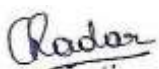


**Verification and certification report form for
GS CDM project activities**

(Version 04.0)

BASIC INFORMATION

Title and GS reference number of the project activity	Accion Fraterna Biogas CDM project for rural communities in Anantapur, Andhra Pradesh Ref No: GS980
Scale of the project activity	☐ Large-scale ☒ Small-scale
Version number of the verification and certification report	03
Completion date of the verification and certification report	18/02/2026
Monitoring period number and duration of this monitoring period	Monitoring period, no: 06 Duration: 01/01/2023 to 31/07/2025 (Inclusive of both days)
Version number of the monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	31/05/2021 to 30/05/2026
Project participants	ACCION FRATERNA ECOLOGY CENTRE
Host Party	India
Applied methodologies and standardized baselines	AMS.I. E – “Switch from Non-Renewable Biomass for Thermal Applications by the User” version 11.0
Mandatory sectoral scopes	Mandatory Sectoral Scope 01,
Conditional sectoral scopes, if applicable	Conditional Sectoral scope 13 & 15
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	76,949 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	13,607 tCO ₂ e
Name of the VVB	4K Earth Science Private Limited
Name, position and signature of the approver of the verification and certification report	 Chandrakala R Managing Director

SECTION A. Executive summary

4K Earth Science Private Limited (4KES) has been commissioned by “ACCION FRATERNA ECOLOGY CENTRE” to perform an independent verification of its registered GS project “Accion Fraterna Biogas CDM project for rural communities in Anantapur, Andhra Pradesh”, CDM Ref # 3779 & GS Ref #GS980 for the reported GHG emission reductions for the given monitoring period 01/01/2023 to 31/07/2025 both dates included). The GS CDM projects must undergo independent third-party verification and certification of emission reductions as the basis for issuance of Gold Standard Verified Emission Reductions (GS 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 registered PDD and that all physical features (technology, project equipment, and monitoring equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved monitoring methodology;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

Scope:

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on review of monitoring report, supporting information and

- (a) The registered GS PDD and Passport
- (b) The approved methodology mentioned in the GS PDD and passport.
- (c) GS4GGTransition Annex.
- (d) The registered monitoring plan.
- (e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board.
- (f) Applicable GS4GG guidance.
- (g) CDM Validation and Verification Standard (VVS).
- (h) All information and references relevant to the project activity's resulting in emission reductions.
- (i) Information related to monitoring of SD parameters.

The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

4KES has based on the recommendations in the latest version of CDM Validation and Verification Standard, employed a rule-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Description of project:

Accion Fraterna Ecology Centre (AF Ecology Centre) is a Non-Governmental Organization (NGO) working in Anantapur district of Andhra Pradesh, India. The purpose of this Biogas CDM Project activity is to set up 15,000 biogas plants (digesters) for single households in all Mandals of Anantapur District.

Biogas of 2 cum capacity is installed in each household and fed cattle dung into the anaerobic digester for the production of biogas for cooking purposes. By utilizing cattle dung in a controlled anaerobic digestion and combustion system, biogas is available as thermal energy, which is used for cooking and water heating for bath. Biogas is used on a two-ring gas stove supplied as part of the project activity. Households having cattle or willing to collect cattle dung have participated in the project activity. The project was implemented upon registration of the project as a CDM project activity, as the project is financed completely from carbon revenues. The project contributes to social, environmental, economic and technological benefits which contribute to sustainable development of the local environment and the country.

A desk review of the project documentation is undertaken, which is followed by an onsite visit and interviews by the members of verification team in accordance with the latest version of CDM AS. The verification protocol is filled by the verification team that is based on standard auditing practices and latest version of CDM VVS, to capture the assessment of applicable CDM & GS requirements viz., latest version of CDM Project Standard, applicable GS toolkit, registered CDM PDD & GS-PDD applied methodology/ies and/or tools and recent decisions. The verification protocol provides transparent means to record the observations and compliances

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by the verification team members and the nonconformities (CARs/CLs), if any. The verification protocol is an internal document, and is available on request. After successful closure of findings (CARs/CLs), the draft verification report is prepared which went through Independent technical review as per 4KES internal procedures and the TR comments were given for any gaps in audit findings. After closure of the TR comments, final verification report is prepared then followed by final approval for the decision made. The approved verification report is given to PP which shall be submitted for request for issuance.

Following are the major milestones for the verification under consideration.

Verification contract	02/07/2025
On site verification	05/09/2025 and 06/09/2025
Draft Verification Report	11/11/2025
Final Verification Report	18/02/2026

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Technical Expert TA (1.1 & 13.2) (GS Approved Auditor)	IR	Badaya	Rohit	Central Office	✓	✓	✓	✓
2.	Team Leader under observation (GS Approved Auditor)	IR	K	Guru Balaji	Central Office	✓	✓	✓	✓
3.	Verifier (GS Approved Auditor)	IR	B R	Ragul	Central Office	✓	-	-	✓

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical Reviewer (GS Approved Auditor)	IR	Swaroop Sharma	Chetan	Central
2	Approver	IR	R	Chandrakala	Central

SECTION C. Application of materiality**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Wrong data collection/misinterpretation of household situation	Low	It's not complicated monitoring process. Appropriate trainings are conducted for the monitoring personnel.	By means of site visit check of actual situation to sample number of households.
2	Transfer of data from sampling survey sheet to ER sheet	Low	Possible human error during transfer of data to ER sheet	Thorough cross-check required on the transfer of data from survey sheets to the ER sheet
3	Error in ER calculations	High	The sample size was large, hence increasing the chances of error in ER calculation	The ER calculations were checked for accuracy.

C.2. Consideration of materiality in conducting the verification

The prescribed thresholds for materiality, as per §326 of CDM VVS for PA,

Prescribed range of ERs/annum	>500,000	300,000-500,000	300,000	SSC PAs	MSC PAs
Prescribed Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The identified/selected materiality threshold for the project activity under current monitoring period is 5% as project activity is small scale project activity.

	MR Version (Draft)	MR Version (Final)
Emission reductions/annum	13,607 tCO ₂ e	13,607 tCO ₂ e
Identified Threshold	5.0%	5.0%

The impact of errors observed during verification for each monitoring parameter on the emission reduction calculation is provided below:

Parameter	Verification approach	Error identified	Corrected	Extrapolated error for population size (Qty and %)	Within Threshold
Biogas Units Constructed	Complete data check	No error identified.	NA	NA	Yes
Number of biogas plants operating	Complete data check	No error identified	NA	NA	Yes
Confirmation that non-renewable biomass has been substituted	Acceptance sampling	No error identified	NA	NA	Yes
Non-usage of biogas plants	Complete data check	No error identified	NA	NA	Yes

No error on the values of the monitoring parameters is found. The change in the emission reduction between draft and final MR is due to the correction in the ER calculation. Please refer the CARs & CLs raised in the Appendix 4.

