 2014). Each ICS within the sampling frame was assigned a sampling serial number, starting at 1 and increasing up to the total number of ICS in the sampling frame (Domestic 2013: 1 to 361,680; Domestic 2014: 1 to 71,372; non-Domestic 2013: 1 to 2,970; non-Domestic 2014: 1 to 418). For the all the three monitoring parameters Efficiency of the system being deployed as part of the project activity ($\eta_{new,i,j}$), Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$), and Adjustment to account for any continued use of pre-project devices during the year y (μ_y), sampling frames were chosen for the type of stoves distributed (which is in line with the PoA-DD / VPA-DDs).

As per paragraph 25 of the Sampling Standard, version 09 /B07/, the verification team has to verify whether the 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.

Monitoring was conducted for this monitoring period. The results of sampling surveys are verified by the VVB by using acceptance sampling during on-site interviews carried out on 06/04/2023.

In line with paragraph 26 of the Sampling Standard /B07/, the verification team has applied a sampling approach for on-site visits surveys as part of verification. Now as the CME had applied sampling approach, the verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard and accordingly steps listed in paragraph 29 of the sampling standard were followed.

VVB used sampling during verification for checking the operational status of the project stove and the continued use of baseline device. CME had categorized the whole population under two types, i.e. domestic ICS and non-domestic ICS. The ICS in each sampling frame were stratified by ICS batch i.e. year of installation (2013 and 2014). Thus, the sampling was done for four different strata (i.e., Domestic 2013, Domestic 2014, Non-Domestic 2013 and Non-Domestic 2014). A sample size of 8 (per strata) was chosen. A sample size of 8 (per strata) was required, based on an AQL of 1% and UQL of 20 %, producer risk of 10 % and consumer risk of 20%. Acceptance number (c) thus determined for the samples is 0. VVB visited 64 (8 samples per strata) samples. It was observed that out of the 64 samples, all 64 stoves were found to be operational and this matched with the CME's records and hence no discrepant records were observed with the MR /1/ and ER sheet /2/ and thus c=0. Thus, CME's set of records has been accepted in line with § 33 of the sampling standard, version 09 /B07/. Verification team has cross verified these sample documents during the on-site visit.

The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology /B02/ and the PoA-DD/VPA-DDs /B04/. The CME has appropriately performed Sampling procedure in line with the applied methodology and PoA-DD / VPA-DDs /B04/.

Verification team confirms that the end users have been selected at random and without any bias. Furthermore, based on review of the ex-post monitoring survey records /7/, the verification team confirms that the sampling survey covered end users covered in the VPAs. Thus, the survey design covers the region of distribution of the population (within the geographical boundary) and is representative in nature.

The verification team thus confirms that the sampling plan ensures that:
(a) The necessary confidence / precision of 95/10 each of the parameters is met.
(b) Samples are randomly selected and are representative of the population.

This has been cross verified by the verification team from the supporting documents submitted.

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 01 had been raised and resolved successfully. Please refer to appendix 4 for further details.
Conclusion	CME has used the GS4GG template Monitoring Report, version 1.1 /B03-a/. Verification team confirms that the latest available version of the monitoring report template /B03/ has been used by the CME and the MR is in compliance with the monitoring report form and related template guide Monitoring Report, version 1.1 /B03-b/. This confirms compliance with the §336 and §337 of CDM VVS for PoAs, version 03.0 /B01/and GS4GG requirements /B08/.

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

>>
Not Applicable

E.2. Programme of activities

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

Means of verification	Document Review, Interview
Findings	
Conclusion	CCIPL by means of on-site interviews and document review, assessed that all physical features (technology, project equipment, and monitoring equipment) of the included VPAs in the PoA /B04/ are in place and that the coordinating/managing entity has operated the PoA and the VPAs as per the PoA /B04/ and the VPAs /B04/. There are no deviations or proposed or actual changes in the implementation or operation of the PoA and the included VPAs. The verification team confirms actual operation of the VPAs and PoA implementation and operation in compliance with the PoA / CPAs /B04/ in order to confirm the compliance of § 338, § 339 and § 340 of CDM VVS for PoAs, Version 03.0 /B01/ and GS4GG requirements /B08/.

E.2.2. Implementation and operation of the management system

Means of verification	Document Review, Interview

Findings	-
Conclusion	The PoA management system including the record-keeping system has been explained in the PoA /B04/. During the course of verification, verification team based on review of provided documents and on-site interviews has assessed this management system. 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 in house team of BBF. The survey was a questionnaire-based survey and was conducted to collect feedback from sampled households /6/. In order to ensure completeness and accuracy of monitoring information, electronic database is operated and maintained by the VPA implementer. This information is further maintained by the CME, who verifies the reported sales with the number of stoves produced by the manufacturer. The data is further periodically checked by the CME to ensure there is no double counting. All ICS distributed under each VPA have a unique ID, and the ICS owners have transferred ownership of carbon credits to CME via end user agreement. This provision for the avoidance of double counting as outlined in the PoA management system has been verified by means of review records of sales database and scanned copies of sales receipts in accordance with the end user agreement and were further confirmed during the site visit through an end user interview. It was confirmed during the on-site interviews and by checking the monitoring system that all the roles and responsibilities related to monitoring are fulfilled by representatives of CME and the VPA implementer. The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan /B04/. The details about monitoring system have been provided in the monitoring report /1/. The data flow and management and reporting structure was also checked during the on-site interviews. The verification team confirms that the monitoring management system of the GS PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of § 338 (a) and § 345 (b) (iv) of CDM VVS PoAs. Version 03.0 /B01/ and GS4GG requirements /B08/.

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 had been raised and resolved successfully. Please refer to appendix 4 for further details.
Conclusion	The implementation status of the PoA and the Voluntary project activities is:

Project Participants:	SZ Consultancy Services Ltd. (SZCSL)
Title of PoA:	Improved Cooking Stoves in Bangladesh
GS Reference No:	PoA ID: GS10833 VPA ID: VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979,

	VPA 06- GS10980, VPA 07- GS10981, VPA 08- GS10982
Applied Baseline and monitoring methodology:	AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1
Project Scale:	Small-scale
Location of the project activity:	People's Republic of Bangladesh
Reported monitoring Period verified in this verification:	13/01/2021 to 12/01/2023 (both days inclusive)

As a part of the on-site interviews, the verification team was able to confirm that the Programme of activities and the Voluntary project activities' implementation are in accordance with the project description contained in the PoA and included VPA-DDs /B04/.

The VPAs include distribution of energy efficient improved cooking stoves. The VPA implementer is SZ Consultancy Services Ltd. (SZCSL). The fixed improved cook stoves (ICS) under the VPAs use wood as fuel. These ICSs are efficient in transferring heat from the fuel to the pot, thus saving wood fuel compared to the traditional stoves.

The number of stoves deployed under each VPAs have been confirmed by the monitoring database and as stated below:

VPA	Total number of domestic ICS	Total number of non-domestic ICS
VPA 01 - GS10974	44,457	812
VPA 02 - GS10976	49,842	586
VPA 03 - GS10977	53,837	443
VPA 04 - GS10978	57,433	322
VPA 05 - GS10979	55,934	371
VPA 06 - GS10980	60,068	247
VPA 07 - GS10981	58,448	314
VPA 08 - GS10982	53,033	293
Total	**433,052**	**3,388**

It was confirmed that Bangladesh Bondhu Foundation (BBF) is the Coordinating/Managing Entity for the PoA. The actual Voluntary project activity/ies are in line with the VPAs /B04/. Bangladesh Bondhu Foundation (BBF) is also the VPA implementer for the VPAs.

The information (including data and variables) provided in the MR /1/ is in line with the details provided in the VPAs /B04/.

CCIPL's verification team considers the project description of the project contained in the PoA and the VPAs /B04/ to be complete and accurate. The VPAs comply with the relevant methodology, tools, forms and guidance.

In accordance with §340 of CDM VVS for PoAs, version 03 /B01/, 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-DDs which has caused an increase in the estimates of GHG emission reductions.

Verification team has assessed the project in order to check any proposed or actual changes to the project design in accordance with §267 of CDM VVS for PoAs, Version 03.0. In the opinion of CCIPL, there is no change to the project design.

	CCIPL's verification team confirms that the VPAs are implemented within the boundary of the PoA as described in the PoA-DD. In the opinion of CCIPL, there is no change to the project design. CCIPL's verification team confirms that the VPAs are implemented within the boundary of the PoA as described in the PoA /B04/ and the implementation and operation of the project activity has been conducted in accordance with the description contained in the PoA and VPAs. The verification team took cognizance of § 338, § 339 and § 340 of the CDM VVS for PoAs, version 03 /B01/ to conduct the verification and on-site interviews in accordance with the § 319 and 320 of the CDM VVS for PoAs, version 03 /B01/ and GS4 GG requirements /B08/.

