



WOMEN LED CLEANER COOKING INITIATIVE IN ODISHA



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Summary:

4K Earth Science Private Limited (4KES) has been contracted by “SDG13 Ventures Pte Ltd” to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘Women led cleaner cooking initiative in Odisha’ for the monitoring period 01/06/2022 - 30/06/2023 in the initial monitoring report version 1.2, dated 09/08/2023. The proposed grouped project seeks to increase access of households and communities to improved cook stoves in the rural and semi-urban households of Odisha, India.

The proposed grouped project activity will help in reducing the GHG emissions. The old and traditional cook stoves having low thermal efficiency and emitting high amounts of greenhouse gases will be replaced with new and efficient cook stove technologies, viz., Improved Cook Stoves (ICS). Implementation of the proposed grouped project activity will also help in the reduction of consumption of firewood, reduction of greenhouse gases, conservation of forest and also improving the quality of health of the ICS users. This is complimented by better indoor air quality as well as drudgery reduction in everyday cooking for women involved.

The Project Proponent (PP) has distributed /single pot Greenway Jumbo cook stoves. During the current monitoring period, a total of 89,372 ICS have been distributed to individual households in various districts of the state of Odisha in India. The ICS deployed under project activity are manufactured and supplied by Greenway Grameen Infra Pvt Ltd. The PP works with local partners to identify and supply stoves, conduct awareness programs and collect data.

The distribution of ICS started and the first batch was commissioned on 1st June, 2022, which is also the start date of the crediting period for the project activity. Onwards, the daily basis number of ICS distributed is considered as a batch for calculation of emission reduction. All the data recorded during stove registration was captured through a mobile application, the collected information then transferred to the project database.

During the current monitoring period i.e., from 1 June 2022 to 30 June 2023, total 89,372 ICS were operational and resulted in the emission reductions of 285,123 tCO₂e.

A risk based approach has been followed to perform the 1st periodic verification of the project activity. In the course of the verification, 05 Corrective Action Requests (CARs) and 05 Clarification (CL) were raised.

The management of the ‘SDG13 Ventures Pte Ltd’ responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project final monitoring report Version 1.4 dated 06/03/2024. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the ‘SDG13 Ventures Pte Ltd’. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 1.4 dated 06/03/2024.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/06/2022 - 30/06/2023 based on the reported emission reductions in the final monitoring report Version 1.4 dated 06/03/2024 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, 4KES planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

4KES confirms the following;

Reporting period: 01/06/2022 to 30/06/2023

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
1 st June, 2022 to 31 st December 2022	73,667	0	0	73,667
1 st Jan 2023 to 30 th June 2023	211,456	0	0	211,456
Total	285,123	0	0	285,123

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1 INTRODUCTION

1.1 Objective

4KES has been commissioned by 'SDG13 Ventures Pte Ltd' to perform verification of its registered VCS project 'Women led cleaner cooking initiative in Odisha', for the reported GHG emission reductions for the given monitoring period 01/06/2022 - 30/06/2023 (both dates included). The VCS projects must undergo an independent third party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the project description (PD) /5/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report/1/ and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology/7/ and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs) without any double counting, and
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation

1.2 Scope and Criteria

The scope of verification is to assess the claims and assumptions made in the VCS monitoring report/1/ (MR) against the VCS criteria/3/4/, including but not limited to VCS standard/3/, applied methodology/7/ and other relevant rules and requirements established for VCS project activities.

The Verification is not meant to provide any consulting to the project participants. However, the clarification requests and/or correction actions requests raised during the verification may have provided inputs for improvement of the project design.

1.3 Level of Assurance

The verification team verified the monitoring data for the monitoring parameters of the monitoring plan against the Monitoring report/1/ and ER Calculation sheet/2/ and confirms that the reported emission reductions are free from any type of material errors. Interviews were also conducted to verify the implementation and monitoring plan of the project activity. The implementation of the project activity was verified during the physical interviews and from the document review and found in accordance with the monitoring report and registered VCS PD. Therefore, 4KES confirms that the verification is conducted with reasonable level of assurance.

1.4 Summary Description of the Project

The proposed grouped project activity will help in reducing the GHG emissions. The old and traditional cook stoves having low thermal efficiency and emitting high amounts of greenhouse gases will be replaced with new and efficient cook stove technologies, viz., Improved Cook Stoves (ICS). Implementation of the proposed grouped project activity will also help in the reduction of consumption of firewood, reduction of greenhouse gases, conservation of forest and also improving the quality of health of the ICS users. This is complimented by better indoor air quality as well as drudgery reduction in everyday cooking for women involved.

The Project Proponent (PP) has distributed /single pot Greenway Jumbo cook stoves. During the current monitoring period, a total of 89,372 ICS/16/ have been distributed to individual households in various districts of the state of Odisha in India. The ICS deployed under project activity are manufactured and supplied by Greenway Grameen Infra Pvt Ltd. The PP works with local partners to identify and supply stoves, conduct awareness programs and collect data.

The distribution of ICS started and the first batch of commissioning was on 1st June, 2022/16/, which is also the start date of the crediting period for the project activity. Onwards, the daily basis number of ICS distributed is considered as a batch for calculation of emission reduction. All the data recorded during stove registration was captured through a mobile application, the collected information then transferred to the project database.

During the current monitoring period i.e., from 1 June 2022 to 30 June 2023, total 89,372 ICS/21/ were operational and resulted in 285,123 tCO₂e emission reductions.

2 VERIFICATION PROCESS

The registered VCS project is undergoing 1st verification under VCS (1st Crediting period), the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

4KES assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The verification process consists of the following three phases;

- A desk review of the VCS PD/5/ and VCS MR/1/
- Follow-up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control before being submitted to the VCS executive board for issuance of credits as per VCS standard version 4.4/3/.

Duration of Verification:

Verification Contract	28/06/2023
Site visit	18/07/2023 to 21/07/2023 (On-site interviews by Team Leader) 24/07/2023 (Additional Google Meet interviews by Team Leader)
Findings raised	11/08/2023
Draft Verification Report	04/09/2023
Final Verification Report	06/03/2024

2.2 Document Review

The verification is performed primarily as a document review of the approved VCS PD and associated documents as stated in detail in Appendix 2 of this document. The assessment is performed by a verification team following the VCS requirements/3//4/. The cross checks between information provided in the Monitoring report, VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations has been carried out.

2.3 Interviews

VVB has checked the project Implementation, monitoring, sustainable development, on-going mechanism etc. during the physical site visit from the random check of the households (by verifying the ICS details at site with the PP's sampling records, sample Invoices/16/ and signed end user agreements etc.)/16/ selected from the monitoring survey/20/ conducted by the project developer during monitoring period. The number of samples i.e. 22 were selected as per table 2 of the standard "Sampling and surveys for CDM project activities and programmes of activities" 09.0/12/ on random basis and interviews were conducted which is also as per para 54 of Guidelines for sampling and surveys for CDM project activities and programmes of activities 04.0/13/. VVB has checked the samples results and found in compliance with the monitoring survey conducted by PP and hence accepted. Refer section 2.4 of this report for more details. Kindly find below names of the persons interviewed.

Dates	18/07/2023 to 21/12/2021 (On-site interviews by Team Leader) 24/07/2023 (Additional Google Meet interviews by Team Leader)		
Key points discussed	Name of person, interviewed	Designation, Organization	Interview conducted by
Project Implementation, Operational data, Data collection, QA/QC, procedures, Calculation of ERs, VCS requirements, on-going mechanism	Ezaz Hussain	Project Manager, Greenway	Rohit Badaya (Physical On-site visit)
	Trinath Guru	Grameen Sahayak, Greenway	
	Krishnachandra Mohapatra	Grameen Sahayak, Greenway	
	Abhilash Pati	Project Support Executive, Greenway	
	Javardhan	Cluster Incharge, Greenway	
	Bijayalon Misal	Cluster Incharge, Greenway	

Sustainable development Impact, Complaints, Mode of communication, Environmental impact, any other concerns			
	Barsarai Samanharof	Grameen Sahayak, Greenway	
	Niranjan Barad	Grameen Sahayak, Greenway	
	Samantha Pradhan	Cluster Incharge, Greenway	
	Rakesh Kumar Bhayar	Cluster Incharge, Greenway	
	Sonal Kohli	President, Operations, SDG13 Ventures Pte Ltd	
	Niharanjan Patra	LMD, Avichal	
	Asif Hussain	LMD, Avichal	
	Tuni Behera	Member, Mission Shakti	
	Hulash Mosli	Member, Mission Shakti	
	Basanti Dabi	Member, Mission Shakti	
	Sharana Guru	Member, Mission Shakti	
	Sakuntla Barel	Member, Mission Shakti	
	Bimala Patre	Member, Mission Shakti	
	Kuntala Sahoo	Member, Mission Shakti	
	Puspalata Behera	Member, Mission Shakti	
	Sulochana Patra	Member, Mission Shakti	
	Jyoshnarani Barad	Member, Mission Shakti	
	Site Jena	Member, Mission Shakti	
	Bhaskar Patra	Member, Mission Shakti	
	Sabasini Majhi	Member, Mission Shakti	
	Ramamani Behera	Member, Mission Shakti	
	Ankit Mathur	Director, SDG13 Ventures Pte Ltd	Rohit Badaya

	Saurabh Saraf	Director, Offsetfarm Pte Ltd	(Additional Google Meet interviews)
	Sapan Deep	Manager, Data operations, Greenway Grameen Infra Pvt. Ltd	
	Sudipta Banerjee	Vice President, Supply Chain, Greenway Grameen Infra Pvt. Ltd	
	Sonal Kohli	President, Operations, SDG13 Ventures Pte Ltd	

The following are the 22 households, which were part of Monitoring Surveys/Usage Surveys and interviewed by the VVB during the site visit.