SECTION D. Means of verification**D.1. Desk/document review**

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using verification protocols (checklists). The assessment team cross-checked the information provided in the MR and information from sources other than those used, if available, and also conducts independent background investigations. 4KES conducted a desk review, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'Appendix 3' of this report.

D.2. On-site inspection

Site visit was conducted by the VVB for this Verification of GS project on 05/09/2025 and 06/09/2025. Details of interviewees, topics covered and additional information presented in the below section "D.3 Interviews"

Duration of on-site inspection: 05/09/2025 and 06/09/2025				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting, Office Inspection, Verification of monitoring records, interviews and database inspection	AF Ecology Office	05/09/2025	Rohit Badaya Technical Expert TA (1.1 & 13.2) (GS Approved Auditor),
2	Visit to sampled of households	Beneficiary households,	05/09/2025	
3	Closing meeting	AF Ecology Office	06/09/2025	Guru Balaji K Team Leader under observation (GS Approved Auditor)

D.3. Interviews

No.	Interview				Date	Subject
	Last name	First name	Male or Female	Affiliation		
1.	Narapama	Surya	Male	Village Volunteer	05/09/2025 and 06/09/2025	- General aspects of the project - Changes since validation / previous verification - Remaining issues from validation/ previous verification - Quality management system - Involved personnel and responsibilities
2	Tetaert	Deepa	Female	AF Ecology Centre		
3	R	Palaiah	Male	AF Ecology Centre		
4	Estever	Waheed	Male	AF Ecology Centre		
5	G	Venkatesh	Male	Village Volunteer		

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6	L	Chandraidu	Male	Village Volunteer		- Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the Monitoring - Maintenance
7	M	Ramadevi	Male	Village Volunteer		
8	J	Venkatanara pana	Male	Village Volunteer		
9	B	Raju	Male	Case worker		
7	P	Nagern	Male	Case worker		

No	Name	Male or Female	Village	Unit ID code	Date	Subject
1	Lakshmi Devi P	Male	Buggapalli	3285	05-09-2025	- Verification of monitored data - Awareness about ownership of CERs - Working condition of digester unit - SD parameters verification
2	Saraswathi M	Female	Kathropalli	3332	05-09-2025	
3	Nagamanamma O M	Female	Obuladevar apalli	3512	05-09-2025	
4	Gangaratharan	Male	Buggapalli	3481	05-09-2025	
5	Gamgamma	Female	Edula Mushturu	3138	05-09-2025	
6	Jayalakshmi	Female	Edula Mushturu	537	05-09-2025	
7	Varalakshmi	Female	Tallimadug ula	3394	05-09-2025	
8	Peddanna	Male	Edula Mushturu	3143	05-09-2025	
9	Challa Channamma	Female	Edula Mushturu	2684	05-09-2025	
10	Kamari Maruti	Female	Anantasag aram	1233	05-09-2025	
11	Pothula Lakshmidevi	Female	Ghantapura m	2330	05-09-2025	
12	Polaruppu Salik	Male	Ghantapura m	2327	05-09-2025	
13	Akkim Lakshmidevi	Female	Ghantapura m	2429	06-09-2025	
14	Nagalakshmi	Female	Marthadu	2278	06-09-2025	
15	D.Yellamma	Female	H. Sodanapalli	1323	06-09-2025	
16	Ganga Siva Lakshmi	Female	Marthadu	1005	06-09-2025	
17	Premeela T	Female	Taticherla	1290	06-09-2025	

18	B Ramalakshmi	Female	Rachepalli	1264	06-09-2025	
19	Narasayamma	Female	Kanaganepalli	1481	06-09-2025	
20	B.Anjinamma	Female	potlamarri	1684	06-09-2025	
21	padhamavathi	Female	Yarraguntla	3168	06-09-2025	
22	Pullamma.V	Female	Obuladevarapalli	3513	06-09-2025	

During the site visit, the verification team interviewed the biogas users randomly. Apart from acceptance sample survey explained below section, the other questions asked by the verification team and the summary of reply received from the stakeholders are given below:

Questions asked by verification team	Summary of Response by Stakeholders/end users
Since when you are using the biogas system?	Verification team received varied responses from each household based on the implementation date
Is the biogas system in operating conduction?	All end users confirmed the biogas system in operating condition now.
How many cattle you have?	Verification team received varied responses from each household based on the actual data
Are you aware that the project claims emission reduction and the ownership of the ERs are with ACCION FRATERNA?	All the end users aware that the all the rights of emission reduction are with ACCION FRATERNA as the bio digester was constructed by ACCION FRATERNA at free of cost. They also confirmed about the agreement signed with ACCION FRATERNA for giving away the emission reduction rights to ACCION FRATERNA.
Is there any repairs done to your digester or stove?	Few households confirmed that some minor repairs are done during monitoring period.
If you have any issue with the device/project, you contact whom?	All households confirmed that they have the contact number of the respective Area supervisor of ACCION FRATERNA and for any requirement they can contact the Area Supervisor
Is indoor smoke reduced due to the use of biogas unit?	All the households confirmed reduction in the indoor smoke and thereby reduction in health issues ie, eye related issues, respiratory issues.
Is cooking time reduced due to use of biogas unit?	All the households confirmed reduction in cooking time.
Are you trained by the ACCION FRATERNA team?	All households confirmed they have been received training from ACCION FRATERNA
What are the other benefits of biogas unit?	The summary of the other benefits mentioned by households are: • Easy cooking • Reduction in fuelwood collection time & cooking time • Clean home • Clean vessel • Better lifestyle
Do you have any issue with the project?	No households mentioned any issues with the project.

D.4. Sampling approach

During the on-site verification a sampling approach has been used by the verification team to verify the reported values for the monitored parameters as listed in section D.2 of the MR which are determined through sample survey by PP.

For the determination of DOE's acceptance sample size, verification team assumed the following factors:

- Acceptable quality level (AQL) or the Level of Assurance- 1.0% (i.e. the proportion of discrepancies between the project participants' sample records and the DOE sample that are acceptable up to 1.0% limit)
- Unacceptable Quality Level (UQL) – 20% (i.e., the proportion of discrepancies between the project participants' sample records and DOE sample records that are unacceptable above 20% limit)
- Producer risk -5% (i.e., there is 5% chance that the DOE will wrongly reject the project participants' records of acceptable quality)
- Consumer risk -5% (i.e., there is 5% chance that the DOE will wrongly accept the project participants' records of records of unacceptable quality)

Verification team has determined acceptance sample size for all the sample survey parameters based on the table provided under para 32 of standard "Sampling and surveys for CDM project activities and programmes of activities" version 09. From the above assumed factors, the verification team determined the minimum sample size (n) as 22 and acceptance number (c) as 1. The same is intimated to PP prior to onsite audit. The actual number of sample size where the acceptance survey was done given below:

Parameter	Total Population	PP's sample size	Acceptance sample size	Acceptance number	Sampling method used
Confirmation that non-renewable biomass has been substituted	3551	50	22	1	Simple random sample