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

Means of verification	Document Review, Interview
Findings	-
Conclusion	The verification team is able to confirm that the monitoring plan contained in the VPAs is in accordance with the approved methodology applied by the project activity, i.e., AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1 /B02/. The monitoring plan is in accordance with the approved methodology, AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1 /B02/, applied by the Voluntary project activities and as provided in the VPAs /B04/. The verification took cognizance of § 341 to § 343 of CDM VVS for PoAs, Version 03.0 /B01/ and GS4GG requirements /B08/.

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 VPAs /B04/. This conclusion has been made based on assessment below.

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

Means of verification	Document Review, Interview
Findings	
Conclusion	Verification team confirms that the Data and parameters fixed ex ante are in compliance with the VPAs /B04/ and the monitoring plan. Please refer Appendix 5 for detailed analysis of the ex-ante parameters. The verification took cognizance of § 344 of CDM VVS for PoAs, Version 03.0 /B01/ and GS4GG requirements /B08/.

E.3.3.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	CAR 04 and CL 04 had been raised and resolved successfully. Please refer to appendix 4 for further details.
Conclusion	The Verification team confirms that the Data and parameters monitored are in compliance with the VPAs and the monitoring plan /B04/. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of the verification report. The verification took cognizance of § 344, § 345(b), §356 and §357 of CDM VVS for PoAs, Version 03.0 /B01/ GS4GG Requirements/B08/.

E.3.3.3. Implementation of sampling plan

<table>
<tr><td>Means of verification</td><td>Document Review, Interview</td></tr>
<tr><td>Findings</td><td>CL 02 and CAR 05 had been raised and resolved successfully. Please refer to appendix 4 for further details.</td></tr>
<tr><td>Conclusion</td><td>Monitoring surveys were conducted during the current monitoring period and the results are as follows:
The total population of the stoves under the eight VPAs considered for the monitoring period is 433,052 (domestic) and 3,388 (non-Domestic). The monitoring parameters required to be monitored through the sampling plan are:
1. Efficiency of the system being deployed as part of the project activity (fraction) ($\eta_{new,i,j}$)
2. Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)
3. Adjustment to account for any continued use of pre-project devices during the year y (μ_y)

Across VPA stratified random sampling was applied for the eight VPAs by CME for selection of the monitoring samples with 95/10 confidence/precision for the two parameters for annual monitoring which is deemed acceptable as per the PoA /B04/ and VPAs /B04/.

For the all the three monitoring parameters Efficiency of the system being deployed as part of the project activity ($\eta_{new,i,j}$), Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$), and Adjustment to account for any continued use of pre-project devices during the year y (μ_y), sampling frames were chosen for the type of stoves distributed (which is in line with the PoA-DD / VPA-DDs.

Applying the random number generator, the ICS were randomly picked from the defined population up to the required sample size as calculated by the CME /9/. The verification team confirms that the applied method for sample size calculation is in accordance with the PoA-DD / VPA-DDs /B04/.

The number of samples for each of the parameters covered during the monitoring activity is as given below:

<table>
<tr><th rowspan="2">Parameter</th><th colspan="2">Sample Size (n) required</th></tr>
<tr><th>MS1</th><th>MS2</th></tr>
<tr><td>$\eta_{new,i,j}$ (Domestic, 2013)</td><td>6</td><td>6</td></tr>
<tr><td>$\eta_{new,i,j}$ (Domestic, 2014)</td><td>2</td><td>2</td></tr>
<tr><td>$\eta_{new,i,j}$ (Non-domestic, 2013)</td><td>7</td><td>7</td></tr>
<tr><td>$\eta_{new,i,j}$ (Non-domestic, 2014)</td><td>2</td><td>2</td></tr>
<tr><td>$N_{y,i,j}$ (Domestic, 2013)</td><td>57</td><td>69</td></tr>
<tr><td>$N_{y,i,j}$ (Domestic, 2014)</td><td>12</td><td>14</td></tr>
<tr><td>$N_{y,i,j}$ (Non-domestic, 2013)</td><td>48</td><td>59</td></tr>
<tr><td>$N_{y,i,j}$ (Non-domestic, 2014)</td><td>7</td><td>9</td></tr>
<tr><td>μ_y (Domestic)</td><td>43</td><td>43</td></tr>
<tr><td>μ_y (Non-domestic)</td><td>43</td><td>43</td></tr>
</table>

The actual sample size in all the cases was not less than either the calculated sample size or the minimum sample size as per the PoA-DD /B04/, and this is deemed acceptable in line with the Standard for sampling and surveys for CDM project activities and Programme of Activities, version 09 /B07/.

For the monitoring parameters $N_{y,i,j}$ and μ_y data were collected following a specially designed survey form and for the monitoring parameter $\eta_{new,i,j}$ WBTs were performed. The surveys and Water Boiling Tests on the sampled cook stoves were conducted during January and February 2022 for MS1 and January and February 2023 for MS2, meeting the annual monitoring frequency requirements.</td></tr>
</table>

	The verification team has checked and found that for all the parameters the confidence/precision of 95/10 was met. The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology /B02/ and the PoA-DD/ VPAs /B04/. The CME has appropriately performed Stratified Random Sampling procedure in line with the applied methodology and best suited for this type of project. As the PoA /B04/ mentions the option for Stratified Random Sampling procedure, it is acceptable to the verification team. The necessary confidence / precision of 95/10 each of the parameters is met. This has been cross verified by the verification team from the supporting documents submitted /2/. The verification took cognizance of § 346 of CDM VVS for PoAs, Version 03.0 /B01/and GS4GG Requirements /B08/.

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

Means of verification	Document Review, Interview
Findings	-
Conclusion	The stove efficiency testing has been determined by the WBTs conducted by the SZCSL in-house trained staff having prior experience of conducting WBTs. WBTs were performed using 'The Water Boiling Test' protocol version 4.2.3, inline with the VPA-DDs /B04/ /10/. During the on-site interviews, it was confirmed that the staff conducting tests and surveys has relevant experience and competence in monitoring cookstove projects in Bangladesh. The monitoring equipment used for conducting the stove efficiencies by WBTs are thermometer, weighing machine and moisture meter. All the monitoring equipment were duly calibrated and hence deemed acceptable /8/. The appropriate QA/QC procedures have been followed for the monitoring parameters. The verification took cognizance of section 10.2.6 of CDM VVS for PoAs, version 03 /B01/ and GS4GG requirements /B08/.

E.3.5. Assessment of data and calculation of emission reductions or net removals

In line with the requirement of §356 and §357 of CDM VVS for PoAs, Version 03.0 /B01/, the verification team has reviewed the monitoring report /1/ and ER spread sheets /2/ to check the arithmetic calculation of the emission reductions. The equation used for the calculation is compared with those provided in the VPAs /B04/ and the methodology, AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1 /B02/.

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

Means of verification	Document Review, Interview
Findings	
Conclusion	The equations for emission reduction calculations, as provided in the monitoring report /1/ and confirmed with the VPAs /B04/ and the methodology, AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1 /B02/, are: SDG 13: Climate Action $ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y$ Where,

i	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
j	Indices for the situation where there is more than one batch of project device
ER_y	Emission reductions during year y in t CO_2e
$ER_{y,i,j}$	Emission reductions by project device of type i and batch j during year y in t CO_2e
LE_y	Leakage emissions in the year y

Where,

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\ fuel}$$

Where,

$B_{y,savings,i,j}$	Quantity of woody biomass that is saved in tonnes per cook stove device of type *i* and batch *j* during year *y*
$f_{NRB,y}$	Fraction of woody biomass that can be established as non-renewable biomass using survey methods or government data or default country specific fraction of non-renewable woody biomass (fNRB) values available on the CDM website
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')
$EF_{projected\_fossilfuel}$	Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 t CO_2/TJ
$N_{y,i,j}$	Number of project devices of type *i* and batch *j* operating during year *y*
μ_y	Adjustment to account for any continued use of pre-project devices during the year *y* when applying equations 6 (fraction).

Where,

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

Where,

$B_{old,i,j}$	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type *i* and batch *j*

$\eta_{new,i,j}$	Efficiency of the device of each type i and batch j implemented as part of the project activity.
$\eta_{old,i,j}$	Efficiency of pre - project device, which is a three-stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney;
LAF_y	Net to gross Adjustment Factor

$$B_{old,i,j} = B_{old,HH} = B_{old,p} \times N_{p,HH}$$

Where,

$B_{old,HH}$	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
$B_{old,p}$	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
$N_{p,HH}$	Average number of persons served per household prior to the project implementation.