S. No.	Name	Identification number of household sampled	Interview conducted by
1.	Kailash Chandra Guru	J22VF066266 (MS+US)	Rohit Badaya (Physical on-site visit)
2.	Rahul Malik	J22VL329278 (MS+US)	
3.	Bhaghabat Mohapatra	J22VF065080 (MS+US)	
4.	Hadu Guru	J22VL367888 (MS+US)	
5.	Rabindra Samantara	J22VI186978 (MS+US)	
6.	Anupama Parida	J22VL325392 (MS+US)	
7.	Tukuni Parida	J22VG085957 (MS+US)	
8.	Mamata Biswal	J22VG116694 (MS+US)	
9.	Bhikari Sahoo	J22VH167935 (MS+US)	
10.	Sanjulata Pradhan	J22VI206619 (MS+US)	
11.	Bhanjan Minz	J22VG104564 (MS+US)	
12.	Ramakanta Sahoo	J22VF066984 (MS+US)	
13.	Janki Rana	J22VK307934 (MS+US)	
14.	Bikram Dalei	J22VF064739 (MS+US)	
15.	Sarita Behera	J22VJ262873 (MS+US)	
16.	Sabita Hara	J22VL363187 (MS+US)	
17.	Anima Minz	J22VG103145 (MS+US)	

18	Subardani Guria	J22VL364378 (MS+US)	
19	Sujata Toppo	J22VL344624 (MS+US)	
20	Sima Sahoo	J22VF067392 (MS+US)	
21	Gyanranjan Mahapatra	J22VF081174 (MS+US)	
22	Naresh Rout	J23VA374429 (MS+US)	

The VVB has checked the complete KPT records/20/, which has been used to calculate the amount of quantity of woody biomass used by households in the project activity. Additionally the following households were interviewed to conform whether KPT took place in appropriate way.

S. No.	Name	Identification number of household sampled	Interview conducted by
1	Jyotsanarani Sahoo	J22VI213836 (KPT)	Rohit Badaya (Physical on-site visit)
2	Bilasa Dhibar	J22VK266750 (KPT)	
3	Supriti Pradhan	J22VH142106 (KPT)	
4	Tara Toppo	J22VG103902 (KPT)	
5	Sabita Behera	J22VJ250249 (KPT)	
6	Sanghamitra Martha	J22VH132031 (KPT)	
7	Harischandra Toppo	J22VG123420 (KPT)	
8	Sumitra Barwa	J22VK267905 (KPT)	
9	Jauni Topno	J22VI170767 (KPT)	

2.4 Site Visits

VVB has checked the ICS serial numbers (as mentioned under the ER sheet) of the ICS installed in the households from the signed end user agreements/16/. VVB has checked the project implementation, monitoring, sustainable development, on-going mechanism etc. during the physical site visit from the random check of the households selected from the Monitoring survey/20/ conducted by PP in 2023. VVB has checked the samples results and found in compliance with the Monitoring survey/20/ conducted by PP and hence accepted.

Verification team has verified the Monitoring parameters as per the acceptance sampling by verifying the ICS/household details at site with the PP's sampling records, signed end user agreements/16/ and their corresponding Invoices/16/ etc. 4KES verification team carried out the random sampling from the PP's records and check (using its professional judgment) the acceptability of the data for each record in the PP's sample records during the site visit. The VVB has determined acceptance sample size based on the "Table. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks" of standard "Sampling and surveys for CDM project activities and programmes of activities" version 09.0/12/.

Using acceptance sampling approach, VVB checked the survey records from PP's survey with the VVB interview records. For the determination of VVB's acceptance sample size, verification team has selected the following using its professional judgment:

1. Acceptable quality level (AQL) – 1%
2. Unacceptable Quality Level (UQL) – 20%
3. Producer risk -10%
4. Consumer risk -5%

From the above factors, the VVB determined the minimum sample size (n) as 22 and acceptance number (c) as 1. VVB randomly selected the households from the survey. VVB interviewed the household representative to check the acceptability of the data for each PP's records.

The result of the monitoring survey is given below:

VVB Sample size	No of PP's record beyond unacceptable level	Accepted
22	0	22

Verification team has checked the VVB samples results collected at site with the PP's sampling records, signed end user agreements/16/, Invoices/16/ etc. and found in compliance. Hence monitoring survey is accepted to the Verification team.

The VVB has checked the complete KPT records/20/, which has been used to calculate the amount of quantity of woody biomass used by households in the project activity. Additionally the 9 households were interviewed to conform whether KPT took place in appropriate way and found that KPT was correctly conducted.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review, On-site interview and Google meet interviews. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

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

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

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the 4KES during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the verification process, total 05 CARs and 05 CLs were raised and resolved satisfactorily. No FAR has been raised in the verification. The list of CARs/CLs/FARs raised and the response provided, the mean of validation, reasons for their closure and references to correction in the relevant documents are provided in Appendix III of this report.

2.5.1 Forward Action Requests

No FAR raised during the verification.

2.6 Eligibility for Validation Activities

4KES conducted the 1st verification activity for this project activity under the 1st crediting period. 4KES has a valid UNFCCC accreditation in the sectoral scope from UNFCCC. The accreditation scope can be checked from the below link: <http://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0069>.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is not registered under any other GHG programme and the same has been confirmed through checking other GHG Registries. PP has further provided declaration as per which this project is not part of any other project activity, has not been registered, or currently seeking registration under any other GHG programme, not rejected by any other GHG programme, which is found appropriate.

VVB confirms that there is no double counting associated with project activity being participation of other GHG programs/14/.

3.2 Methodology Deviations

This project did not apply any methodology deviations.

3.3 Project Description Deviations

No deviation is applied during the monitoring period.

3.4 Grouped Project

No new project instances have been added to this grouped project during this monitoring period. The first project instance was part of the initial grouped project and has already been validated at the time of validation of the grouped project. The validation report has been checked and found that validation for the first instance has already been conducted and hence found correct.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The proposed grouped project activity will help in reducing the GHG emissions. The old and traditional cook stoves having low thermal efficiency and emitting high amounts of greenhouse gases will be replaced with new and efficient cook stove technologies, viz., Improved Cook Stoves (ICS). Implementation of the proposed grouped project activity will also help in the reduction of consumption of firewood, reduction of greenhouse gases, conservation of forest and also improving the quality of health of the ICS users. This is complimented by better indoor air quality as well as drudgery reduction in everyday cooking for women involved.

The ICS deployed under project activity are manufactured and supplied by Greenway Grameen Infra Pvt Ltd. The PP works with local partners to identify and supply stoves, conduct awareness programs and collect data. One ICS is distributed per household in the project activity and distributed to only those households which conform with the baseline. The project implementation involves distribution and continuous monitoring of the improved cookstoves (Greenway Jumbo Cookstoves) in various districts of Odisha. Local people from the communities in and around the project areas, have been engaged as ground operations team members for the implementation of the project. The distribution of ICS started from 1st June 2022, which is also the start date of the crediting period for the project activity and the same confirmed through the submitted Invoices. The start date has already been validated at the time of validation and the same confirmed through the validation report. Onwards, the daily basis number of ICS distributed is considered as a batch for calculation of emission reduction. All the data recorded during stove registration was captured through a mobile application, the collected information then transferred to the project database.