During site visit, verification team visited the selected sample households and interviewed the biogas plant user to check the data reported by PP. The result of the survey is given below:

Parameters	DOE Sample size	No of PP's record beyond unacceptable level	Accepted / Rejected
Confirmation that non-renewable biomass has been substituted.	22	0	Accepted

Accordingly for acceptance survey, the verification team verified a total of 22 Samples. The beneficiaries (22 Nos Sample HHs) are interviewed at random in response to the verification team's questions, and their responses are summarized in section D.3. From the acceptance sample survey, it is found that the sample survey results of the PP for all the sample HHs were in line with VVB's field survey results. Hence, the PP's sample survey is found to be acceptable.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	-	-
Compliance of the project implementation and operation with the registered PDD	2	-	-
Post-registration changes	-	-	-

Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	1	-
Compliance of monitoring activities with the registered monitoring plan	-	1	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	
Assessment of reported sustainable development co-benefits	-	1	-
Stakeholder Inputs & Legal Dispute	-	-	-
Others (please specify)	1	1	-
Total	03	04	

SECTION E. Verification findings

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

Means of verification	The project is registered under GS4GG, and PP used GS monitoring report template, version 1.1. All the sections of the form were filled as per the GS4GG guidelines and gave all the relevant details.
Findings	No findings
Conclusion	Monitoring report was found to be completed and using the valid version i.e. version 1.1 of the GS MR, hence the monitoring report is complying with the monitoring report form.

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

This is the 6th verification of the project activity. The verification team confirmed that 03 Forward Action Requests (FARs) from the previous monitoring period have been addressed in Appendix 04 of this report.:

- Verification report/3/ of 5th Monitoring period/3/
- GS issuance review report of 5th Monitoring period/3/
- GS4GG Transition review report/5/
- Annual report for the Year 2023,2024 and 2025/13/

From the verification of the above-mentioned documents, it is found there is no forward action request (FAR) raised from previous verification or GS4GG transition

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

Means of verification	The verification team determined the conformity of the actual project activity and its operation with the validated project design document. Verification team has, by means of a desk review and an on-site visit, assessed that all physical features of the proposed GS CDM project activity proposed in the registered PDD/12/ are in place, and that the project participants have operated the GS CDM project activity as per the registered PDD/12/. The verification team has checked the information in the monitoring report and compared against the registered PDD. During the onsite inspection, the verification team has checked the project locations, implementation, technology applied, project equipment, and monitoring system against the information in the registered PDD. Interviews with operational personnel and households and random samplings have been carried out. Avoidance of double counting or double claiming with other mitigation actions - The devices under this project will not be included in any other project, as each project device is assigned a unique identification number. Therefore, there is no risk of double counting of project devices with any other project. Additionally, this
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	project is not registered under any other mechanism and will not apply to any other mechanism in the future. The same is confirmed through a declaration from the Project Developer. The Verification Team conducted a thorough review of the project area across other registries (CDM, GCC, GS, and VERRA) and confirmed that there is no overlap in geographic boundaries with other projects, and no related concerns were identified.
Findings	CL 02 and CL 03 were raised and closed.
Conclusion	The verification team has reviewed the biogas units commissioning records, application forms, end user agreements/11/ and non-working & repair log records/09/. The verification team has observed at the site that all physical locations of the biogas units on sample basis and found that the details are correctly matching with the monitoring report and monitoring records maintained by PP. The type of the biogas provided and the locations are consistent with the revised PDD. Thus, the verification team has concluded that the project activity was implemented and operated as per registered PDD. The verification team, based on the site visit and document review, was able to conclude that the project activity has been commissioned and implemented as per the registered PDD and that all physical features of the project are in place.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

No temporary deviation from the registered monitoring plan is sought in this verification.

E.4.2. Corrections

No correction is sought in this verification.

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

There has been a change in the start date of crediting period. The start date of the crediting period was changed from 01 Jun 2012 - 31 May 2019 to 31 May 2014 - 30 May 2021². This is due to the fact that there was a delay in the start of the project activity.

E.4.4. Inclusion of a monitoring plan

Monitoring plan was already included in the approved PDD. Hence, not applicable.

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

No permanent changes or deviation in the registered monitoring plan is sought

E.4.6. Changes to the project design

There is no change to the project design of approved project

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

² <https://cdm.unfccc.int/UserManagement/FileStorage/9RIZOTDBXPAJ7G2MN04WSY1ELUVFH6>

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

Not applicable

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

Means of verification	The verification team checked compliance of project monitoring plan with the applied methodology (AMS I.E, version 11) and including applicable tools.
Findings	No findings
Conclusion	All parameters stated in the monitoring plan and the applied methodology has been fulfilled in the current monitoring report. All baseline emission parameters have been verified and found satisfactory. The discussion regarding each parameter has been elaborated in the further sections of this report. The monitoring plan as mentioned in the registered PDD is in accordance with the applied methodology. In the opinion of the verification team the monitoring report complies with the requirement of the registered PDD and applied methodologies in the context of the project activity.

E.6. Compliance of monitoring activities with the registered monitoring plan**E.6.1. Data and parameters fixed ex ante or at renewal of crediting period**

Means of verification	The verification team has checked the ex-ante parameters and data stated in Section D.1 of MR and compared with section B.6.2 of the registered PDD whether all parameters fixed ex-ante for the crediting period have been applied correctly.		
	Ex-ante Parameter	Value	Consistent with the PDD/12/ & the source mentioned in it
	Rating Biogas	1.78	Yes
	B_y	2.82 tonnes/year/family	Yes
	f_{NRB, y}	73.7%	Yes
	NCV_{biomass}	0.0156 TJ/tonne	Yes
	EF_{projected_fossilfuel}	64.4 tCO ₂ /TJ	Yes
Findings	Diversion of non-renewable biomass saved under the project activity by non-project households		
	0.95* B _y		
Findings	No finding		
Conclusion	The values of ex ante fixed parameters have been verified from the revised PDD/12/. Same has been crosschecked with the source mentioned in the PDD and found to be consistent. The verification team confirms that the values used/applied are correct and justified. Also, the ex-ante values have been correctly applied in the calculation of emission reductions.		