From the above equation and the parameter values, emission reductions are calculated as:

Specific-case VPA reference number	Emission Reductions (tCO_2e)		
	MS1	MS2	Total
VPA 01 - GS10974	56,311	53,965	110,276
VPA 02 - GS10976	55,732	53,289	109,021
VPA 03 - GS10977	55,866	53,336	109,202
VPA 04 - GS10978	56,162	53,549	109,711
VPA 05 - GS10979	56,005	53,428	109,433
VPA 06 - GS10980	56,690	54,010	110,700
VPA 07 - GS10981	57,270	55,034	112,304
VPA 08 - GS10982	52,967	51,807	1,04,774
Total	**447,003**	**428,418**	**875,421**

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 spread sheet /2/.

The verification took cognizance of § 356 of CDM VVS for PoAs, version 03.0 /B01/ andGS4GG requirements /B08/.

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

Means of verification	Document Review, Interview
Findings	-
Conclusion	There are no project emissions identified in the monitoring methodology /B02/ and the VPAs /B04/ and GS4GG requirements/B08/.

E.3.5.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	-
Conclusion	Net-to-gross adjustment factors for leakage (fixed default values of 0.95 as per AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1 /B02/ was applied to the project activity to calculate Emission Reductions of this Monitoring Period. 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 /B04/.

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

Means of verification	Document Review, Interview
Findings	CL 01 had been raised and resolved successfully. Please refer to appendix 4 for further details.
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 is 447,003 tCO_2e for MS1 and 428,418 tCO_2e for MS2. In summary, verification team confirms that actual emission reduction is lower than the estimate of the VPAs /B04/ for the current monitoring period. The verification took cognizance of § 356 of CDM VVS PoAs, version 03 /B01/ and GS4GG requirements /B08/.

Title and GS4GG reference number of the VPA (MS1)	Baseline emissions or baseline net GHG removals by sinks (tCO_2e)	Project emissions or actual net GHG removals by sinks (tCO_2e)	Leakage (tCO_2e)	GHG emission reductions or net GHG removals by sinks (tCO_2e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
VPA 01 - GS10974	56,311	-	-	0	56,311	56,311
VPA 02 - GS10976	55,732	-	-	0	55,732	55,732
VPA 03 - GS10977	55,866	-	-	0	55,866	55,866
VPA 04 - GS10978	56,162	-	-	0	56,162	56,162
VPA 05 - GS10979	56,005	-	-	0	56,005	56,005
VPA 06 - GS10980	56,690	-	-	0	56,690	56,690
VPA 07 - GS10981	57,270	-	-	0	57,270	57,270
VPA 08 - GS10982	52,967	-	-	0	52,967	52,967
Total	**447,003**	**0**	**0**	**0**	**447,003**	**447,003**

Title and GS4GG reference number of the VPA (MS2)	Baseline emissions or baseline net GHG removals by sinks (tCO_2e)	Project emissions or actual net GHG removals by sinks (tCO_2e)	Leakage (tCO_2e)	GHG emission reductions or net GHG removals by sinks (tCO_2e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
VPA 01 - GS10974	53,965	-	-	0	53,965	53,965
VPA 02 - GS10976	53,289	-	-	0	53,289	53,289
VPA 03 - GS10977	53,336	-	-	0	53,336	53,336
VPA 04 - GS10978	53,549	-	-	0	53,549	53,549
VPA 05 - GS10979	53,428	-	-	0	53,428	53,428
VPA 06 - GS10980	54,010	-	-	0	54,010	54,010
VPA 07 - GS10981	55,034	-	-	0	55,034	55,034
VPA 08 - GS10982	51,807	-	-	0	51,807	51,807
Total	**428,418**	**0**	**0**	**0**	**428,418**	**428,418**

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	-
Conclusion	Comparison of the actual GHG emission reductions with the estimates in the included specific VPAs is given in the below table. The verification team took cognizance of § 356 of CDM VVS for PoAs, version 03 /B01/ and GS4GG requirements /B08/.

Title and GS4GG reference number of the VPA	Actual values achieved by the VPAs during this monitoring period (tCO_2e)			Value estimated in ex ante calculation in the included VPA-DD(s) (tCO_2e)		
	MS1	MS2	Total	MS1	MS2	Total
VPA 01 - GS10974	56,311	53,965	110,276	71,674	71,674	143,348
VPA 02 - GS10976	55,732	53,289	109,021	70,712	70,712	141,424
VPA 03 - GS10977	55,866	53,336	109,202	70,831	70,831	141,662
VPA 04 - GS10978	56,162	53,549	109,711	70,427	70,427	140,854
VPA 05 - GS10979	56,005	53,428	109,433	71,521	71,521	143,042
VPA 06 - GS10980	56,690	54,010	110,700	70,989	70,989	141,978
VPA 07 - GS10981	57,270	55,034	112,304	71,186	71,186	142,372
VPA 08 - GS10982	52,967	51,807	104,774	55,884	55,884	111,768
Total	**447,003**	**428,418**	**875,421**	**553,224**	**553,224**	**1,106,448**

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

Means of verification	Document review
Findings	-
Conclusion	The actual emission reductions are less than the ex-ante estimated values in the VPA-DDs.

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

Means of verification	Document Review, Interview
Findings	CAR 02 and CAR 03 had been raised and resolved successfully. Please refer to appendix 4 for further details.
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 /B04/. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of the verification report. The verification took cognizance of § 344, § 345(c), §356 and §357 of CDM VVS for PoAs, Version 03.0 /B01/ GS4GG Requirements/B08/.

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 CDM validation and verification has performed the technical review.

SECTION G. Verification opinion

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Carbon Check (India) Private Ltd. has performed the first verification for the second crediting period of the GS Programme of Activities "GHG Emission Reduction through use of Bondhu Chula (Improved Cook Stoves) in Bangladesh" (hereafter referred to as "Programme of Activities or PoA") for the VPAs, VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979, VPA 06 - GS10980, VPA 07 - GS10981, VPA 08- GS10982.

The verification team assigned by the VVB concludes that the PoA (Version 3.0, dated 01/09/2021), VPAs, VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979, VPA 06 - GS10980, VPA 07 - GS10981, VPA 08- GS10982 as described in the VPAs /B04/ and the monitoring report (Version 3.1, dated 01/09/2023) /1/, meet all relevant GS4GG requirements /B08/ 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. The verification has been conducted in-line with the CDM VVS for programme of activities requirements version 03.0 /B01/.

Verification methodology and process:

The Verification team confirms the contractual relationship signed on 22/03/2023 between the VVB, Carbon Check (India) Private Ltd. and the Co-ordinating Managing Entity/ Project Participant, (SZCSL) /17/. The team assigned to the verification meets the Carbon Check (India) Private Ltd.'s internal procedures including the UNFCCC and GS 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 CDM VVS for PoAs, version 03.0 /B01/ and GS4GG requirements and constitutes the review and completion of the following steps:

- Reviewing the PoA (Version 3.0, date 01/09/2021), the VPAs for VPA 01- GS10974, VPA 02- GS10976, VPA 03- GS10977, VPA 04- GS10978, VPA 05- GS10979, VPA 06 - GS10980, VPA 07 - GS10981, VPA 08- GS10982 /B04/, including the monitoring plan and the corresponding validation report/s /B04/;
- Previous GS4GG verification and certification reports and the monitoring reports for the previous monitoring periods /B08/;
- Desk review of the validation report, MR and other relevant documents including documents related to the project activities in emission reductions
- Review of the applied monitoring methodology (AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1);
- Review of any CMP and EB decisions, clarifications and guidance;
- On-site interviews (06/04/2023 and 07/04/2023)
- 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 the VPAs. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on-site interviews, the verification team confirms that the PoA has resulted in the 875,421 tCO_2e (447,003 tCO_2e for MS1 and 428,418 tCO_2e for MS2) emission reductions during the second monitoring period of second crediting period for GS10974, GS10976 to GS10982.

Verified emission reductions:

Specific-case VPA reference number	Emission Reductions (tCO_2e)		
	MS1	MS2	Total
VPA 01 - GS10974	56,311	53,965	110,276
VPA 02 - GS10976	55,732	53,289	109,021
VPA 03 - GS10977	55,866	53,336	109,202
VPA 04 - GS10978	56,162	53,549	109,711
VPA 05 - GS10979	56,005	53,428	109,433
VPA 06 - GS10980	56,690	54,010	110,700

VPA 07 - GS10981	57,270	55,034	112,304
VPA 08 - GS10982	52,967	51,807	1,04,774
Total	**447,003**	**428,418**	**875,421**

CCIPL as a VVB is therefore pleased to issue a positive verification opinion in the Certification statement given below.