From 1st June, 2022 to 30th June, 2023 a total of 89,372 Greenway Jumbo cookstoves have been distributed to the beneficiary households by the ground operations team members. The distribution team has used software to record data and unique ID along with user details and end user agreement uploaded for storage, which can be accessed and verified as and when needed. The staff were trained to execute the distribution plan including data collection and training the end users for proper usage of the ICS. The end users were also provided with contact details of the support team person to connect with in cases of any complaints or feedback.

Verification team has checked the technical specification of the project ICS from summary description and production process for project cookstoves. PP has an established production process to produce the consistent quality of cookstoves as checked during the interviews and also from the supportive document. Verification team has checked the capacities and lifetime of the project cookstoves from the supportive documents i.e. technical specification from manufacturers.

The distribution system of the PP is mapped out in a number of steps which starts with outreach conducted to the identified beneficiaries/ end users of the ICS, followed by placement of stove orders upon receiving them and recording them in the database. Baseline conformity checks are conducted as required on the households and project locations, which is followed by deployment of ICS from the factory to the households. A database/21/ is maintained to ensure streamlining; quality and integrity of the data that is being collected on the beneficiary households and deployed stoves. The steps involved in the distribution process of the project implementation are elaborated in Appendix II of the MR, which is found appropriate.

The survey to collect information on the number of project ICS operational, any additional cook stove or baseline cook stove usage along with project ICS was conducted from 1 July 2023 to 10 July 2023/20/. During survey, all the project ICS were found to be operational, which was also confirmed through the acceptance sampling. A slight usage of baseline stove was seen during current monitoring period, which was not significant.

No incidents were observed during the current monitoring period which would negatively impact the emissions reduction calculation. All the ICSs were operational, and no breakdown of the stoves was observed. The project activity has been implemented and operated as per the registered VCS-PD.

During the current monitoring period i.e., from 1 June 2022 to 30 June 2023, total 89,372 ICS were operational and resulted in 285,123 tCO₂e emission reductions.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. The project design as mentioned in the registered VCS PD & monitoring report submitted is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered VCS PD & monitoring report are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned In the registered VCS PD & monitoring report is followed onsite as verified during the interview. The assessment team found that the project is in line with the registered VCS PD, monitoring report, and no deviation on project design or monitoring plan is observed.

Based on the physical inspection and the reviewed project documentation like the technical specification, beneficiary agreements, monitoring database etc. the verification team confirms that the project was implemented and operated as described in the VCS PD. Further, the verification team confirms that-

- There is no material discrepancy between project implementation and the project description in the VCS-PD.
- The monitoring plan is completely implemented and is suitable with actual monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters)
- The project has not participated or been rejected under any other GHG programs and further has not received or sought any other form of environmental credit since validation.

Ownership:

SDG13 Ventures Pte Ltd has declared that the project is registered with VCS registry, as declared in VCS-PD. Thus, emission reductions generated by project will be solely claimed by PP and PP has the right of use and verified by reviewing the beneficiary agreements/16/ signed with the households, which is acceptable. During the on-site visit and through the interviews, the VVB further confirmed as follows:

- Households are made aware of the project through awareness programs
- Selected households are given project devices which conform with the baseline scenario
- These households are made aware of the reasons why they are getting the subsidised stoves i.e. through carbon financing mechanisms
- The same household sign an agreement with the PP on transfer of carbon benefits to the PP

Moreover, the copies of the end user agreement were checked at the households and they expressed knowledge of the carbon program under which they got the project stoves

In addition, to avoid double claims on environmental benefits it was verified that any project device has a unique ID. This ID is not shared with any other device or household. The same ID is then mapped to the individual end user agreements. The above process was verified during the on-site visit and interviews with the project households and project team members.

Sustainable Development Contributions:

As confirmed during the onsite audit, the project contribution towards sustainable development is established in line with the sustainable development indicators framed by the UN SDG and has the benefits such as reduction in indoor air pollution, reduction in time spent and distance travelled for fuel wood collection, conservation of forest by reducing rate of forest degradation /deforestation and thereby reducing GHG emissions from the environment. There are other economic benefits such as opportunities for local communities involved in monitoring, training of users, undertaking periodic maintenance and post life time replacement.

Row Number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Means of Verification
1)	1.4	1.4.1 Proportion of population living in households with access to basic services	Implemented activity to increase access of households to clean cooking as a basic service through increased investment	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. The same was also confirmed through the review of end-user beneficiary agreements and invoices/16/.

Row Number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Means of Verification
				Hence the project promotes the increased investment in clean cooking technology and PP will enable greater access to basic clean cooking service to the households, where the ICS has been distributed.
2)	3.4	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	Implemented activity to decrease the mortality rates associated with chronic respiratory disease	The project Involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. The project activity will reduce the risk of mortality attributed to chronic respiratory disease of beneficiaries, through decreasing the household air pollution owing to the use of the distributed ICS for cooking, which was confirmed through the interview during the site visit.
3)	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	Implemented activity to decrease household air pollution through use of ICS among the beneficiary households	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. The project activity has resulted in reduction of household air pollution in the households, and thereby mortality rate attributed to household air pollution has also decreased, which was confirmed through the interview during the site visit.
4)	5.4	5.4.1 Proportion of time spent on unpaid domestics and care work, by sex, age and location	Implemented activity to decrease time spent on cooking by women members of the households under the project	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. During the current monitoring period, women members of the beneficiary households have experienced a reduction in time spent on cooking and fuelwood collection due to lesser amount of fuelwood requirement for cooking on ICS. Due to reduction in time, they have been able to engage in other employment opportunities, which was confirmed during the site visit.
5)	7.1	7.1.2 Proportion of population with	Implemented activity to increase the proportion of	The project involves dissemination of ICS to the households in Orissa and

Row Number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Means of Verification
		primary reliance on clean fuels and technology	population with primary reliance on clean technology	the same has been confirmed through acceptance sampling during the site visit. Hence the project has resulted in an increase in population with reliance on clean technology.
6)	8.3	8.3.1 Proportion of informal unemployment in total employment, by sector and sex	Implemented activity to increase the proportion of informal employment	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. The project involves the employment generation and the same was confirmed through the employment records and through the interviews during the site visit.
7)	10.1	10.1.1 Growth rates in household expenditure or income per capita among the bottom 40 percent of the population	Implemented activity to increase income per capita amongst the beneficiary households through financial and time savings	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. As the project promote access to and use of project ICS among the households, hence this has increased the financial savings through reduction in fuelwood purchase and time savings through reduction in time spent for fuelwood collection, which was confirmed during the site visit.
8)	10.2	10.2.1 Proportion of people living below 50 percent of median income, by sex, age and persons with disabilities	Implemented activity to increase employment	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit. During the current monitoring period, the female partners have been employed in the project implementation and the same was confirmed through the employment records and through interviews during the site visit.
9)	13.2	13.2.2 Total greenhouse gas emissions avoided or removed per year	Implemented activity to result in decrease of greenhouse gas emissions	The project involves dissemination of ICS to the households in Orissa and the same has been confirmed through acceptance sampling during the site visit.

Row Number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Means of Verification
				The project involves reduction in the greenhouse gas emissions, which has been demonstrated in the MR, ERs Excelsheet/2/ and hence found correct.

Management and operational system:

Verification team was able to verify that authorities and responsibilities for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring period from 01-June-2022 to 30-June-2023 (Inclusive of both days).

The verification team has interviewed the personnels responsible for the monitoring of parameters that are used to determine the emission reductions of the VER project. It is confirmed based on the interviews that the team is competent enough to monitor the parameters as described in the monitoring plan.

As discussed above, the verification team concludes that management and operational system of the project is implemented and operating well. Thus, it ensures the quality of data which is required in calculating the emission reductions.

Implementation status of the monitoring plan:

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

Therefore, from the document review and onsite inspection, it is confirmed that all the parameters were monitored in accordance with the registered monitoring plan during the monitoring period.

Opinion:

Assessment team concludes the following:

- a) There are no material discrepancies between project implementation and the project description provided in the registered PD/5/.
- b) The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
- c) There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology.
- d) The GHG emission reductions or removals generated by the project are not included in an emissions trading program or any other mechanism that includes GHG allowance trading.
- e) The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation or previous verification. The project is not registered (or seeking registration) under any other GHG program or rejected by any other GHG program, verification team reviewed the websites of other GHG schemes to verify the same.
- f) The project is registered under VCS only.

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the project description.

4.2 Safeguards

4.2.1 No Net Harm

The project activity is utilization of Improved Cook stove for cooking in rural households and does not involve any negative impact compared to the baseline stoves. Assessment team confirms the same based on its local and sectoral expertise.

4.2.2 Local Stakeholder Consultation

The Local Stakeholder Consultation process was validated during the registration of project activity in VCS. VCS validation report verified to confirm the same. The PP had invited identified stakeholders well in advance with details of venue and time of meeting.