E.6.2. Data and parameters monitored

Means of verification	The verification team has determined whether the approved monitoring plan has been properly implemented and followed by the PP that the monitoring has been carried out in accordance with the approved monitoring plan; and determined whether all parameters including project emission parameters, baseline emission parameters and leakage parameters used for emission reduction calculation stated in the registered monitoring plan are monitored or used appropriately as per the revised PDD.
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	During the verification all monitoring parameters listed in Section D.2 of MR were compared with section B.7.1 of the revised PDD have been verified with regard to the: (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. The monitored values are assessed as follows: Biogas Units Constructed (Number of biogas units constructed): This parameter is monitored as and when a digester is commissioned/started producing gas and the same is entered into the monitoring database. The reported data is cross checked with the online monitoring solution/7/ maintained in AF Ecology Centre' during audit. The value reported in the monitoring report (ie, 3351) is found to be correct. Number of biogas plants operating (Number of plants operating in year (t)): PP will repair the plants as and when an issue is found by staff or reported by end user. So, PP continuously monitors the non-working days when the unit is not operational. The emission reduction will be adjusted based on the non-operational days. Hence, the number of biogas plants operating is monitored as 81.02% of 2,715 units. The values were cross verified with Log book records/9/, digitized monitoring database/7/ during audit by the verification team. Hence, the value reported for this parameter is correct. Confirmation that non-renewable biomass of B_y has been substituted (Confirmation that non-renewable biomass has been substituted): This parameter was monitored through stratified random sample survey. PP has conducted survey during the year 2023 and 2025 (01/01/2023 to 31/07/2025) of 50 households respectively selected randomly in each year/8/. As verified from the survey result/8/, all the sample households confirm that the bio digester usage substitute non-renewable biomass used in the baseline situation. All the survey sheets/8/ are verified and found that the data mentioned in the excel sheet is correct. During the audit, verification team has conducted acceptance sampling survey where verification team conducted survey in 22 households (randomly selected from PP's sample population) through telephone. All the data collected are consistent with PP's record/8/. No error found. Hence, the verification team confirms that the non-renewable biomass of B_y has been substituted by the project activity. Non-usage days of biogas plants (Usage of non-renewable biomass in case of non-performance of biogas units): Non-usage days of biogas plants are monitored daily. When the biogas unit is not working, the beneficiaries report to the village level volunteer, who in turn reports to the biogas field of the project for the repair of the unit. The date when the plant stopped working and the date when the issue is fixed are noted down in the village level breakdown log book/9/ by the staffs/volunteers and the same will be entered into monitoring solutions/7/. During lockdown imposed due to the pandemic, at the village level, the village level volunteers repaired the units with minor problems. Major problems that required repairs by masons were attended to after the lockdown and was safe to visit the villages. The breakdown log was updated after the lockdown period. This approach is found to be acceptable. Verification team checked all the breakdown log records/9/ and data in the monitoring solution/7/. The entire breakdown data reported in the ER sheet/2/ was checked and found to be ok. Verification team confirms the data reported in the MR (ie, 4,60,376 biogas days) non-usage days is found to be correct.
Findings	CAR 02 has been raised and closed.
Conclusion	Corresponding to the VVS V04/6/, the team confirm that the monitoring has been carried out in accordance with the revised PDD/12/

	The monitoring system is in compliance with the information flow for the parameters as mentioned in monitoring plan in revised PDD/12/. The monitored data for the parameters has been verified by checking the procedure for information flow and found to be complete and consistent.
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E.6.2.1. Implementation of sampling plan

Means of verification	The verification team checked whether the PP has applied a sampling approach to determine the monitored values. The only parameter that is determined through sampling is 'Confirmation that non-renewable biomass has been substituted'. It is observed that this parameter is not used for emission reduction calculation and just used for qualitative purposes. PP has selected stratified sampling approach and considered each mandals as one stratum. Since the project is installed only in rural households there is no considerable difference in the economic status and cooking habits of households is expected. However, for better representation of the Mandals, PP has considered each mandals as stratum and conducted survey. This is found to be appropriate. The parameter has no bearing on emission reduction calculations. Since the parameter of interest is the proportion parameter PP has estimated the sample size based on 90/10 confidence / precision level is calculated as per the below formula: $n = \frac{1.96^2 NV}{(N - 1) \times 0.1^2 + 1.96^2 V}$ Where, $V = \left(\frac{SD}{mean} \right)^2$ n = Sample size N = Total number of households (At the time of survey) Mean = Expected mean SD = Expected standard deviation 1.645 = Represents 90% confidence required 0.1 = Represents 10% relative precision Hence the number of samples needed is 39. Based on survey of non-renewable biomass conducted, zero HHs need to be sampled. Hence the largest of the households to be sampled is 39. Since the survey is conducted in the households where biogas units are in operational, the expected proportion of the parameter for "Confirmation that non-renewable biomass has been substituted" for each the stratum is 1. Moreover the previous monitoring period survey result also confirms the same. Hence, the sample size required at 90/10 confidence / precision level is estimated to be 0. However, as per the sampling standard, the sample size should be 22. However, PP considered sample size of 50 for (01/01/2023 to 31/07/2025) survey. I) The sample size was determined for "Confirmation that non-renewable biomass has been substituted" as follows: $n \geq \frac{1.96^2 N \times p(p - 1) (N - 1)}{(N - 1) \times 0.1^2 \times p^2 + 1.96^2 p(p - 1)}$
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Where,

n = sample size
 N = Total number of households
 p = expected proportions
 1.96 = Represents the 95% confidence required
 0.1 = Represents the 10% relative precision

Checking Reliability

Precision associated with proportion is z-value x standard error of the proportion.

Where,

z-value is 1.96

The standard error of proportion is calculated as $\sqrt{(1-f) \frac{pq}{n}}$

p is the sample proportion and q = (1-p)

f is the sample fraction

n is total population

The ratio of precision to the proportion gives the relative precision, which needs to be within 10%

Parameter	Sample size (based on expected proportion of HH NRB substituted)	Actual sample size considered for survey/1/	Is sample size adequate?
Confirmation that non-renewable biomass has been substituted.	<30	50	Yes

The sample size calculation provided in the ER calculation sheet/2/ is verified and found to be correct. The chosen minimum sample size seems to be acceptable and conservative. Moreover, PP has considered more sample than required.

Verification team checked calculation and found that the sample size is correctly distributed all stratum.

Verification team checked the PP's survey results. From the verification of the survey results it is observed that in all the households confirms substitution of non-renewable biomass. Hence, the achieved precision is estimated as below :

The sample size calculation provided in the ER calculation sheet/2/ is verified and found to be correct. The chosen minimum sample size seems to be acceptable and conservative. Moreover, PP has considered more sample than required.

Sample survey	Achieved precision/2/	Is less achieved precision is $\leq 10\%$
01/01/2023 to 31/07/2025	0%	Yes

Since all the sampled households confirms substitution of non-renewable biomass in all the surveys, the achieved precision level is 0% which is within the required precision level of 10%. Hence, the verification team confirms that the sample sizes considered by PP are adequate.

	Verification team has conducted acceptance sampling to verify the parameter monitored through sampling. The verification team calculated the minimum sample size (n) as 22 and acceptance number (c) as 1. Verification team has done survey in randomly in 22 numbers of households (selected from the PP's sample population) through telephone and verified the PP's survey data. However, it shall be noted that these parameters are not used for the emission reduction calculation.
Findings	No findings
Conclusion	Verification team concludes the following: • The sample size required is calculated as per the requirements of the standard 'Sampling and surveys for CDM project activities and programmes of activities' v9/06/and guidance 'Sampling and surveys for CDM project activities and programmes of activities' v4/06/. • The sample size considered for the parameter (which is monitored through sampling basis) is found to be adequate. • PP's sample population was selected in all the mandals proportionally based on the number units installed in the respective mandals. • The sampling plan is implemented seems to be appropriate. • Through acceptance sampling, the verification team confirmed that all the data collected by PP through sample survey are correct.