SECTION H. Certification statement

>>

Carbon Check (India) Private Ltd., the VVB, has performed the verification of the GS Programme of Activities, GS10833, “Improved Cooking Stoves in Bangladesh”. The PoA involves replacement of less efficient cooking stoves using woody biomass with ICS which are more efficient. The ICS distributed under VPAs of the PoA are more efficient in transferring heat from the fuel to the pot when compared to the stoves typically used in baseline. By replacing inefficient stoves, the PoA will save on consumption of woody biomass.

The Voluntary project activities of the Programme of Activities are designed to generate emission reductions by distribution of the fuel-efficient wood fuel-based cook stoves in Bangladesh. 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 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-DDs. The verification is carried out in-line with the CDM VVS and GS4GG requirements.

The verification was performed to identify the compliance of the component project/ies with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and on-site interviews 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 3.0 dated 01/09/2021;
- VPAs included in the PoA and its monitoring plan for the monitoring period 13/01/2021 to 12/01/2023 (both days inclusive).
- Approved CDM monitoring methodology, AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass, Version 11.1;
- Validation report /B04/ for the PoA and the VPA/s;
- Monitoring report Version 1.0 dated 28/03/2023, Version 2.0 dated 16/05/2023 and Version 3.1 dated 01/09/2023

This statement covers verification period from 13/01/2021 to 12/01/2023 (both days inclusive).

The VVB had raised four (04) clarification requests and five (05) corrective action requests which have been successfully resolved by the CME. No FAR was raised.

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

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 875,421 tCO_2e (447,003 tCO_2e for MS1 and 428,418 tCO_2e for MS2) 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.
CSIPL	Climate Secure India Private Limited
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
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
GS4GG	Gold Standard for the Global Goals
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MP	Monitoring Period
MWh	Mega Watt Hour
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
SZCSL	SZ Consultancy Services Ltd.
TA	Technical Area
TR	Technical Review
TRF	Transition Request Form
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
VVB	Validation & Verification Body
WBT	Water boiling test

Appendix 2. Competence of team members and technical reviewers

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Sanjay Agarwalla

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date
1st January 2023

Expiry Date
31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Manas Halder

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Shivaji Chakraborty

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	SZCSL	Monitoring report for first monitoring period:		CME
		a) "GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v1.0 28032023.docx"	Version 1.0, dated 28/03/2023	
		b) "GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023.docx"	Version 2.0, dated 16/05/2023	
		c) "GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v3.1 01092023.docx"	Version 3.1, dated 01/09/2023	
2	SZCSL	Emission reduction calculation sheet corresponding to /1/ :		CME
		a) "GS 10833 VPA 01-08 CP2 MP1 ER Calculator v1.0 28032023.xlsx"	Version 1.0, dated 28/03/2023	
		b) "GS 10833 VPA 01-08 CP2 MP1 ER Calculator v2.0 16052023.xlsx"	Version 2.0, dated 16/05/2023	
		c) "GS 10833 VPA 01-08 CP2 MP1 ER Calculator v3.1 01092023.xlsx"	Version 3, dated 01/09/2023	
3	SZCSL	Stove performance specification report dated 10/09/2012	-	CME
4	SZCSL	Cook stoves distribution / sales records for the 8 VPAs of the PoA Improved Cooking Stoves in Bangladesh; PoA Reference Number GS 10833	-	CME
5	SZCSL	Training records of surveying personnel on conducting of the monitoring survey and stove performance tests (WBT)	-	CME
6	SZCSL	Monitoring survey questionnaire template	-	CME
7	SZCSL	Survey records for the monitoring period for monitored parameters	-	CME
8	SZCSL	Calibration status evidence - equipment purchase invoice	-	CME
9	SZCSL	Online random number generation (Stat Trek) for the sample taken by the PP for monitored parameters dated 12/22/2021 and 12/20/2022 for MS1 and MS2 respectively.		CME
10	SZCSL	1. WBT data calculator spreadsheet for the monitoring period 2. Scanned copies of WBT raw data sheets for stoves tested for the monitoring period		CME
11	SZCSL	Copy of the WBT protocol for conducting WBTs	-	CME
12	SZCSL	CME monitoring manual /User Manual and Procedure for PoA Data Quality Check	-	CME
13	SZCSL	Competence of the persons who conducted survey and WBT.	-	CME
14	SZCSL	Copies of the contracts with stove manufacturers.	-	CME
15	SZCSL	Sample end user sales agreement/receipt cum carbon credit waiver copies	-	CME
16	SZCSL	Declaration of employment by SZ Consultancy dated 01/01/2022 and 01/01/2023 for MS1 and MS2 respectively	-	CME
17	CCIPL	Copy of engagement contract between CCIPL and SZ Consultancy Service Ltd.	-	Others

B01	UNFCCC	a) Validation and Verification Standard for PoAs, version 03 b) Project Standard for PoAs, version 03 c) Modalities and Procedures (Annex of Decision 3/CMP.1	http://cdm.unfccc.int/	Others
B02	UNFCCC	Applied baseline and monitoring methodology, "AMS-II.G, version 11.1 "Energy efficiency measures in thermal applications of non-renewable biomass"	http://cdm.unfccc.int/	
B03	GS4GG	a) Template Monitoring Report, version 1.1 b) Template guide Monitoring Report, version 1.1	www.goldstandard.org	Others
B04	GS4GG	Registered GS PoA-DD and VPA-DDs and corresponding Validation Reports	www.goldstandard.org	Others
B05	Web sites	Websites: http://cdm.unfccc.int/ www.goldstandard.org	--	Others
B06	UNFCCC	Guidelines: Sampling and surveys for CDM project activities and programmes of activities (version 04.0)	http://cdm.unfccc.int/	Others
B07	UNFCCC	Standard: Standard for sampling and surveys for CDM project activities and Programme of Activities (version 09.0)	http://cdm.unfccc.int/	Others
B08	GS4GG	c) GS4GG "Principles & Requirements", version 1.2 d) GS4GG "Programme of Activity Requirements", version 1.2 e) GS4GG "Community Services Activity Requirements", version 1.2 f) GS4GG "GHG Emissions Reduction & Sequestration Product Requirements, version 2.0 g) GS4GG "Safeguarding Principles & Requirements", version 1.2	www.goldstandard.org	Others

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

Table 1. Remaining FARs from validation and/or previous verification

Nil

Table 2. CAR from this verification

CAR ID	01	**Section no.**	MR	**Date:** 05/05/2023
Description of CAR				
As per the GS4GG template guide for monitoring report, CME needs to ensure to follow the instructions below while preparing the MR: 1. Complete this form using the same format without modifying its font, headings or logo, and without any other alteration to the form. 2. Figures above one thousand shall be formatted with a comma (for example 1,000,000), and decimals will be separated by a point (for example 1.35). Some inconsistencies have been observed related to the above throughout the monitoring report. CME is requested to address and rectify those.				
CME response				**Date:** 16/05/2023
1. The requested corrections have been made in the MR and it now follows the requirements stated in the GS4GG template guide for monitoring report. 2. The requested corrections have been made in the MR to use the requisite number format.				
Documentation provided by CME				
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023				
VVB assessment				**Date:** 05/06/2023
CME has made the necessary corrections in the revised MR which is now consistent with GS4GG template guide. CAR 01 is closed.				

CAR ID	02	**Section no.**	MR/ER spreadsheet	**Date:** 05/05/2023
Description of CAR				
The formulae used in cells F27, G27, H27 and I27 on 'SD Parameters Assessment' worksheet of the ER calculation spreadsheet to derive the values for parameter $HHS_{Project}$ have not captured question numbers 2.1 and 3.3 (columns Z and AB of 'Monitoring Summary' worksheet) from the monitoring survey questionnaire. CME is requested to justify this.				
CME response				**Date:** 16/05/2023
The notation of the parameter $HHS_{Project}$ has now been updated to $TMS_{Project}$ in line with the VPA-DD. The corresponding formulae for the same have been adjusted and now involve columns Z and AB of 'Monitoring Summary' worksheet.				
Documentation provided by CME				
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023 *GS 10833 VPA 01-08 CP2 MP1 ER Calculator v2.0 16052023*				
VVB assessment				**Date:** 05/06/2023
CME has amended the formulae used in cells F27, G27, H27 and I27 on 'SD Parameters Assessment' worksheet of the revised ER calculation spreadsheet and the formulae used in the concerned cells now capture question numbers 2.1 and 3.3 (columns Z and AB of 'Monitoring Summary' worksheet) from the monitoring survey questionnaire. Also, the parameter symbol has been updated from $HHS_{Project}$ to $TMS_{Project}$ to be aligned with the VPA-DD. The above changes are deemed logical and appropriate. CAR 02 is closed.				