During the current monitoring period no complaints raised by stakeholders, also no issues were identified in previous stakeholder meeting, which requires change in process or mitigation measures. The PP has an established continuous feedback mechanism for the project as confirmed during the site visit.

VVB interviewed the HHs during the onsite assessment that, whether any complaints have been raised by them, the HHs confirmed that no complaint was registered. Moreover, the PP has the ongoing mechanism as verified from MR, interview and the survey forms which were one of the ways to collect the feedback as part of project surveys.

4.3 AFOLU-Specific Safeguards

Not Applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team has reviewed the emission reduction (ER) spread sheet and checked all the formulae and verified them to be correct and in line with the monitoring plan of the VCS PD and the applied monitoring methodology.

The monitoring system and all applied procedures are in accordance with the monitoring plan contained in the registered VCS-PD and the applied methodology (VMR0006, version 1.1) “*Methodology for Installation of High Efficiency Firewood Cook stoves*”/7/, based on the information included in the final monitoring report, there are several procedures for data collecting depending on the methodology applicable for each step of the project. Organizational structure has been provided in the MR along with the roles and responsibilities.

The verification team has checked the ex-ante parameters and data stated in MR and compared with relevant section of the validated VCS PD that whether all parameters fixed ex-ante for the crediting period

have been applied correctly. The GHG emission reductions were correctly calculated on the basis of the applied methodology VMR0006 version 1.1/7/, VCS-PD/5/ and the formulae given in the monitoring report.

Parameters not monitored/ex-ante:

Following ex-ante parameters are reported under section 4.1 of Monitoring report/1/.

		VVB Assessment
Data / Parameter	NCV _{woodfuel}	The ex-ante parameter is as per the applied methodology VMR0006, v1.1/7/. Verification team has checked the NCV_{woodfuel} value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Data unit	TJ/tonne	
Description	Net calorific value of the non-renewable woody biomass that is substituted or reduced	
Source of data	Default value as per applied approved methodology VMR0006, v1.1	
Value applied:	0.0156	
Justification of choice of data or description of measurement methods and procedures applied	The default value as per applied approved methodology (VMR0006, v1.1)/7/ has been applied, hence found appropriate.	
Purpose of Data	Calculation of baseline emissions	
Comments	The value is fixed ex-ante	

		VVB Assessment
Data / Parameter	EF _{wf,CO2}	The ex-ante parameter is as per the applied methodology VMR0006, v1.1/7/.
Data unit	tCO ₂ /TJ	

Description	CO ₂ emission factor for the use of wood fuel in baseline scenario	Verification team has checked the EF _{wf,non-CO2} value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Source of data	Default value as per applied approved methodology VMR0006, v1.1	
Value applied:	112	
Justification of choice of data or description of measurement methods and procedures applied	The default value as per applied approved methodology (VMR0006, v1.1)/7/ has been applied, hence found appropriate.	
Purpose of Data	Calculation of baseline emissions	
Comments	-	

		VVB Assessment
Data Parameter /	EF _{wf,non CO2}	The ex-ante parameter is as per the applied methodology VMR0006, v1.1/7/. Verification team has checked the EF _{wf,non-CO2} value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Data unit	tCO ₂ /TJ	
Description	The non-CO ₂ emission factor for the use of wood fuel in baseline scenario	
Source of data	Default value as per applied approved methodology VMR0006, v1.1/7/	
Value applied:	26.23	
Justification of choice of data or description of measurement methods and procedures applied	The default value as per applied approved methodology (VMR0006, v1.1) has been applied, hence found appropriate.	

Purpose of Data	Calculation of baseline emissions	
Comments	-	

		VVB Assessment
Data / Parameter	η_{old}	The ex-ante parameter is as per the applied methodology VMR0006, v1.1/7/. Verification team has checked the η_{old} value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Data unit	Fraction	
Description	Efficiency of baseline cookstove	
Source of data	Default value as per applied approved methodology VMR0006, v1.1/7/	
Value applied:	10%	
Justification of choice of data or description of measurement methods and procedures applied	As per the applied approved methodology (VMR0006, v1.1)/7/, a default value of 0.1 shall be used if baseline device 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. The default value as per applied approved methodology (VMR0006, v1.1)/7/ has been applied, hence found appropriate.	
Purpose of Data	Calculation of baseline emissions	
Comments	-	

		VVB Assessment
Data / Parameter	η_P	The ex-ante parameter has been determined through the technical specifications of the improved cookstove, which is in line with the applied methodology VMR0006, v1.1/7/.
Data unit	Fraction	
Description	Efficiency of project stove at the start of project activity	
Source of data	Manufacturer specification	
Value applied:	0.38	

Justification of choice of data or description of measurement methods and procedures applied	The efficiency of the stove is based on the manufacturer's specifications and hence appropriate.	Verification team has checked the η_p value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Purpose of Data	Calculation of baseline emissions	
Comments	-	

		VVB Assessment
Data / Parameter	$f_{NRB,y}$	Verification team has checked the $f_{NRB,y}$ value from the registered VCS PD and found consistent. Hence accepted by the verification team.
Data unit	Fraction	
Description	Fraction of woody biomass saved by the project activity in year y, that can be established as non-renewable biomass	
Source of data	Calculated as per TOOL30 "Calculation of the fraction of non-renewable biomass", Version-03.0	
Value applied:	0.714	
Justification of choice of data or description of measurement methods and procedures applied	The value established using the latest information available in public domain is implemented and is fixed ex-ante. The f_{NRB} value is established using as per the methodological tool 30 "calculation of fraction of non-renewable biomass" V 03.0	
Purpose of Data	Calculation of baseline emissions	
Comments	-	

Opinion:

In the opinion of assessment team, all the ex-ante parameters that were applied in the calculations are consistent with registered PD and correctly applied in MR, emission reductions spreadsheet and justified.

Parameter monitored:

Verification team confirms through interviews and from the document review, the actual monitoring system complies with the monitoring plan mentioned in the registered validated VCS-PD. Verification team has checked the monitored data through the sampling conducted (mentioned under section 2.3 of this report), review of ER sheet, supportive documents and VVB site visit etc. and found the monitoring parameters to be correct. There were no discrepancies found in the PP records during the interviews carried out during the site visit and hence accepted. According to the monitoring plan in the registered VCS-PD, there are 06 monitoring parameters required to be monitored. Acceptance sampling has been conducted to verify the monitoring parameters. Refer section 2.4 of this report for more details.

Monitoring parameter 1: By=1,new,l,j,survey

		VVB Assessment
Data / Parameter	By=1,new,l,j,survey	The monitoring parameter, unit and descriptions are as per the registered VCS-PD/5/.
Data unit	Tonnes	
Description	Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey	
Source of data	Monitoring survey/20/	The monitoring parameter has been determined with the help of KPT conducted in the first year of project implementation, which is in accordance with the PD. The number of distributed ICS are maintained in a database which is checked by the verification team and found OK. PP has chosen random samples from the database inline with the Standard for sampling and surveys
Description of measurement methods and procedures applied	Kitchen Performance Test (KPT)/20/ was conducted in line with the Standard for sampling and surveys for CDM project activities and programme of activities, version 9.0.	
Frequency of monitoring/recording	Determined in the first year of project implementation	
Value applied:	1.406	

Monitoring equipment	Monitoring survey/20/	for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 Option (b). The consumption of biomass has been assessed exclusive of any other stove in the household. The key reasons for these are: - The project proponent is solely distributing one project device per household. - The stoves are only distributed to those households which conform with the baseline. The same was observed during the on-site visit, site interviews with the project team and observations. None of the households had two project devices where in such discrepancy in assessment of biomass consumption could arise. Based on the sampling and household KPTS, the value is calculated by taking the average of the dry firewood consumed per household per day and then converting this to tonnes per household per year. As per the Methodology VMR0006 v1.1., the PP has opted for measuring $B_{y, savings}$ through equation 4 ($B_{y=1, survey}$ method). The PP is guided by VMR0006 version 1.1, section 9.2 for computation of $B_{y=1, new, l, j, survey}$ with the guidance <i>“Determined in the first year of the introduction of the devices through measurement campaigns at representative households and/or sample survey”</i>. While the applied methodology requires a measurement campaign/survey and does specifically mention KPT, the PP has still done the measurement as per the KPT protocol. The KPT for the project was done on 25 households from 22 Dec 2022 to 09 Jan 2023 as per the KPT protocol
QA/QC procedures applied	Not applicable	
Purpose of data	Calculation of baseline emissions	
Calculation method	The value is calculated by taking the average of the dry firewood consumed per household per day and then converting this to tonnes per household per year.	
Comments		