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

Means of verification	Not applicable as no monitoring equipment is involved.
Findings	NA
Conclusion	NA

E.8. Assessment of data and calculation of emission reductions or net removals**E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks**

Means of verification	As per the methodology the emission reduction is directly calculated. Baseline & Project emissions are not calculated separately. The verification team has checked whether calculations of baseline GHG emissions calculation have been carried out in accordance with the formulae and methods described in the registered monitoring plan. In detail the following has been verified: <u>Transparency:</u> It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. <u>Parameter consistency:</u> It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. <u>Correctness:</u> It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology. <u>Completeness:</u> It has been checked whether all calculations are complete and without omissions The equations applied for the determination of GHG emissions reduction is consistent with the registered PDD and applied methodology: The emission reduction is calculated using the formula: $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$ Emission reduction is adjusted with 0.95 factor for leakage (Considering
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	5% leakage) as per the latest version of methodology AMS I.E, version 11 PP has submitted the emission reduction calculation in the excel sheet/2/. The calculation in the excel sheet is checked whether the calculate is in accordance with the formula given in the approved PDD/12/ and the selected methodology/4/.
Findings	CAR 01 was raised and closed successfully.
Conclusion	The verification team confirms the following: • The calculations of baseline GHG emissions have been carried out in accordance with the equations and methods described in the registered monitoring plan and applied methodology. • The emission factor applied is an ex-ante value valid for the fixed crediting period. • Any assumptions used in emission or removal calculations have been justified. • Appropriate emission factor and other reference values have been correctly applied. It can be confirmed that the emission reduction calculation is correct. • The ER calculation sheet/2/ provided is clear, transparent and the calculations provided in the sheet are reproducible. • Hence, the emission reduction reported in the monitoring report/1/ for the monitoring period (ie, 718 tCO₂ without leakage adjustment and 13,607 tCO₂e with leakage adjustment) is verified to be correct.

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

Means of verification	Not applicable as the emission reduction is directly calculated. No project emission is calculated. This is as per the registered PDD & selected methodology.
Findings	No finding
Conclusion	NA

E.8.3. Calculation of leakage GHG emissions

Means of verification	PP has considered 5% leakage as per the latest version of the methodology (AMS I.E). As per the latest version, if PP apply 5% leakage (ie, using the adjustment factor of 0.95) then monitoring of the same is not necessary. Hence, verification team accepts the usage of adjustment factor of 0.95.
Findings	No findings
Conclusion	The PP has applied 0.95 leakage adjustment factor in emission reduction which is acceptable considering the provision in the latest version of the methodology (AMS I.E). Verification team has accepted the same. The leakage estimated in the MR (ie., 718 tCO ₂) is found to be correct.

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

Means of verification	MR demonstrate the summary of GHG emission reductions for the monitoring period and calculated according to the applied methodologies as follows: $ER_y = BE_y - PE_y - L_y$ Where ER_y - Emission reduction for total project activity in year y (tCO₂e/yr) $BE_{p,y}$ - Baseline emissions for baseline scenario b in year y (tCO₂e/yr) PE_y - Project emissions for project scenario p in year y (tCO₂e/yr) L_y - Leakage for project scenario p in year y (tCO₂e/yr) The ER calculation sheet and monitoring report is verified to check the calculation.
Findings	No findings.
Conclusion	The verification team confirms the following:

- The emission reduction is calculated as per the revised PDD and the applied methodology
- The emission reduction value reported in the PDD is verified to be correct.
- The summary of emission reduction are as below:

Vintage	BE _{b,y} (tCO ₂)	PE _{b,y} (tCO ₂)	LE _y (tCO ₂)	ER* (tCO ₂)
2023 (01/01/2023 to 31/12/2023)	5,725	0	287	5,438
2024 (01/01/2024 to 31/12/2024)	5,545	0	278	5,267
2025 (01/01/2025 to 31/07/2025)	3,055	0	153	2,902
Total	14,325	0	718	13,607

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

Means of verification	The verification team has checked whether the MR includes a comparison of actual values of the monitoring period with the estimations in the revised PDD/12/. Section E.5 of the MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the revised PDD	
	Emission reduction estimated as per the revised PDD/12/	Actual emission reduction achieved as per Monitoring report/1/
	76,949 t CO ₂ e	13,607 t CO ₂ e
Findings	CAR-03 is raised and closed satisfactorily	
Conclusion	The estimated emission reduction as per PDD and the actual emission reduction achieved for the monitoring period are correctly reported in the section E.5 of MR. Since the actual ER is less than estimated ER, hence no justification is required.	

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	The verification team has determined the VER achieved during this monitoring period with the estimated value and reason for increase if any.
Findings	No finding
Conclusion	The actual achieved emission reduction is less than the PDD estimation. Hence no justification is required.

E.9. Assessment of reported sustainable development co-benefits

Relevant SDG	SDG 3: Good Health and Well Being	
Parameter description	i. Reduction in indoor air pollution due to reduction in use of traditional cook stoves. ii. Reduction in health issues due to better indoor air quality due to reduction in use of traditional cook stoves	
Monitored Value	100% of the surveyed families.	
Means of verification	The improvement in indoor air condition compared to baseline based on community perspective and Reduction in incidence of health problems i.e. eye irritation, respiratory problems, burns and wounds etc., due to better indoor air quality have been monitored through annual sample survey/7/. The sample survey sheets are verified and found that the data reported in MR is correct. It is also cross-verified through interview with end user during the audit.	
Findings	CAR-04 is raised and closed satisfactorily	
Conclusion	The parameter is monitored appropriately, in accordance with the registered monitoring plan. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. All the monitored parameter values reported in the MR are found to be correct.	
	Baseline Estimate	Project Estimate
	i. Use of traditional cookstove causing	i. Reduction in indoor air pollution (100% of HHs)
		Net Benefit
		i. 100% reduction in indoor air pollution

	indoor smoke and health hazards in 3,351 households – 100% households. ii. 0% of HHs having clear indoor air	ii. Reduction in health issues due in 100% households to better indoor air quality	(100% of HHs) ii. 100% reduction in health issues
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Relevant SDG	SDG 5: Gender Equality		
Parameter description	Reduction in Hours for collection of woody biomass and cooking		
Monitored Value	57.68% of time for cooking and 66.92% for fuelwood collection.		
Means of verification	Sample survey and record the experience of women for reduction in time spent and other activities undertaken compared to baseline		
Findings	No findings		
Conclusion	The parameter is monitored appropriately, in accordance with the registered monitoring plan. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. All the monitored parameter values reported in the MR are found to be correct.		
	Baseline value	Project Value	Net Benefit
	Women spent time 369.04 hours/year for fetching, processing and storing fuelwood and 4.845 hours/days	123.02 hrs/year time spent for fetching, processing and storing fuelwood and 2.04 hours/days for cooking on biogas stoves	66.92% reduction in time spent for fetching, processing and storing fuelwood and 57.68% for cooking food.