CAR ID	03	**Section no.**	MR	**Date:** 05/05/2023
Description of CAR				

For SDG 8, the actual values achieved (35 and 40 for MS1 and MS2 respectively) have increased from the value estimated (25) in ex ante calculation of approved VPA-DD. CME is requested provide appropriate justification for this in section E.6 of the MR and provide remarks for all other SDGs.	
CME response	**Date:** 16/05/2023
The VPA-DD presents information at the VPA level individually and not for the group of VPAs combined. For the concerned monitoring period, given 8 VPAs are bundled together hence the ex-ante value applicable is 200 (=25*8). Thus, the number of employments in MS1 and MS2 (35 and 40 respectively) is lower than the ex-ante value specified in the VPA-DDs.	
Documentation provided by CME	
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023 *GS 10833 VPA 01-08 CP2 MP1 ER Calculator v2.0 16052023*	
VVB assessment	**Date:** 05/06/2023
The explanation provided is deemed logical and acceptable. CAR 03 is closed.	

CAR ID	04	**Section no.**	WBT calculator spreadsheet	**Date:** 05/05/2023
Description of CAR				
Data entered in the WBT calculator spreadsheet do not match with the corresponding values in the scanned copies of the WBT data entry forms for some of the ICS, viz. ARA-SIR-TAR-TAR-D-44, JAS-GAI-GOB-DOR-C-710. CME is requested to check all the data entered and make rectifications where necessary.				
CME response				**Date:** 16/05/2023
The data in the WBT calculator is corrected and now consistent with the WBT data entry forms.				
Documentation provided by CME				
10833 CP2 MP1 (WBT) Data Calculator V2.0_16052023				
VVB assessment				**Date:** 05/06/2023
CME has rectified the data-entry error in the revised WBT calculator spreadsheet and accordingly adjusted the corresponding values in the revised ER spreadsheet to be consistent with scanned WBT data entry forms. CAR 04 is closed.				

CAR ID	05	**Section no.**	MR/ER spreadsheet	**Date:** 05/05/2023
Description of CAR				
The total number of monitoring survey forms submitted for domestic stoves in MS #2 is 90; however, the ER spreadsheet and MR report 88 samples only. CME is requested to clarify on this discrepancy.				
CME response				**Date:** 16/05/2023
The two samples were left out from being reported in the ER sheet as a matter of oversight. Requisite corrections have been made in the 'Monitoring Summary' tab of the ER spreadsheet to report all 90 samples monitored for MS#2. The MR has been revised accordingly.				
Documentation provided by CME				
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023 *GS 10833 VPA 01-08 CP2 MP1 ER Calculator v2.0 16052023*				
VVB assessment				**Date:** 05/06/2023
CME has now included the two entries that were previously left out in error in the 'Monitoring Summary' tab of the revised ER spreadsheet. CAR 05 is closed.				

Table 3. CLs from this verification

CL ID	01	**Section no.**	MR	**Date:** 05/05/2023
Description of CL				
In Table 1, the final achieved values for SDG 13 (i.e., total of all vintage values) do not correlate with vintage-wise break-ups for amount of CO_2e emissions reduced by each VPA. CME is requested to rectify as necessary.				
CME response				**Date:** 16/05/2023
The amount achieved for SDG 13 for the monitoring period reported in the MR is now consistent with 'ER Summary' tab of the ER spreadsheet.				

Documentation provided by CME	
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023	
VVB assessment	**Date:** 05/06/2023
CME has corrected the final achieved values for SDG 13 in Table 1 of the revised MR. The updated values are consistent with vintage-wise break-up values and aligned with the ER spreadsheet. CL 01 is closed	

CL ID	02	**Section no.**	MR	**Date:** 05/05/2023
Description of CL				
In section A.3 of the MR, standard for *Sampling and surveys for CDM project activities and programmes of activities, version 08.0* has been referred, whereas, as per the applicable VPA-DD, sampling was to be performed as specified by version 09.0 of the standard. CME is requested to provide clarification on this.				
CME response				**Date:** 16/05/2023
The applicable sampling standard has been corrected in the MR and now consistent with the applicable VPA-DD.				
Documentation provided by CME				
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023				
VVB assessment				**Date:** 05/06/2023
CME has corrected the editorial mistake to now reflect the correct version (i.e., version 09.0) of the standard for *Sampling and surveys for CDM project activities and programmes of activities* in the revised MR. CL 02 is closed.				

CL ID	03	**Section no.**	MR	**Date:** 05/05/2023
Description of CL				
The operational lifetime of both domestic and non-domestic ICS is described as “up to 10 years” in section B.1 of the MR. CME is requested to provide appropriate documentary evidence to support this.				
CME response				**Date:** 16/05/2023
The requested document for operational lifetime of the project ICS is being submitted.				
Documentation provided by CME				
Life Span Certificate				
VVB assessment				**Date:** 05/06/2023
CME has provided the required evidence for operational lifetime of the ICS (Bondhu Chula). CL 03 is closed.				

CL ID	04	**Section no.**	MR/ER spreadsheet	**Date:** 05/05/2023
Description of CL				
For monitored parameter $N_{y,i,j}$, some of the values reported do not align with the corresponding values shown on the ‘ER Calculation (D)’ and ‘ER Calculation (ND)’ worksheets of the ER calculation spreadsheet. CME is requested to clarify.				
CME response				**Date:** 16/05/2023
The value for parameter $N_{y,i,j}$ has been corrected in the MR and is now consistent with the ‘ER Calculation (D)’ and ‘ER Calculation (ND)’ tab of the ER spreadsheet.				
Documentation provided by CME				
GS 10833 VPA 01-08 CP2 MP1 Monitoring Report v2.0 16052023 *GS 10833 VPA 01-08 CP2 MP1 ER Calculator v2.0 16052023*				
VVB assessment				**Date:** 05/06/2023
CME has updated the values in $N_{y,i,j}$ parameter table of the revised MR and these values are now consistent between MR and ER spreadsheet. CL 04 is closed.				

Table 4. FARs from this verification

Nil

Appendix 5. Data and parameters fixed ex ante

SDG 13: Climate Change

Parameter	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices ($B_{old,p}$)
Data unit:	tonnes/ person/year
Default values used:	0.50
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Average number of persons served per household prior to the project implementation ($N_{p,HH}$)
Data unit:	Number
Default values used:	4.3
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Annual quantity of woody biomass that would have been used in the household/SME in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices ($B_{old,HH}$)
Data unit:	tonnes/household/year
Default values used:	2.15
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type i and batch j ($B_{old,i,j}$)
Data unit:	tonnes/year
Default values used:	2.15 for Domestic 59.66 for non-Domestic
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass. ($f_{NRB,y}$)
Data unit:	Fraction
Default values used:	0.843
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Emission factor for fossil fuels projected to be used for substitution of non- renewable woody biomass by similar consumers ($EF_{projected\_fossilfuel}$)
Data unit:	tCO_2/ TJ
Default values used:	64.4
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Net to Gross Leakage Adjustment factor (LAF_y)

Data unit:	Fraction
Default values used:	0.95
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG-1: No Poverty:

Parameter	Average household savings due to decrease in expenditure on basic services such as cooking in baseline ($TMS_{Baseline}$)
Data unit:	%
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Parameter	Access to Basic Services (Number of ICS distributed under the baseline) ($BSA_{Baseline}$)
Data unit:	Number
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG 3: Good Health and Well Being

Parameter	% Users reporting reduction in smoke/PM emissions while cooking on improved stove in baseline ($SPM_{Baseline}$)
Data unit:	%
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG 5: Gender Equality

Parameter	% Users reporting time saving due to reduced collected fuel consumption / cooking time in baseline ($ATS_{Baseline}$)
Data unit:	%
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG 7: Affordable and Clean Energy

Parameter	Access to affordable and clean energy (% of operating ICS units under Baseline) ($ACS_{Baseline}$)
Data unit:	%
Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG 8: Decent Work and Economic Growth

Parameter	Quantitative Employment and income generation (Number of person (male and female) hired under Baseline) ($QE\ IG_{Baseline}$)
Data unit:	Number

Default values used:	0
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

SDG 12: Responsible Consumption and Production

SDG 15: Life on Land

Parameter	Average fuel consumption per user in Baseline ($FC_{Baseline}$)
Data unit:	tonnes/year/HH
Default values used:	2.15: domestic 59.66: non-domestic
Purpose of data	Baseline emissions calculation
Source and Verification of the source	The value of this parameter is fixed ex-ante /B04/.