		Version 4.0 by Clean Cooking Alliance. The measurement lasted 4 days at each individual household. The VVB has verified the KPT report and has also confirmed with the beneficiaries during the site audit on the amount of wood saved and the time saved during cooking using the project cookstove. The KPT details are provided in the monitoring report. As the KPT was conducted from 22 Dec 2022 to 09 Jan 2023, hence the week-days and weekends got covered during this period and hence weekly variations have been taken into account during this period. Since the start of monitoring period was from 1 June 2022 (monitoring period: from 1 June 2022 – 30 June 2023), PP decided to wait for initial some months and then-after conducted the KPT through the mid-way of the monitoring period of the project coinciding with the winter season when more conservative values can be achieved through rest of the monitoring period. During the winters, the lowest temperature in Odisha goes to about 7 deg C and the use of wood is the highest during the seasons. Therefore, the PP has been conservative in its approach. Verification team has interviewed the individual households and checked the KPT records and found that the value of the parameter as appropriate. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD.
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Monitoring parameter 2: $N_{y,l,j}$

		VVB Assessment
Data / Parameter	$N_{y,l,j}$	

Data unit	Number	The monitoring parameter, unit and descriptions are as per the registered VCS-PD.
Description	Number of project devices of type I and batch j operating during year y	
Source of data	Monitoring	Each participating household who acquires an ICS signs a carbon waiver agreement with the project implementer which is in accordance with the PD. The number of participating households are maintained in a database which is checked by the verification team and found OK. Verification team has checked the carbon waiver agreements on sample basis during the sampling conducted and found consistent with the database. Verification team concluded that the monitoring parameter is monitored in line with the monitoring requirements. The parameter is monitored through the “Stove distribution database and survey records”. The database has been checked and found that the same is monitored by the by PP on at least biennial basis. Verification team has verified the monitoring parameter through Stove distribution database and survey records, onsite assessment and from the details given under the ER sheet and found consistent. The sampling approach and the results of the sampling by VVB are explained in the section 2.1 of this report. The VVB undertaken the acceptance sampling test and found that the survey
Description of measurement methods and procedures applied	Monitored based on a representative sample through a survey. Sampling standard has been used for determining the sample size to achieve 95/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and programme of activities/12/. The sample size calculated as per required confidence and precision level is 21, therefore a minimum sample size of 30 is required as per the standard. However, PP has considered 206 samples, which is conservative. The project achieves the required precision level with 100% devices in use.	
Frequency of monitoring/recording	At least once every two years	
Value applied:	89,372	
Monitoring equipment	Monitoring survey/20/	
QA/QC procedures applied	The project implementer shall maintain a distribution record to calculate this parameter. The survey conducted during the current monitoring period reveals 100% ICS were operational.	
Purpose of data	Calculation of baseline emissions	
Calculation method	Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value	
Comments	-	

		undertaken by the PP is adequately reported the usage rate. Monitoring for the parameters were conducted from 1 July 2023 to 10 July 2023 and this is the first monitoring period of the grouped project. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD/5/.
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Monitoring parameter 3: $\eta_{new,i,j}$

		VVB Assessment
Data / Parameter	$\eta_{new,i,j}$	The monitoring parameter, unit and descriptions are as per the registered VCS-PD.
Data unit	Fraction	
Description	Efficiency of the device of each type i and batch j implemented as part of the project activity	
Source of data	Manufacturer specification or Certification by a national standards body or an appropriate certifying agent recognized by that body	The parameter “Efficiency of the device implemented as part of the project activity” (η_{new}) is a monitoring parameter as per the registered VCS PD. As per the VCS PD, “ <i>Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored</i> ”.
Description of measurement methods and procedures applied	To adopt Option V given in the methodology:	
Frequency of monitoring/recording	Annual	

Value applied:	0.38 at start of operation Year 1= 0.3572 Year 2=0.3536 Year 3=0.3501 Year 4=0.3466 Year 5=0.3431 Year 6= 0.3397 Year 7= 0.3363 Year 8= 0.3329 Year 9= 0.3296 Year 10= 0.3263	<i>therefore this parameter does not need to be monitored".</i> The year-wise calculations for the efficiency has been checked and found to have been conducted following the VCS PD. The verification team determined the implementation and operation management system through the audit interview with the PP.
Monitoring equipment	Not applicable	During onsite audit interview, verification team checked the procedures implemented for inclusion of project instances, roles and responsibilities, quality check etc. The verification team confirms that the implementation and operation of the project management system, including the record-keeping system, complies with the registered PD. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD.
QA/QC procedures applied	Not applicable	
Purpose of data	Calculation of baseline emissions	
Calculation method	As per eq. 5 of VMR0006, v1.1/7/ $\eta_{new,i,j} = \eta_P \times (DF_n)^{y-1} \times 0.94$	
Comments	For the current monitoring period, efficiency of 35.72% has been used for ICS age 0-1 year and 35.36% for ICS age 1-2 years	

Monitoring parameter 4: Life Span

		VVB Assessment
Data / Parameter	Life Span	The monitoring parameter, unit and descriptions are as per the registered VCS-PD.
Data unit	Years	
Description	The operating lifetime of the project device. The lifespan should be reported	

	if the methodology equation 5 is adopted to determine the project stove efficiency	
Source of data	Manufacturer specification	The parameter “Life Span” is a monitoring parameter as per the registered VCS PD. The lifespan should be reported if the methodology equation 5 is adopted to determine the project stove efficiency. The lifespan has been determined through Manufacturer specification, which has been submitted to the verification team. As per the declaration provided by the manufacturer, “The lifetime of Greenway Jumbo stove is 7 years”. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD.
Description of measurement methods and procedures applied	The data source as per manufacturer specification	
Frequency of monitoring/recording	Once at the time of installation of batch of type of stove	
Value applied:	7	
Monitoring equipment	Not applicable	
QA/QC procedures applied	Not applicable	
Purpose of data	Calculation of baseline emissions	
Calculation method	Not applicable	
Comments		

Monitoring parameter 5: Date of commissioning of batch j

		VVB Assessment
Data / Parameter	Date of commissioning of batch j	The monitoring parameter, unit and descriptions are as per the registered VCS-PD.
Data unit	Date	
Description	To establish the date of commissioning, the PP may opt to group the devices in “batches” and the latest date of commissioning of a device within the batch shall be used as the date of commissioning for the entire batch	
Source of data	Project database/21/	

Description of measurement methods and procedures applied	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch	The parameter “date of commissioning” is a monitoring parameter as per the registered VCS PD. The date of commissioning is recorded at the time of commissioning/distribution of the last project device in the batch. The project database has been checked and the commissioning dates of the installed ICS in the households has been checked based on the site visit of sample households. Further the Beneficiary Agreements and Invoices of the households have been checked on the sample basis through acceptance sampling and hence commissioning dates have been confirmed. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD.
Frequency of monitoring/recording	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch	
Value applied:	The dates of commissioning have been checked from the submitted project database.	
Monitoring equipment	Not applicable	
QA/QC procedures applied	Not applicable	
Purpose of data	Calculation of emission reduction	
Calculation method	Not applicable	
Comments		

Monitoring parameter 6: μ_y

		VVB Assessment
Data / Parameter	μ_y	
Data unit	Fraction	

Description	Adjustment to account for any continued use of pre-project devices during the year y	The monitoring parameter, unit and descriptions are as per the registered VCS-PD.
Source of data	Monitoring survey/20/	The parameter is monitored through the “Stove distribution database and sample survey records”. The database has been checked and found that the same is monitored during the Monitoring survey on at least biennial basis. The same was also confirmed during the onsite audit.
Description of measurement methods and procedures applied	It was seen the there was a slight usage of baseline stove during current monitoring period observed, which was not significant.	
Frequency of monitoring/recording	At least once in 2 years	
Value applied:	0.9004	
Monitoring equipment	Monitoring survey	The value arrived for this parameter has been checked from the Sampling survey data and results, further cross checked the samples with the end user beneficiary agreement, excel Database, and household survey questionnaires and found to be correct.
QA/QC procedures applied	Monitoring based on a representative sample through a survey. Sampling standard is being used for determining the sample size to achieve 95/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and programme of activities. The project activity has achieved the required precision levels (at 95/10) when it comes to the value of $\mu_{y,i,j}$. This is because there has been a 100% use of project devices.	
Purpose of data	Calculation of emission reduction	The value arrived for the fractions of days have been checked from the End user beneficiary agreement, Excel Database, and Household Usage Survey and found correct.
Calculation method	Not applicable	
Comments		Verification team has checked the samples based on the acceptance sampling and found OK. Hence the verification team was able to conclude that this parameter is being monitored & recorded as per the monitoring plan.