Relevant SDG	SDG 7: Affordable and Clean Energy		
Parameter description	i. Number of biogas units constructed for the rural communities thereby reducing the use of fuelwood. ii. % of biogas units working after repaired and maintenance for continuous use of biogas units making them operational.		
Monitored Value	i. 3,351 units ii. 2,715 units - 81.02% operational		
Means of verification	i. and ii. The village level volunteers/biogas case workers collect data of the units constructed. Also, the units that are non-operational and needs repairs are collected. This information is entered into the monitoring solution for the project. As and when the units are repaired, it is entered in the monitoring solution. This data provides information of the parameter.		
Findings	No findings		

Conclusion	The parameter is monitored appropriately, in accordance with the registered monitoring plan. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. All the monitored parameter values reported in the MR are found to be correct.		
	Baseline value	Project Value	Net Benefit
	No Biogas Units	i. 3,351 units ii. 81.02% of units operational	i. 3,351 units ii. 81.02% of units operational

Relevant SDG	SDG 8: Decent work and economic growth																															
Parameter description	Number of permanent and temporary jobs created due to the project activity.																															
Monitored Value	<table><tr><th>Jobs</th><th>Number</th><th>No. of Male</th><th>No. of Female</th></tr><tr><td>CDM Manager</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Desk Worker</td><td>1</td><td>0</td><td>1</td></tr><tr><td>Case Worker</td><td>5</td><td>5</td><td>0</td></tr><tr><td>Volunteers</td><td>104</td><td>0</td><td>77</td></tr><tr><td>Total</td><td>112</td><td>7</td><td>105</td></tr><tr><td colspan="2">% of Male and Female employees</td><td>93.75% female</td><td>6.25% male</td></tr></table>				Jobs	Number	No. of Male	No. of Female	CDM Manager	1	1	0	Desk Worker	1	0	1	Case Worker	5	5	0	Volunteers	104	0	77	Total	112	7	105	% of Male and Female employees		93.75% female	6.25% male
	Jobs	Number	No. of Male	No. of Female																												
	CDM Manager	1	1	0																												
	Desk Worker	1	0	1																												
	Case Worker	5	5	0																												
	Volunteers	104	0	77																												
	Total	112	7	105																												
	% of Male and Female employees		93.75% female	6.25% male																												
	Of these, 8 are permanent jobs, which includes the CDM Manager, Desk worker and the Case workers. The village level volunteers, 104 in number, are temporary jobs.																															
Means of verification	The value has been derived from the financial statements of the project																															
Findings	No findings																															
Conclusion	The parameter is monitored appropriately, in accordance with the registered monitoring plan. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. All the monitored parameter values reported in the MR are found to be correct.																															
	<table><tr><th>Baseline value</th><th>Project Value</th><th>Net Reduction</th></tr><tr><td>No project related jobs created</td><td>112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs</td><td>112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs</td></tr></table>				Baseline value	Project Value	Net Reduction	No project related jobs created	112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs	112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs																						
	Baseline value	Project Value	Net Reduction																													
No project related jobs created	112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs	112 jobs created due to the project activity of which 93.75% are women; 8 permanent and 104 temporary jobs																														

Relevant SDG	SDG 17: Partnerships for the Goals
Parameter description	Access to domestic or international carbon funding to implement clean technologies
Monitored Value	100% is carbon revenue.
Means of verification	These details are taken from the PP's audited financial statement/14/. Verification team checked the audited statement via bank of 100% carbon revenue for construction and maintenance of units.
Findings	No findings

Conclusion	The parameter is monitored appropriately, in accordance with the registered monitoring plan. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. All the monitored parameter values reported in the MR are found to be correct.		
	Baseline value	Project Value	Net Reduction
	No funding in the baseline scenario	93.32 million Rs. for the project so far and 10.79 million for the monitoring period i.e. 100% carbon revenue for construction and maintenance of units	93.32 million Rs. for the project so far and 10.79 million for the monitoring period i.e. 100% carbon revenue for construction and maintenance of units

E.10. Stakeholder Inputs & Legal Dispute

Means of verification	All the inputs from stakeholders are related to repair and maintenance of biogas system. PP attended all the cases and resolved the same. There were no grievances with regard to project implementation received during the current or previous monitoring period. Verification team checked the complaints register and confirmed that all the cases are resolved by repairing stove, component and digesters. Verification team checked with Accion Fraterna whether any legal consent or dispute arise during the monitoring period and PPs also confirmed that there are such no legal contests or dispute that has arisen with the project during the monitoring period. Verification team also interviewed stakeholders and independently checked through Google to check any legal dispute ongoing with PP and found no such legal dispute is pending. PP also provided undertaking letter confirming that there is no legal consent or dispute arise during the monitoring period.
Findings	No finding
Conclusion	The verification team confirms the following: - The only grievances received from biogas users are related to repairs & maintenance of stoves. All the cases received during the monitoring period are attended and resolved during the monitoring period itself. - No other grievances received during the current or previous monitoring period - No legal consent or dispute raised during the monitoring period.

SECTION F. Internal quality control

The draft verification report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by 4KES are duly followed and the verification report/opinion is reached in an objective manner and complies with the applicable Gold Standard & CDM requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team. The independent technical reviewer(s) may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before submit final report to Client/Gold Standard. The final approval decision is taken by the Head of the DOE/Director.

The final decision is authorized by the Director, 4KES, once the report is finalized by the Head of the DOE/DOE Manager.

SECTION G. Verification opinion

The verification team confirms that the evidence is of sufficient quantity, appropriate quality and reliable. The reported values, notation, units and sources in the monitoring report for all the monitoring parameters have been cross checked with the emission reduction sheet and monitoring report. During the course of verification, the data submitted by PP was cross verified with the values mentioned in the emission reduction sheet/2/ and monitoring report/1/. The procedure for data monitoring, recording, transfer and compilation was also verified and found in compliance with the monitoring plan as mentioned in the approved revised PDD/12/.

Evidences (Documents/interview/On site audit) referred for verification of individual monitoring parameter and fixed parameters are defined in section E.6 above. It is confirmed by the assessment team that the reported emission reductions have been conservatively calculated. A list of referred documents for verification is also included in Appendix 3 of this report.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 13,607 tCO₂e emission reductions during period 01/01/2023 to 31/07/2025

SECTION H. Certification statement

4K Earth Science Private Limited has been contracted by 'ACCION FRATERNA ECOLOGY CENTRE' to undertake independent verification and certification for the greenhouse gas (GHG) emission reductions reported and the contribution to sustainable development indicators from the GS Project activity "Accion Fraterna Biogas CDM project for rural communities in Anantapur, Andhra Pradesh" and CDM Ref # 3779 & GS Ref# GS980 for the monitoring period 01/01/2023 to 31/07/2025 (including both dates) in the GS Monitoring Report Version 01 (first version) dated. 18/08/2025.