Appendix 6. Data and parameters monitored

SDG 13: Climate Change

<table>
<tr><th>Monitoring Parameter Requirement</th><th>Assessment/ Observation by the VVB</th></tr>
<tr><td>Data / Parameter:
(as in monitoring plan of VPA-DD):</td><td>Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)</td></tr>
<tr><td>Measuring frequency/Time Interval:</td><td>Continuous</td></tr>
<tr><td>Reporting frequency:</td><td>Yearly</td></tr>
<tr><td>Reported value:</td><td>
<table>
<tr><th rowspan="2">Batch /Vintage</th><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>2013</td><td>3,01,400</td><td>2,652</td><td>295,055</td><td>2,610</td></tr>
<tr><td>2014</td><td>60,392</td><td>376</td><td>61,176</td><td>358</td></tr>
</table>
</td></tr>
<tr><td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td><td>Yes</td></tr>
<tr><td>Details of monitoring equipment:</td><td>Sales database and monitoring survey</td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the VPA-DD? If the VPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?</td><td>An electronic sales database has been maintained for the project activity.</td></tr>
<tr><td>Calibration frequency /interval:
Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification</td><td>NA</td></tr>
<tr><td>Is the calibration interval in line with the monitoring plan of the VPA-DD? If the VPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?</td><td>NA. QA/QC procedures stated in MR comply with VPA-DDs.</td></tr>
<tr><td>Company performing the calibration(internal or external calibration):</td><td>NA</td></tr>
<tr><td>Did calibration confirm proper functioning of monitoring equipment? (Yes / No):</td><td>NA</td></tr>
<tr><td>Is (are) calibration(s) valid for the whole reporting period?</td><td>NA</td></tr>
<tr><td>If applicable, has the reported data been cross-checked with other available data?</td><td>Yes, the value of parameter has been cross-checked with the monitoring database and sample households and the scanned copy records were also checked.</td></tr>
<tr><td>How were the values in the monitoring report verified?</td><td>NA</td></tr>
<tr><td>Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission</td><td>Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.</td></tr>
</table>

reductions and are necessary QA/QC processes in place?	
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

<table>
<tr><th>Monitoring Parameter Requirement</th><th>Assessment/ Observation by the VVB</th></tr>
<tr><td>Data / Parameter:
(as in monitoring plan of VPA-DD):</td><td>Efficiency of the device of each type i and batch j implemented as part of the project activity ($\eta_{new,i,j}$)</td></tr>
<tr><td>Measuring frequency/Time Interval:</td><td>Annual</td></tr>
<tr><td>Reporting frequency:</td><td>Annual</td></tr>
<tr><td>Reported value:</td><td>
<table>
<tr><th rowspan="2">Batch /Vintage</th><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>2013</td><td>0.2483</td><td>0.2138</td><td>0.2422</td><td>0.2117</td></tr>
<tr><td>2014</td><td>0.2513</td><td>0.2168</td><td>0.2451</td><td>0.2142</td></tr>
</table>
</td></tr>
<tr><td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td><td>Yes</td></tr>
<tr><td>Details of monitoring equipment:</td><td>The stove efficiency testing has been determined by WBTs conducted in January-February 2022 and January-February 2023 for MS1 and MS2 respectively in line with the guidance provided by the CME in the VPA-DDs /B04/ /10/. The monitoring equipment used for conducting the stove efficiencies by WBTs are digital thermometer, digital weighing scale, digital moisture meter. All the monitoring equipment were newly purchased and were under factory calibration at the time of use, so measurements were done with the necessary guarantees and hence deemed acceptable /8/.

QA/QC procedures stated in MR comply with VPA-DD and the details of equipment used for conducting WBT is as follows:

<u>MS1:</u>

<table>
<tr><th>Specifications</th><th>Digital Thermometer</th><th>Digital Weighing Scale</th><th>Digital Moisture Meter</th></tr>
<tr><td>Manufacturer</td><td>TES</td><td>AND GULF</td><td>Smart Sensor</td></tr>
<tr><td>Model/Serial No.</td><td>1310 Type-K</td><td>M-ACS series</td><td>AS971F</td></tr>
<tr><td>No. of units</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Accuracy</td><td>0.1 ^{0}C</td><td>1g</td><td>0.5%</td></tr>
<tr><td>Purchase date</td><td>20/12/2021</td><td>20/12/2021</td><td>20/12/2021</td></tr>
</table>
</td></tr>
</table>

Specifications	Digital Thermometer	Digital Weighing Scale	Digital Moisture Meter
Manufacturer	Nicety	AND	-
Model/Serial No.	DT 1312 K-Type S. No: 174745	FKS series	MD 814 S. No: 2201004114
No. of units	1	1	1
Accuracy	0.1 ^{0}C	1g	1%
Purchase date	20/12/2021	20/12/2021	20/12/2021

MS2:

Specifications	Digital Thermometer	Digital Weighing Scale	Digital Moisture Meter
Manufacturer	Nicety	AND	-
Model/Serial No.	DT 1312 K-Type S. Nos: 174797, 174912	FKS series	MD 814 S. Nos: 2201004100, 2201004095
No. of units	2	2	2
Accuracy	0.1 ^{0}C	1g	1%
Purchase date	27/01/2022	27/01/2022	27/01/2022

Specifications	Digital Thermometer	Digital Weighing Scale	Digital Moisture Meter
Manufacturer	Nicety	AND	-
Model/Serial No.	DT 1312 K-Type S. No: 174832	FKS series	MD 814
No. of units	1	1	1
Accuracy	0.1 ^{0}C	1g	1%
Purchase date	22/01/2023	22/01/2023	22/01/2023

Is accuracy of the monitoring equipment as stated in the VPA-DD? If the VPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	VPA-DD does not specify the accuracy of the monitoring equipment (thermometer, mass balance and moisture meter). Verification team confirms that the accuracy of the monitoring equipment used represent good monitoring practice based on sectoral expertise.
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	Monitoring equipment were newly purchased and were under factory calibration at the time of use.
Is the calibration interval in line with the monitoring plan of the VPA-DD? If the VPA-DD does not specify the frequency of	The exact calibration interval has not been provided in the VPA-DD and the monitoring equipment to be used by the surveyor are to be calibrated as per manufacturer guidance. However, since all equipment were newly purchased and were under

calibration, does the selected frequency represent good monitoring practise?	factory calibration at the time of use, the selected frequency represents good monitoring practice.
Company performing the calibration(internal or external calibration):	NA. Equipment were newly purchased and were under factory calibration.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA. Equipment were newly purchased and were under factory calibration.
Is (are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid for the whole monitoring period.
If applicable, has the reported data been cross-checked with other available data?	The data has been cross-checked with the WBT test documents /10/. For the stove efficiency parameter, WBT have been performed and this has been checked by the verification team with the related spreadsheet. Furthermore, the verification team has cross checked all the raw data input records in the WBT calculation spread sheets including the calculation procedure for the sampled households and found them to be correct. All the raw data forms for the WBT carried out for efficiency parameter were checked by the verification team and thus no sampling of data is required. Correctness of the stove thermal efficiency values were verified by the verification team based on the review of the WBT calculation spread sheet for correctness of calculations in line with WBT protocol, original test records and review of measuring equipment used during WBTs for calibration and accuracy.
How were the values in the monitoring report verified?	The reported data has been cross-checked against the raw data sheets for the WBTs and calculation sheets /10/ and compared with the ER sheet /2/ and the MR /1/.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VPA-DD):	Adjustment to account for any continued use of pre-project devices during the year y (μ_y)
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	<table><tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr><tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr><tr><td>0.99</td><td>1.00</td><td>0.98</td><td>1.00</td></tr></table>

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from Ex-Post Monitoring survey records
Is accuracy of the monitoring equipment as stated in the VPA-DD? If the VPA-DD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VPA-DD? If the VPA-DD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VPA-DDs.
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with monitoring survey records and the ER sheet /2/.
How were the values in the monitoring report verified?	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Sustainable Development Contributions Achieved

<table>
<tr><th>Sustainable Development Goals Targeted</th><th>SDG Impact</th><th>Amount Achieved</th><th>Units/ Products</th><th>Data source</th></tr>
<tr><td>13 Climate Action</td><td>Amount of CO2e emissions reduced by the project</td><td>
<table>
<tr><th rowspan="2">VPA ID</th><th colspan="4">Vintage-wise breakup</th></tr>
<tr><th>2021</th><th>2022</th><th>2023</th><th>Values achieved</th></tr>
<tr><td>GS10974</td><td>54,459</td><td>54,042</td><td>1,775</td><td>110,276</td></tr>
<tr><td>GS10976</td><td>53,899</td><td>53,369</td><td>1,753</td><td>109,021</td></tr>
</table>
</td><td>tCO_2e/ VERs</td><td>The data is sourced from the ER calculation sheet for the</td></tr>
</table>