		Verification team has checked the values of parameter in the ER sheet through sampling out of the samples selected by the project developer through sample check of the Monitoring forms and site visit interview check. The sampling approach and the results of the sampling by VVB are explained in the section 2.1 of this report. Hence the verification team was able to conclude that this was monitored correctly. The parameter is monitored through the “Stove distribution database and sample survey records”. The database has been checked and found that the same is monitored by the project owner on at least biennial basis. The same was also confirmed during the onsite audit. The VCU estimations using equation 4 ($B_{y=1, \text{survey method}}$) does not need one to discount the μ factor since it is already covered in the determination of $B_{y=1, \text{survey}}$ and hence separately not required to take into account the same. This is inline with the page-19 of the applied methodology, which suggests that “For Projects that opt for $B_{y=1, \text{new, l, j, survey}}$, i.e., direct measurement of biomass used in project stoves, then μ_y is not required to be computed”.
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		The information on μ factor has been retained in the MR/ERs sheet as it was monitored during the surveys. However the same is not applied in the ERs calculations inline with the applied methodology and VCS-PD, which is found reasonable. Verification team confirm that the monitoring of this parameter is done as per the VCS-PD.
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Opinion: The verification team confirms;

- The monitoring plan has been implemented as per the registered PD;
- The monitoring complies with the requirement of the applied methodology.
- The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the PD;
- The values included in the monitoring report and corresponding emission reduction sheets are verified and included under each monitoring parameter, wherever appropriate;

Assessment of Data and Calculation of GHG emission reductions:

The emission reduction (ER_y) by the project activity is the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (L_y). The calculations and formulae as addressed in the approved baseline and monitoring methodology VMRO006 Version 1.1/7/ have been applied by the PP.

Baseline emissions:

The project activity has disseminated improved cookstoves to individual households as an energy efficiency measure in the project, therefore equations 1 and 2 of the methodology VMRO06 “Methodology for Installation of High Efficiency Firewood Cookstoves”, V 1.1/7/, is applied to calculate the net GHG emission reductions.

$$ER_y = \sum_i \sum_j ER_{y,i,j} \dots \dots \dots \text{Equation (1)}$$

Where,

i= indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire

j= indices for the situation where there is more than one batch of improved cookstove of type i

ER_y= Emission reductions during year y in tCO₂e

ER_{y,i,j}= Emission reductions by improved cookstove of type i and batch j during year y in tCO₂e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \quad \text{.....Equation (2)}$$

where,

B_{y,savings,i,j} = Quantity of woody biomass that is saved in tonnes per improved cook stove If type i and batch j during year y

NCV_{wood fuel} = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)

f_{NRB} = Fraction of woody biomass that can be established as non-renewable biomass (0.714)

EF_{wf,CO₂} = CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)

EF_{wf,non CO₂} = Non-CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO₂/TJ)

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

0.95 = Discount factor to account for leakage

The quantity of woody biomass saved, B_{y,savings,i,j}, due to implementation of improved cookstoves is estimated by the following equations-

$$B_{y,savings,i,j} = B_{I=1, new,i,survey} \times ((\eta_{new,i} / \eta_{old}) - 1) \quad \text{.....Equation (4)}$$

where,

η_{old}= efficiency of baseline cookstove (fraction)

η_{new,i,j}= efficiency determined using equation 5 of applied approved methodology (%)

B_{y=1, new,i,survey}= annual quantity of woody biomass used by improved cookstove in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey (tonnes/year/stove)

The efficiency of the project stoves can be estimated using the equation below.

$$\eta_{new,i,j} = \eta_P \times (DF_n)^{y-1} \times 0.94 \quad \text{.....Equation (5)}$$

Where,

η_P= efficiency of project stove (fraction) at the start of the project activity

(DF_n)^{y-1} = discount factor to account for efficiency loss of project cookstove per year of operation (fraction).

0.94= adjustment factor to account for uncertainty related to project cookstove efficiency test

The project activity involves distribution of only one type of ICS i.e. Greenway Jumbo Cookstove and all ICS under project consideration for emission reduction calculation have been distributed from 1st June 2022 to 30th June 2023.

List of parameters used for emission reduction calculation, along with their values

Parameter	Unit	Value	Source
$N_{y,i,j}$	Number	89,372	Distribution record maintained by PP from 1 st June 2022 to 30 th June 2023
$NCV_{\text{wood fuel}}$	TJ/tonne	0.0156	IPCC default value for wood fuel
f_{NRB}	fraction	0.714	As per registered PD
$EF_{\text{wf,non CO}_2}$	tCO ₂ e/TJ	26.23	IPCC default value for wood fuel
$EF_{\text{wf,CO}_2}$	tCO ₂ e/TJ	112	IPCC default value for wood fuel
η_{old}	fraction	0.1	Default value as per VMR006
η_{p}	fraction	0.38	As per WBT test report
$B_{y=1, \text{new}, i, \text{survey}}$	tonne/household/year	1.406	As per KPT conducted from 22 December 2022 to 9th January 2023
$B_{y, \text{savings}, i, j, y=1}$	tonne/household/year	3.6162	calculated
$B_{y, \text{savings}, i, j, y=2}$	tonne/household/year	3.5660	calculated

The emission reduction is calculated as below for ICS installed from 1st June 2022, which is considered the commissioning date of the first batch. The ICS installed from that date, on daily basis, is considered as a batch and emission reduction is calculated based on the number of days of operation.

Project Emissions:

The methodology does not account for baseline emissions and project emissions separately but instead quantifies net emissions reduction achieved by the project.

Leakage Emissions:

Leakage is already accounted for in the calculation of emissions reduction by adjusting with the default value of 0.95.

Emission Reductions:

Emissions reduction calculations are estimated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y = Emission reductions in year y (t CO₂e)

BE_y = Baseline emissions in year y (t CO₂e)

PE_y = Project emissions in year y (t CO₂e)

The following Table provides the emission reduction by 89,372 stoves for 395 days of operation (which is the total number of days of the monitoring period from 1st June, 2022 to 30th June, 2023).

Year	Baseline emissions reduction or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emissions reduction or removals (tCO ₂ e)
1 st June, 2022 to 31 st December 2022	73667	0	0	73667
1 st Jan 2023 to 30 th June 2023	211456	0	0	211456
Total	285123	0	0	285123

Opinion:

The verification team confirms that

- The complete data set for the identified and required parameters for the operational days in the current monitoring period was available;
- The reported data has been cross checked with available records, as indicated in the section 4.4 above under each monitored data, wherever appropriate;
- The baseline, project and leakage emissions have been determined in accordance with the requirement of the applied methodologies, as contained in the final monitoring report and corresponding emission reductions spreadsheet;
- The assumptions, emission factors and default values used are justified, as indicated in the section 4.4 above

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All relevant documents were checked to assess the correctness and quality of data submitted by the project participants, which are used to determine emission reductions.

All records needed for monitoring are archived in line with the requirements of the registered monitoring plan. No significant lack of evidence and missing data were detected during onsite audit discussion and inspection. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures.

The verification team can confirm that sufficient evidence is available for the whole monitoring period and the same is verifiable and that the data collection system meets the requirements of the monitoring plan and the applied methodology according to the assessment carried out on site and in the document review

Verification team confirms that the quality of evidence to determine the GHG reductions and removals produced was found satisfactory. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been provided in the VCS-MR/1/.

It was also verified through onsite audit inspection that the team involved in the monitoring of project activity is well experienced. Hence, the verification team concludes that competent staff is employed by the project proponent to carry out the relevant tasks with sufficient accuracy.

4.6 Non-Permanence Risk Analysis

As the project activity is a non-AFOLU project activity no risk related to non-permanence has been identified for the project activity.

5 VERIFICATION OPINION

4K Earth Science Pvt. Ltd. (4KES), contracted by 'SDG13 Ventures Pte Ltd', has performed the independent verification of the emission reductions for the VCS project activity (VCS ID- 2868) "Women led cleaner cooking initiative in Odisha" in India for the monitoring period 01/06/2022 - 30/06/2023 as reported in the Monitoring Report Version 1.4 dated 06/03/2024. SDG13 Ventures Pte Ltd is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity. It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

4KES commenced the verification on the basis of the baseline and monitoring methodology VMR0006 Version 1.1, the monitoring plan contained in the registered VCS PD and initial Monitoring Report (Version 1.2 dated 09/08/2023) as per the process described under Section 2 of this report.