The verification is based on the revised PDD and the monitoring report for this project. Our verification approach was based on the requirements as defined under the Gold Standard requirement, Kyoto Protocol, Marrakech accord, as well as those defined by the GS Executive Board.

The management of the 'ACCION FRATERNA ECOLOGY CENTRE' is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions & monitoring of SDG parameters on the basis set out within the project Final GS Monitoring Report Version 03 dated 27/01/2026. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'ACCION FRATERNA ECOLOGY CENTRE'. The development and maintenance of records and reporting procedures are in accordance with the GS Monitoring Report Version 02.

In our opinion the GHG emissions reductions reported for the project activity are fairly stated in the GS Monitoring Report (final) Version 03 dated 27/01/2026. 4KES based on outcome of verification activities, certifies in writing that, during the monitoring period 01/01/2023 to 31/07/2025 (including both days), the registered CDM GS PA "Accion Fraterna Biogas CDM project for rural communities in Anantapur, Andhra Pradesh" in the registered GS CDM PA achieved the verified amount of 13,607 tCO₂e reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the PA.

The Verified emission reduction during the monitoring period 01/01/2023 to 31/07/2025 (including both dates) is stated below:

Vintage	Duration	Gold Standard verified emission reductions
2023	01/01/2023 - 31/12/2023	5,438
2024	01/01/2024 - 31/12/2024	5,267
2025	01/01/2025 - 31/07/2025	2,902
Total	01/01/2023 to 31/07/2025	13,607

Appendix 1. Abbreviations

Abbreviations	Full texts
4KES	4K Earth Science Pvt. Ltd
AF Ecology centre	Accion Fraterna Ecology Centre
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CH ₄	Methane
CL	Clarification Request
CO ₂ e	Carbon dioxide equivalent
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
FCN	Fair Climate Network
GHGs	Greenhouse Gas(es)
GS	Gold Standard
GVC	Gram Vikas Committees
GVK	Gram Vikas Kosh
GWP	Global Warming Potential
HH	Household
ISO	International Organization of Standardization
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
NCV	Net Calorific Value
NGO	Non Governmental Organisation
PE	Project Emissions
PDD	Project Design Document
PS	Project Standard
PCIA	Partnership for Clean Indoor Air
PCP	Project Cycle Procedure
SD	Sustainable Development
SDG	Sustainable Development Goal
SHG	Self Help Group
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reduction
VVB	Validation and Verification Body
VVS	Validation & Verification Standard
WBT	Water Boiling Test

Appendix 2.

Competence of team members and technical reviewers

<u>Certificate of Competence</u>							
Name	☒ Mr. ☐ Ms.	Rohit Badaya					
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
Appointed to work as:							
	Validator/ Verifier	Team Leader	Trainee	Technical Expert	Technical Reviewer	Financial Expert	Approver
Appointed	Yes	Yes	No	Yes	Yes	No	No
Appointed Date	23-06-2025						
Authorized to work as Technical Expert for:							
Authorized Technical Area	Sectoral Scope		TA Code		Technical Area within the scope		
	Energy industries (renewable - / non-renewable sources)		1.1		Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2		Renewables		
	Energy Distribution		2.1		Energy Distribution		
	Energy demand		3.1		Energy demand		
	Waste handling and disposal		13.1		Solid waste and wastewater		
	Waste handling and disposal		13.2		Manure		
Authorized to work as Local Expert for:							
Country/Countries	India, Kenya and Uganda						
Compliance check by:				Swati S Acharya			

<u>Certificate of Competence</u>							
Name	☒ Mr. ☐ Ms.	Gurubalaji K					
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
Appointed to work as:							
	Validator/ Verifier	Team Leader	Trainee	Technical Expert	Technical Reviewer	Financial Expert	Approver
Appointed	Yes	No	No	No	No	No	No
Appointed Date	23-06-2025						
Authorized to work as Technical Expert for:							
Authorized Technical Area	Sectoral Scope		TA Code		Technical Area within the scope		
	-		-		-		
Authorized to work as Local Expert for:							
Country/Countries	India						
Compliance check by:				Swati S Acharya			

Certificate of Competence

Name	☒ Mr. ☐ Ms.	Ragul B R					
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
Appointed to work as:							
	Validator/ Verifier	Team Leader	Trainee	Technical Expert	Technical Reviewer	Financial Expert	Approver
Appointed	Yes	No	No	Yes	No	No	No
Appointed Date	23-06-2025						
Authorized to work as Technical Expert for:							
Authorized Technical Area	Sectoral Scope		TA Code		Technical Area within the scope		
	Transportation		7.1		Transport		
Authorized to work as Local Expert for:							
Country/Countries	-						
Compliance check by:				Swati S Acharya			

Certificate of Competence

Name	☒ Mr. ☐ Ms.	Chetan Swaroop Sharma					
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
Appointed to work as:							
	Validator/ Verifier	Team Leader	Trainee	Technical Expert	Technical Reviewer	Financial Expert	Approver
Appointed	Yes	Yes	No	Yes	Yes	No	Yes
Appointed Date	23-06-2025						
Authorized to work as Technical Expert for:							
Authorized Technical Area	Sectoral Scope		TA Code		Technical Area within the scope		
	Energy industries (renewable - / non-renewable sources)		1.1		Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2		Renewables		
	Energy distribution		2.1		Energy distribution		
	Energy demand		3.1		Energy demand		
	Waste handling and disposal		13.1		Solid waste and wastewater		
	Waste handling and disposal		13.2		Manure		
Authorized to work as Local Expert for:							
Country/Countries	India, Mauritius, Vietnam, Senegal and Thailand						
Compliance check by:				Swati S Acharya			

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	PP	Monitoring Report	Version 01, dated 18/08/2025	PP
	PP	Monitoring Report	Version 02, dated 28/09/2025	PP
	PP	Monitoring Report	Version 03, dated 27/01/2026	PP
2	PP	(VER) Calculation Sheet	Version 01	PP
3	4K Earth Science Private limited	5nd verification report	Revision 4, dated 08/04/2024	Publicly available
	PP	5 th Monitoring report	Version 04 18/12/2023	Publicly available
4	UNFCCC	AMS I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User	Version 04	Publicly available
5	Gold Standard	GS4GG Transition Review		PP
6	UNFCCC	CDM Validation and Verification Standard Sampling and surveys for CDM project activities and programmes of activities' (Version 09) Sampling and surveys for CDM project activities and programmes of activities' (Version 04)	Version 04	Publicly available
7	AF Ecology centre	Biogas basic record set: -Biogas application form -End user agreement for VER ownership -Completion certificate -Online monitoring solution	-	AF Ecology centre
8	AF Ecology centre	Sample survey monitoring sheets for the year 01/01/2023 to 31/07/2025	-	AF Ecology centre
9	AF Ecology centre	Village level plant breakdown log sheets maintained by village level volunteers	-	AF Ecology centre
10	AF Ecology centre	General Ledger	-	AF Ecology centre
11	AF Ecology centre	End user Agreement ER sheet	-	AF Ecology centre
12	AF Ecology centre	Project Design Document	Version 08 14/12/2021	AF Ecology centre
13	AF Ecology centre	Annual report for the Year 2023,2024 and 2025	-	AF Ecology centre
14	AF Ecology centre	financial statements	2023 - 2025	