<table>
<tr>
<td></td>
<td></td>
<td>
<table>
<tr><td>GS10977</td><td>54,029</td><td>53,419</td><td>1,754</td><td>109,202</td></tr>
<tr><td>GS10978</td><td>54,315</td><td>53,634</td><td>1,762</td><td>109,711</td></tr>
<tr><td>GS10979</td><td>54,163</td><td>53,512</td><td>1,758</td><td>109,433</td></tr>
<tr><td>GS10980</td><td>54,826</td><td>54,098</td><td>1,776</td><td>110,700</td></tr>
<tr><td>GS10981</td><td>55,387</td><td>55,107</td><td>1,810</td><td>112,304</td></tr>
<tr><td>GS10982</td><td>51,225</td><td>51,845</td><td>1,704</td><td>104,774</td></tr>
<tr><td>Total</td><td>432,303</td><td>429,026</td><td>14,092</td><td>875,421</td></tr>
</table>
</td>
<td></td>
<td>monitoring period.</td>
</tr>
<tr>
<td>1 No Poverty
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance</td>
<td>1.4.1 Proportion of population living in households with access to basic services

Indicator: Cumulative Number of ICS distributed under the project as an indicator of providing basic service access to households</td>
<td>
<table>
<tr><th rowspan="2">VPA ID</th><th colspan="2">2021</th><th colspan="2">2022</th><th colspan="2">2023</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>GS10974</td><td>44,457</td><td>812</td><td>44,457</td><td>812</td><td>44,457</td><td>812</td></tr>
<tr><td>GS10976</td><td>49,842</td><td>586</td><td>49,842</td><td>586</td><td>49,842</td><td>586</td></tr>
<tr><td>GS10977</td><td>53,837</td><td>443</td><td>53,837</td><td>443</td><td>53,837</td><td>443</td></tr>
<tr><td>GS10978</td><td>57,433</td><td>322</td><td>57,433</td><td>322</td><td>57,433</td><td>322</td></tr>
<tr><td>GS10979</td><td>55,934</td><td>371</td><td>55,934</td><td>371</td><td>55,934</td><td>371</td></tr>
<tr><td>GS10980</td><td>60,068</td><td>247</td><td>60,068</td><td>247</td><td>60,068</td><td>247</td></tr>
<tr><td>GS10981</td><td>58,448</td><td>314</td><td>58,448</td><td>314</td><td>58,448</td><td>314</td></tr>
<tr><td>GS10982</td><td>53,033</td><td>293</td><td>53,033</td><td>293</td><td>53,033</td><td>293</td></tr>
<tr><td>Total</td><td>433,052</td><td>3,388</td><td>433,052</td><td>3,388</td><td>433,052</td><td>3,388</td></tr>
</table>
</td>
<td>Number</td>
<td>The data is sourced from the sales database</td>
</tr>
<tr>
<td>1 No Poverty
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other</td>
<td>1.4.1 Proportion of population living in households with access to basic services

Indicator: % users reporting money saving due to reduction in purchased fuel consumption in project</td>
<td>
<table>
<tr><th colspan="4">TMS</th></tr>
<tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
</table>
</td>
<td>%</td>
<td>The data is sourced from the monitoring survey of samples</td>
</tr>
</table>

<table>
<tr><td>forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3 Good Health and Well Being
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.</td><td>3.9.1 - Mortality rate attributed to household and ambient air pollution

Indicator: % users reporting reduction in smoke/PM after shifting to ICS in project</td><td><table><tr><th colspan="4">SPM</th></tr><tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr><tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr><tr><td>83.54%</td><td>89.39%</td><td>82.22%</td><td>87.50%</td></tr></table></td><td>%</td><td>The data is sourced from the monitoring survey of samples</td></tr>
<tr><td>5 Gender Equality
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.</td><td>5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location

Indicator: % users reporting time saving due to reduction in collected fuel consumption / cooking time in project</td><td><table><tr><th colspan="4">ATS</th></tr><tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr><tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr><tr><td>83.54%</td><td>89.39%</td><td>82.22%</td><td>87.50%</td></tr></table></td><td>%</td><td>The data is sourced from the monitoring survey of samples.</td></tr>
</table>

<table>
<tr>
<td>7 Affordable and Clean Energy
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services</td>
<td>7.1.2 Proportion of population with primary reliance on clean fuels and technology

Indicator: % users reporting an operational ICS in project</td>
<td>
<table>
<tr><th colspan="4">ACS</th></tr>
<tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>83.54%</td><td>89.37%</td><td>82.26%</td><td>87.61%</td></tr>
</table>
</td>
<td>%</td>
<td>The data is sourced from the monitoring survey of samples</td>
</tr>
<tr>
<td>8 Decent Work and Economic Growth
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</td>
<td>8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

Indicator: Number of male / female numbers of employment created by project</td>
<td>
<table>
<tr><th colspan="2">QEIG</th></tr>
<tr><th>MS1</th><th>MS2</th></tr>
<tr><td>35</td><td>40</td></tr>
</table>
</td>
<td>Number</td>
<td>The data is sourced from the employment records.</td>
</tr>
<tr>
<td>12 Responsible Consumption and Production
12.2 By 2030, achieve the sustainable management and efficient use of natural resources</td>
<td>12.2.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

Indicator: Average % Fuel savings reported by users in the project</td>
<td>
<table>
<tr><th colspan="4">%Fuel Saving_{Net Benefit}</th></tr>
<tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>59.80%</td><td>53.31%</td><td>58.80%</td><td>52.83%</td></tr>
</table>
</td>
<td>%</td>
<td>The data is sourced from the monitoring survey of samples</td>
</tr>
<tr>
<td>15 Life on Land
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt</td>
<td>15.2.1 Progress towards sustainable forest management</td>
<td>
<table>
<tr><th colspan="4">Fuel Saving_{Net Benefit}</th></tr>
<tr><th colspan="2">MS1</th><th colspan="2">MS2</th></tr>
<tr><th>Domestic</th><th>Non-Domestic</th><th>Domestic</th><th>Non-Domestic</th></tr>
<tr><td>1.29</td><td>31.81</td><td>1.26</td><td>31.52</td></tr>
</table>
</td>
<td>Tonnes / user / year</td>
<td>The data is sourced from the</td>
</tr>
</table>

deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Indicator: Wood fuel eq savings reported by user in the project			monitoring survey of samples

Furthermore, during on-site interviews it was confirmed that no disputes, inputs and comments have been received via the Continuous Input and Grievance Mechanism during the monitoring period.

APPENDIX 7. Assessment of Safeguarding Principles

Safeguarding Principles	Assessment Questions/ Requirements	How Project will achieve Requirements through design, management or risk mitigation.	Verification team assessment
Principle 1. Human Rights	1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights	The PoA and CME both respect human rights and are not complicit in violence or human rights abuses.	The PoA involves dissemination of improved cookstove which users are free to choose. This project is a voluntary action by the project developer and no risk and issues to the internationally proclaimed human rights are expected from this project. The PoA and CME both respect human rights and are not complicit in violence or human rights abuses. No mitigation measure required. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.1.1 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
	2. The Project shall not discriminate with regards to participation and inclusion	The PoA does not discriminate with regards to participation and inclusion	The PoA involves dissemination of improved cookstove which users are free to choose. There is no discrimination against any person or group regarding the possibility to buy a stove. No mitigation measure required. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.1.2 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
Principle 2. Gender Equality	3. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women (a) Sexual harassment and/or any forms of violence against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking.	Not relevant	This is not relevant for the project activity.
	(b) Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls.	Not relevant	This is not relevant for the project activity.

	(c) Restriction of women's rights or access to resources (natural or economic).	Not relevant	This is not relevant for the project activity.
	(d) Recognise women's ownership rights regardless of marital status – adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources.	Not relevant	This is not relevant for the project activity.
	1. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work: (a) Where appropriate for the implementation of a PoA/VPA, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities.	Not relevant	This is not relevant for the project activity.
	(b) Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status.	Not relevant	This is not relevant for the project activity.
	(c) Ensure that these conditions do not limit the access of women or men, as the case may be, to PoA/VPA participation and benefits.	Not relevant	This is not relevant for the project activity.
	4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks	No gender risks are envisaged in the PoA	The PoA involves dissemination of improved cookstove which users are free to choose. There are no gender risks envisaged during the dissemination of cookstoves. No mitigation measure required. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.2.3 of the GS4GG safeguarding principles requirements version 1.2 /B08/
	5. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)	Not relevant	This is not relevant for the project activity.