4KES verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. 4KES planned and performed the verification by obtaining evidence and other information and explanations that 4KES considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

As a result of the verification, the verification team confirms that:

- All operations of the project are implemented and installed as planned and described in the project description.
- The monitoring system is in place and functional.
- The installed equipment essential for generating emission reductions runs reliably.
- The GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

In our opinion the GHG emissions reductions reported for the project activity for the period from 1 June 2022 to 30 June 2023 are fairly stated in the Monitoring Report Version 1.4 dated 06/03/2024. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology VMR0006 Version 1.1 and the VCS standard.

Verification period: From 1 June 2022 to 30 June 2023

Verified GHG emission reductions and removals in the above verification period, broken down by calendar year:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
1 st June, 2022 to 31 st December 2022	73667	0	0	73667
1 st Jan 2023 to 30 th June 2023	211456	0	0	211456
Total	285123	0	0	285123

The achieved emission reductions (ex-post) during the monitoring period has been compared with the emission reductions (ex-ante) for the same duration of the monitoring period.

Year	Ex-ante emissions reductions /removals	Achieved emissions reductions /removals	Percent difference	Justification for the difference
1 st June, 2022 to 30 th June, 2023	288176 tCO ₂ e	285123 tCO ₂ e	1.07% lower	The emission reductions during the current monitoring period (1 st June 2022 to 30 th June 2023) is 1.07% lower than the estimated ex-ante emission reduction (of 288176 tCO ₂ e) based on the parameters provided in the registered PD. The ex-ante emissions of 288176 in the VCS-PD were based on the distribution of 100,000 cookstoves per year. However, during the monitoring period (1 Jun 2022 – 30 Jun 2023), a total of 89,372 cookstoves were distributed.

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CL	Clarification Request
CO ₂ e	Carbon dioxide equivalent
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
HHs	Households
KPT	Kitchen Performance Test
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
MS	Monitoring Survey
PE	Project Emissions
PDD	Project Design Document
PS	Project Standard
PCP	Project Cycle Procedure
PP	Project Participant
QA/QC	Quality Assurance/Quality Control
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
US	Usage Survey
VCS	Voluntary Carbon Standard
VVB	Validation & Verification Body
VVS	Validation & Verification Standard
WBT	Water Boiling Test

APPENDIX 2: REFERENCES

/1/	Monitoring Report, Version 1.2, dated 09/08/2023 (Initial Version) Monitoring Report, Version 1.4, dated 06/03/2024 (Final Version)	Version 1.2 Version 1.4
/2/	Draft Emission Reduction Calculation sheet (corresponding to initial Version of VCS MR) Final Emission Reduction Calculation Sheet (corresponding to final Version of VCS MR)	-
/3/	VCS Standard Version v4.4 https://verra.org/project/vcs-program/rules-and-requirements/	Version 4.4
/4/	VCS Program Guide, v4.3 https://verra.org/project/vcs-program/rules-and-requirements/	Version 4.3
/5/	Registered VCS PD Version 3.1, dated 24/05/2023	Version 3.1
/6/	Web-Link for the Registered project activity https://registry.verra.org/app/projectDetail/VCS/2868	-
/7/	Approved monitoring methodology: VMR0006- Methodology for Installation of High Efficiency Firewood Cook stoves, Version: 1.1	Version 1.1
/8/	Websites referred: http://www.itouchmap.com/latlong.html (Latitude-Longitude location finder)	-
/9/	CDM-EB: Clean Development Mechanism Validation and Verification Standard for project activity	Version 03.0
/10/	VCS Verified Carbon Standard: Registration and Issuance Process Version 4.3	Version 4.3
/11/	VCS Verified Carbon Standard: Validation and Verification Manual, Version 3.2	Version 3.2
/12/	Standard “Sampling and surveys for CDM project activities and programmes of activities” 09.0	Version 09
/13/	Guidelines for sampling and surveys for CDM project activities and programmes of activities 04.0	Version 04
/14/	Declaration for double counting, dated 07/06/2022	-
/15/	Summary description and production process for project cookstoves	-
/16/	End user agreement (warranty card and Carbon rights transfer) and Sales invoice	-

/17/	Training of staff	-
/18/	Organization structure for the project activity	-
/19/	Photographs of project stove and baseline practice	-
/20/	Monitoring Survey records KPT Records	-
/21/	Stoves Maintenance database	
/22/	Agreement between SDG13 Ventures Pte Ltd and Hartree Environmental Development Limited	-

APPENDIX III: VERIFICATION FINDINGS

Table 1. Remaining FAR from validation and/or previous verifications

This is the 1st periodic verification of the project activity. There is no remaining FAR from Validation.

FAR ID	Xx	Section no.	Date: DD/MM/YYYY
Description of FAR			
Project participant response			Date: DD/MM/YYYY
Documentation provided by project participant			
DOE assessment			Date: DD/MM/YYYY

Table 2. CL from this verification

CL ID	01	Section no.	Validation Report (Appendix 3)	Date: 11/08/2023
Description of CL				

The following FAR was raised during the validation of project activity (please refer to the Appendix 3 of the validation report). <i>“During the next Verification period the DOE shall ensure to cross check all the participating users have signed beneficiary agreement and hence are adhering to the requirement of the baseline scenario stated in the methodology and opted in PD”.</i> PP shall provide the signed beneficiary agreement and other relevant evidences, so that FAR may be addressed during this verification.	
Project participant response	Date: 25/08/2023
The following evidences have been submitted: 1. Signed beneficiary agreements 2. Invoices of ICS	
Documentation provided by project participant	
1. Signed beneficiary agreements 2. Invoices of ICS	
DOE assessment	Date: 26/08/2023
The verification team has checked the signed beneficiary agreements through the acceptance sampling and through the inspection and interviews conducted at the time of site visit. Further the details of the baseline scenario is also expressed in the agreements as <i>“I confirm that I currently use a cooking stove(s) that are either of a “traditional mud stove” type, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e. without a grate or chimney. I am using firewood to fire my current cookstove”.</i> Hence the above FAR has now been addressed during the verification process. The comment is closed.	

CL ID	02	Section no.	Section 1.4	Date: 11/08/2023
Description of CL				
MR (Section 1.4): The “other entity” name is provided as <i>“Hartree Environmental Development Ltd”</i>, however the name of this entity is not available in the registered VCS-PD. Check and Clarify.				
Project participant response				Date: 25/08/2023

The other entity details have been updated in the MR. At the time of PD, the only other entity involved was the project consultant.	
Documentation provided by project participant	
Revised MR	
DOE assessment	Date: 26/08/2023
PP has now updated the 'other entity' in the Section 1.4 of the MR and relevant details have also been provided accordingly. Further the agreement between SDG13 Ventures and Hartree Environmental Development Limited has also been submitted to the assessment team.	
The comment is closed.	

CL ID	03	Section no.	-	Date: 11/08/2023
Description of CL				
PP is requested to submit the following documents, which is required during the course of project verification.				
- Kitchen Performance Test (KPT) records - Training records - An undertaking has been submitted that the PP shall not claim GHG emission reduction credits for the given crediting period under any other emissions-trading program or GHG binding limits (as per Section 1.10 of MR) - Undertaking that PP shall not claim for GHG emission reduction credits for the given period under any other emission-trading program (as per Section 1.10 of MR).				
Project participant response				Date: 25/08/2023
The following documents have been submitted - Kitchen Performance Test (KPT) records - Training records - An undertaking has been submitted that the PP shall not claim GHG emission reduction credits for the given crediting period under any other emissions-trading program or GHG binding limits (as per Section 1.10 of MR) - Undertaking that PP shall not claim for GHG emission reduction credits for the given period under any other emission-trading program (as per Section 1.10 of MR).				

Documentation provided by project participant	
1. Kitchen Performance Test (KPT) records 2. Training records 3. Undertaking that the PP shall not claim GHG emission reduction credits for the given crediting period under any other emissions-trading program or GHG binding limits (as per Section 1.10 of MR) 4. Undertaking that PP shall not claim for GHG emission reduction credits for the given period under any other emission-trading program (as per Section 1.10 of MR).	
DOE assessment	Date: 26/08/2023
The above requested documents (Kitchen Performance Test records, Training records and the undertakings) have been submitted. The comment is closed.	