Principle 3. Community Health, Safety and Working Conditions	1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	The PoA reduces exposure to indoor air pollutants and smoke levels, further reducing incidence of respiratory illness compared to cooking on traditional biomass stoves using solid biomass fuel.	The improved cookstove will help to improve the air quality by reducing air pollution and thus avoids community exposure to increased health risks. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.3.1 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
Principle 4.1 Sites of Cultural and Historical Heritage	1. Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	Not relevant	This is not relevant for the project activity.
Principle 4.2 Forced Eviction and Displacement	1. Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	Not relevant	This is not relevant for the project activity.
Principle 4.3 Land Tenure and Other Rights	1. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	Not relevant	This is not relevant for the project activity.
Principle 4.4 Indigenous People	1. Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	Since this is a cookstove distribution project, there is no risk to land/territory claimed by indigenous peoples. Cookstoves will be distributed to all willing customers within the project boundary.	This is not relevant for the project activity.
Principle 5. Corruption	1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	The CME does not promotes / or is complicit in direct or indirect corruption.	The PoA does not in any way promote or complicity corruption. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.5.1 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
Principle 6.1 Labour Rights	1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions	The PoA does not involve any forced labour and the PP ensures that all employment is in compliance with local labour regulations and laws.	The PoA does not involve any kind of forced labour or compulsory labour. The validation team confirms that PoA fulfils the GS certification requirement outlined in the para 3.6.1 of the GS4GG safeguarding principles requirements version 1.2 /B08/.

	2. Workers shall be able to establish and join labour organisations	The CME puts no constraints / limitation on employees to form a union.	The CME does not limit any of the employees to form unions or join labour organizations. The validation team confirms that PoA fulfils the GS certification requirement outlined in the para 3.6.1 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
	3. Working agreements with all individual workers shall be documented and implemented and include: a. Working hours (must not exceed 48 hours per week on a regular basis), AND b. Duties and tasks, AND c. Remuneration (must include provision for payment of overtime), AND d. Modalities on health insurance, AND e. Modalities on termination of the contract with provision for voluntary resignation by employee, AND f. Provision for annual leave of not less than 10 days per year, not including sick and casual leave.	The CME's policies and employment contracts are compliant with the requirement	The PoA does not involve any kind of forced labour or compulsory labour. The CME has submitted HR Policy & Employee Handbook and also Employee in this respect. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.6.1 (b) of the GS4GG safeguarding principles requirements version 1.2 /B08/.
	4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)	The CME does not promote / or is complicit in child labour	The PoA does not involve any kind of child labour and the CME shall take adequate steps to ensure the age verification process is thoroughly carried out while recruitment. The validation team confirms that PoA fulfils the GS requirement outlined in the para 3.6.2 of the GS4GG safeguarding principles requirements version 1.2 /B08/.
	5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures	Not relevant	This is not relevant for the project activity.

Principle 6.2 Negative Economic Consequences	1. Does the project cause negative economic consequences during and after project implementation?	No negative economic consequences are deemed applicable	No negative economic consequences are deemed applicable. This is not relevant for the project activity.
Principle 7.1 Emissions	1. Will the Project increase greenhouse gas emissions over the Baseline Scenario?	The PoA reduces GHG emissions relative to baseline scenario	The project involves dissemination of improved cookstove which will reduce GHG emissions compared to the baseline scenario. This is not relevant for the project activity.
Principle 7.2 Energy Supply	1. Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	The project will reduce fuel resource consumption instead	The improved cookstove does not use energy from local grid or power supply. The cook stove requires fuel wood as an energy source. The project will reduce fuel resource consumption. The validation team confirms that PoA fulfils the GS requirement outlined in the GS4GG safeguarding principles requirements version 1.2 /B08/
Principle 8.1 Impact on Natural Water Patterns/Flows	1. Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	Not applicable	This is not relevant for the project activity.
Principle 8.2 Erosion and/or Water Body Instability	1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	The PoA shall result in reduction in demand of biomass fuel in the region putting less pressure of forests for deforestation and will hence indirectly avoid erosion associated with tree cutting/ felling.	The project involves dissemination of improved cookstove and does not in any way cause additional erosion and/or water body instability or disrupt the natural pattern of erosion. The PoA shall result in reduction in demand of biomass fuel in the region putting less pressure of forests for deforestation and will hence indirectly avoid erosion associated with tree cutting/ felling. The validation team confirms that PoA fulfils the GS requirement outlined in the GS4GG safeguarding principles requirements version 1.2 /B08/.
Principle 9.1 Landscape Modification and Soil	1. Does the Project involve the use of land and soil for production of crops or other products?	Not applicable	This is not relevant for the project activity.
Principle 9.2 Vulnerability to	1. Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides,	Not applicable	This is not relevant for the project activity.

Natural Disaster	erosion, flooding, drought or other extreme climatic conditions?		
Principle 9.3 Genetic Resources	1. Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	Not applicable	This is not relevant for the project activity.
Principle 9.4 Release of pollutants	1. Could the Project potentially result in the release of pollutants to the environment?	The PoA reduces indoor air pollution relative to baseline scenario	The project involves dissemination of improved cookstove which will reduce indoor air pollution compared to the baseline scenario. This is not relevant for the project activity.
Principle 9.5 Hazardous and Non-hazardous Waste	1. Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Not applicable	This is not relevant for the project activity.
Principle 9.6 Pesticides & Fertilisers	1. Will the Project involve the application of pesticides and/or fertilisers?	Not applicable	Not applicable
Principle 9.7 Harvesting of Forests	1. Will the Project involve the harvesting of forests?	The PoA does not involve harvesting of forests. The PoA shall result in reduction in demand of biomass fuel in the region putting less pressure of forests for deforestation and will hence indirectly avoid erosion associated with tree cutting/ felling.	The PoA involves in the reduction of fuel wood consumption therefore it will positively support the forest resources. The validation team confirms that PoA fulfils the GS requirement outlined in the GS4GG safeguarding principles requirements version 1.2 /B08/.
Principle 9.8 Food	1. Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	Not applicable	This is not relevant for the project activity.
Principle 9.9 Animal husbandry	1. Will the Project involve animal husbandry?	Not applicable	This is not relevant for the project activity.

Principle 9.10 High Conservation Value Areas and Critical Habitats	1. Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	Not applicable	This is not relevant for the project activity.
Principle 9.11 Endangered Species	1. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? AND/OR Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	Not applicable	This is not relevant for the project activity.

APPENDIX 8: Gold Standard Verification Protocol

CCIPL's Checklist question	Ref.	MoV[1]	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Sustainability Monitoring					
1.1 Have all non-neutral indicators been monitored as per the sustainability monitoring plan?	/1/	DR,	Yes, all the non-neutral indicators have been monitored as per the sustainability monitoring plan.	OK	OK
1.2 Have the methods to monitor data changed? And are they suitable to the project scale and type?	/1/	DR	Methods to monitor data have not changed as compared with the monitoring plan in the registered passport and monitoring plan.	OK	OK

[1] MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

CCIPL's Checklist question	Ref.	MoV[1]	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1.3 Has the way of monitoring been followed? With the inclusion of dates and parameters?	/1/	DR	The sustainability monitoring plan has been followed as per described in the Passport.	OK	OK
1.4 Have mitigation measures been put in place to prevent the risk of the violation of the safe guarding principle of "Do No Harm" assessment or to neutralise a Sustainable Development Indicator that is being monitored?	/1/	DR	The mitigation measures have been put in place that has been put in records as a proof of the same. Several supporting documents as listed under Appendix 3 have been provided. Also, the on-site interview of the households and interviews of the trained personals of PP were performed during on-site interview.	OK	OK
1.5 Has all the data in the Sustainability development matrix been verified and cross checked against available sources of project data? Has it been described how sustainable development would be affected if a variance occurred?	/1/	DR and on-site interview	Yes, all data in the sustainability development matrix have been verified and cross checked from the supporting documents and during on-site audit.	OK	OK
2. Other					
2.1 Are there any issues from the previous validation/verification? (ie FARs, requests / approvals for RMP)	/1/ /B03/	DR	No	OK	OK
2.2 Has the project ever received any requests for reviews or incompletes from the UNFCCC or GS Secretariat?	/1/ /B03/	DR	No there are no request for reviews or incomplete for the project.	OK	OK
2.3 The evaluation of the status of mitigation and compensation measures has been verified.	/1/ /B03/	DR	Yes, the status of mitigation and compensation measures has been verified.	OK	OK