CL ID	04	Section no.	Section 1.11	Date: 11/08/2023
Description of CL				
1. MR (Section 1.11, Table 3): Please refer to the SDG 5.4, where the statement “<i>About 2 hours daily would be saved in cooking and about 5 hours weekly in fuelwood collection</i>” is provided. Hence the relevant calculations for the same shall be submitted. 2. MR (Section 1.11, Table 3): Please refer to the SDG 8.3, where the statement “<i>A total of 50 local people have been employed</i>” is provided. The list of people employed in the project shall be submitted. Similarly the evidence for the 15 local female partners corresponding to the SDG 10.2 shall be provided.				
Project participant response				Date: 25/08/2023
The following documents have been submitted: 1. Excel sheet with calculation details of time saved in cooking and fuelwood collection 2. Employment record as on June 30, 2023 i.e. end of monitoring period 3. Details of local partners (female) including their names, location and designation as on June 30, 2023				
Documentation provided by project participant				

1. Excel sheet with calculation details of time saved in cooking and fuelwood collection 2. Employment record as on June 30, 2023 i.e. end of monitoring period 3. Details of local partners (female) including their names, location and designation as on June 30, 2023	
DOE assessment	Date: 26/08/2023
1. The relevant calculations sheet for the hours saved in cooking and due to less fuelwood collection has been submitted and found appropriate. 2. The summary of employment records and employment contracts (sample basis) have been submitted and found that the project leads to generation of employment as well employment is also provided for the females. The comment is closed.	

CL ID	05	Section no.	Section 3.3	Date: 11/08/2023
Description of CL				
1. MR (Section 3.3, Table 6): For the Eligibility criteria no.4, it is mentioned that “As the PP has sold ICS at more than 60% subsidy, hence the return from the project is negative and sale of VERs will help in funding gap”. The relevant evidences for the 60% subsidy shall be submitted. 2. MR (Section 3.3, Table 6): PP has discussed Eligibility criteria in Table 6 of the MR inline with the Eligibility criteria available in the VCS-PD. However the VCS-PD also discuss on the Eligibility criteria related to “methodology adoption” and “start date for inclusion” (please refer to Section 1.4 of VCS-PD), which may also be discussed in the MR. Please check.				
Project participant response				Date: 25/08/2023
1. Sample receipts of ICS sold to other customers during the monitoring period have been submitted as an evidence that the ICS was sold at MRP or with minimal discount to customers other than the ICS users. 2. The eligibility criteria related to “methodology adoption” and “start date for inclusion” have been added in the MR				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 26/08/2023

1. The sample receipts of the ICS which has been sold to other customers which are not part of the project activity has been submitted. The price of the ICS sold to other customers has been compared with the price of ICS sold in the project activity, hence it is found that ICS are distributed with subsidy of atleast 60% to the end-users of the project activity.
 2. eligibility criteria related to “methodology adoption” and “start date for inclusion” have been added in the MR, which is found correct.
- The comment is closed.

Table 3. CAR from this validation

CAR ID	01	Section no.	Section 1.1, Section 1.5	Date: 11/08/2023
Description of CAR				
MR (Section 1.1, Section 1.5): The start date of project is “01/06/2022” as per the registered PDD and also as per the Section 1.5 of the submitted MR. However as per the Section 1.1, “ <i>The distribution of ICS started from 18th May 2022, and the first batch of commissioning is 1st June, 2022, which is also the start date of the crediting period for the project activity</i> ”.				
PP is requested to check on the differences observed.				
Project participant response				Date: 25/08/2023
The first batch of commissioning is 1 June 2022 which is also the start date of the crediting period for the project activity. The error in the sheet has been duly corrected.				
Documentation provided by project participant				
Revised excel sheet showing the distribution details.				
DOE assessment				Date: 26/08/2023
The relevant corrections in the distribution details in the Excelsheet has been provided. Further the registered documents (VCS-PD, Validation report) has also been checked and found that start date of the project activity is 01/06/2022. Hene the relevant corrections in the Excelsheet is found appropriate.				
The comment is closed.				

CAR ID	02	Section no.	Section 4.2	Date: 11/08/2023
Description of CAR				

1. MR (Section 4.2): Please refer to the monitoring parameter table of parameter “By=1,new,I,j,survey”, where the “frequency of monitoring/recording” is provided as “*Determined two times in a year*”. As the monitoring period is from “01/06/2022 – 30/06/2023”, hence clarify when the monitoring surveys were conducted two times during the monitoring period.

Further the calculation method for this parameter (By=1,new,I,j,survey) shall be provided in the row “calculation method” of the monitoring parameter table of this parameter.

2. MR (Section 4.2): Please refer to the parameter table of the parameter “ $\eta_{new,i,j}$ ”, where the value of efficiency for the year 1 and 2 is provided as “0.357” and “0.354” respectively. However the values used in the actual calculations are “35.72%” and “35.3628%”. Check.

Further please check the statement “*For the current monitoring period, efficiency of 38% has been used as this covers the first 12 months of operation of ICS after commissioning*”, however the efficiency of 35.72% and 35.36% respectively has been used in the emission reduction calculations. Check.

Project participant response

Date: 25/08/2023

1. The monitoring parameter, By=1,new,I,j,survey, is determined in the first year of project implementation. The same has been corrected in the MR.

2. The values have been corrected in the MR (section 4.2) to 0.3572 and 0.3536 respectively

Efficiency of 35.72% and 35.36% have been used in the emission reduction calculations. The statement has been corrected in the MR.

Documentation provided by project participant

DOE assessment

Date: 26/08/2023

1. The error on the frequency of the monitoring surveys have been corrected, since the survey has only been conducted in the first year of implementation, which is also applicable to the monitoring period. The calculation method of the parameter (By=1,new,I,j,survey) has also been corrected in the MR.

The comment is closed.

2. The efficiency of the first year, which is applicable to the monitoring period is not correctly presented in the MR. Hence the efficiency values are now consistent in the monitoring report.

The comment is closed.

CAR ID	03	Section no.	Section 4.3	Date: 11/08/2023
Description of CAR				

1. MR (Section 4.3): The sample size for the monitoring survey has been calculated as “1” in the “Cell E18” of the “Sample_size_calculator” spreadsheet. The formula applied for the sample size calculations in ERs Excelsheet does not match with the formula as available on the Section 4.3 (page-31) of the MR. Further the sample size is 21 as per the Section 4.3 of MR. Check on the differences observed. 2. MR (Section 4.3): The date of monitoring/usage survey and KPT is not traceable in the Section 4.3 and hence additional information be included accordingly.	
Project participant response	Date: 25/08/2023
1. The typo has been corrected in the MR from 1 to 21. 2. The monitoring survey was carried out from 1 July 2023 to 10 Jul 2023, the KPT was carried out from 22 December 2022 to 9 January 2023. The additional information has been added in the MR.	
Documentation provided by project participant	
DOE assessment	Date: 26/08/2023
1. The correct formula for the sample size is now presented in the “Sample_size_calculator” spreadsheet, which is also consistent with the formula available in the MR. 2. The date of monitoring/usage survey and KPT has now been provided in the MR. The comment is closed.	

CAR ID	04	Section no.	Section 5.4	Date: 11/08/2023
Description of CAR				
PP has considered the ex-ante estimate of 288176 tCO₂e for the comparison purpose, however the emission reductions for the “year 2022-2023” and “year 2023-2024” are “553,157 tCO₂” and “1,010,460 tCO₂” respectively as per the Section 1.10 of approved VCS-PD. Check.				
Project participant response				Date: 25/08/2023
Ex-ante calculations of 553,157 and 1,010,460 in the PD for the years 2022-23 and 2023-24 respectively were basis the plan of distributing 100,000 ICS per year. However, a total of 89,372 ICS were distributed during the period 1 June 2022 – 30 June 2023.				
Documentation provided by project participant				

DOE assessment	Date: 26/08/2023
PP has now clarified on the calculations based on which the ex-ante estimates (based on the VCS-PD) has been calculated for the duration corresponding to the monitoring period. The comment is closed.	

CAR ID	05	Section no.	MR & ERs Excelsheet	Date: 11/08/2023
Description of CAR				
ERs Excelsheet: The consistent date format has not been used in the MR and ERs Excelsheet. For example, the date format “DD/MM/YYYY” has been used in the ‘Sample_size_calculator’ spreadsheet & MR, while the date format “MM/DD/YYYY” has been used in the “Survey_responses” spreadsheet and ‘ER_Calculation’ spreadsheet. Consistent date format be used throughout the ERs Excelsheet and MR.				
Project participant response				Date: 25/08/2023
1. The error has been corrected in the ER excel sheet. The date format has been changed to DD/MM/YYYY.				
Documentation provided by project participant				
DOE assessment				Date: 26/08/2023
The date format is now consistent between the MR and ERs Excelsheet, hence found correct. The comment is closed.				

Table 4.FAR from this validation

No FAR raised during this validation.

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of CAR				
NA				
Project participant response				Date: DD/MM/YYYY

Documentation provided by project participant	
DOE assessment	Date: DD/MM/YYYY