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

Table 1: Remaining forward action requests from validation and/or previous verifications

FAR ID	01	Section no.		Date:
Description of FAR				
FAR # 1: In-line with GS4GG Principles and Requirements, VVB and PP shall consider the rule below for future monitoring activities: 5.1.39: An annual update report shall be provided to GS - when design certification is achieved- for each monitoring year by the end of next calendar year for which verification is not completed. FAR # 2: At the time of Performance Review for GS-VER, the project developer shall make a declaration in writing in the monitoring report and confirm the project will not issue both CER/other compliance units under Paris Agreement and GS VER for the same vintage. VVB shall verify and confirm the same. FAR # 3: 1. Section B.1 MR and Appendix 4 VR – FAR - If the same VVB wishes to performance verification of this project for which they have performed validation activity, the VVB shall ensure that the entire verification audit team, including lead auditors, auditors and sectoral experts, are different from the team that performed the validation activity. In case noncompliance, no further deviation should be approved in this case.				
Project participant response				Date:
FAR 01: The annual report was submitted in 2023,2024 and 2025. FAR 02: Details have been included in the monitoring report in section A.1 FAR 03: VVB shall be address.				
Documentation provided by project participant				
NA				
DOE assessment				Date:
FAR # 1: VVB has verified the annual report in 2023,2024 and 2025, FAR # 2: The PD has updated Section A.1 of the Monitoring Report to clarify that this is a GS CDM project transitioning to a GS VER project without deregistration from the CDM. The VVB has verified that GS VERs will be claimed only once and will not be double-counted under the UNFCCC. Furthermore, the project will not issue both CERs (or other compliance units under the Paris Agreement) and GS VERs for the same vintage. FAR # 3: The VVB has confirmed that the team assigned to the current monitoring period is entirely different from the team that performed the previous validation and verification activities.				

Table 2. CL from this Verification

CL ID	01	Section no.		Date: 25/08/2025
Description of CL				

PP is required to submit the following documents:	
1. Kindly provide the SDG impact tool. 2. Kindly submit the double counting deceleration. 3. End user agreement. 4. monitoring database sheets. 5. Kindly provide the SDG's proofs. 6. Latest Kitchen Performance Test	
Project participant response	Date:
<i>The following is provided:</i> <i>The SDG impact tool.</i> <i>The double counting declaration.</i> <i>End user agreements.</i> <i>The data of the Monitoring of biogas and entered into online solution is provided along with the analysis.</i> <i>The monitoring database sheets.</i> <i>The SDG Proofs are provided</i> <i>The Kitchen Performance Test based on which the emission reductions are calculated is enclosed</i> <i>The end user agreements</i>	
Documentation provided by project participant	
<i>The above-mentioned documents are provided.</i>	
DOE assessment	Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CL 01 is closed.</i>	

CL ID	02	Section no.	ER sheet	Date: 25/08/2025
Description of CL				
The PP needs to clarify how biogas breakdowns and repairs were identified during this monitoring period, how long it took to resolve them, and where these were recorded.				
Project participant response				Date:
<i>The village level volunteers visit the households periodically to check on the usage of the units. Also, in case of any repairs or maintenance, the end users call the case workers or the village level volunteers.</i> <i>The date of breakdown and the date of repair is noted downs. Emission reductions are not estimated for these days, when the system is not working. Those units that are not operational at all are not included for emission reduction calcualtions. The breakdown log of the units with the dates of problem, the problem and the date of repair, if repaired is provided for the monitoring period.</i>				
Documentation provided by project participant				
<i>Breakdown and repair log for the monitoring period downloaded from the online monitoring solution.</i>				
DOE assessment				Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CL 02 is closed.</i>				

CL ID	03	Section no.	D.2.of MR	Date: 25/08/2025
Description of CL				
The PP needs to clarify whether any biogas units were demolished during this monitoring period.				
Project participant response				Date:
<i>Based on the database, during this monitoring period, 225 units were not claimed emission reduction due to them being demolished. The breakdown log is submitted with details of breakdown for all the units during the monitoring period.</i>				
Documentation provided by project participant				
<i>Breakdown and repair log for the monitoring period</i>				
DOE assessment				Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CL 03 is closed.</i>				

Table 3. CAR from this verification

CAR ID	01	Section no.	ER sheet	Date: 25/08/2025
Description of CAR				

1. In the ER sheet under the tag 'Summary,' the 'total VERs generated from 01/01/2023 to 31/12/2024' is inconsistent with the dates reported in the MR.	
Project participant response	Date:
<i>The total VERs generated is from 01/01/2023 to 31/07/2025. This is corrected in the ER calculations sheet.</i>	
Documentation provided by project participant	
<i>Revised ER Calculations sheet</i>	
DOE assessment	Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CAR 01 is closed.</i>	

CAR ID	02	Section no.	D.2	Date: 11/07/2023
Description of CAR				
<i>In section D.2, under Number of biogas plants operating table, the number of units constructed mentioned in Measurement methods and procedure is inconsistent with the Key Project Information. PP is to rectify.</i>				
Project participant response				Date:
<i>It is a typo error. The number of biogas units constructed is 3,351. This is corrected throughout the monitoring report.</i>				
Documentation provided by project participant				
<i>Revised Monitoring Report</i>				
DOE assessment				Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CAR 02 is closed.</i>				

CAR ID	03	Section no.	E.4 of MR	Date: 25/08/2025
Description of CAR				
<i>In Section E.4 of the MR, the SDG 13 net benefit value of 9,077 tCO₂ shown below the table is not consistent with the ER sheet.</i>				
Project participant response				Date:
<i>The value is corrected to 13,607 tCO₂ and is now consistent with the ER sheet.</i>				
Documentation provided by project participant				
<i>Revised ER Sheet</i>				
DOE assessment				Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CAR 03 is closed.</i>				

CAR ID	04	Section no.	ER sheet	Date: 25/08/2025
Description of CAR				
1. <i>In the ER sheet, the PP shall include the percentage change comparison of the SDG claim with the corresponding ex-ante values.</i>				
Project participant response				Date:
<i>The percentage change in comparison with the corresponding ex-ante values are provided in the revised ER calculations sheet.</i>				
Documentation provided by project participant				
<i>Revised ER Sheet</i>				
DOE assessment				Date: 28/10/2025
<i>The above mentioned have been verified and found ok. Hence CAR 04 is closed.</i>				

Table 4. FAR from this Verification

FAR ID	NA	Section no.		Date :
Description of FAR				
Project participant response				Date :

Documentation provided by project participant	
DOE assessment	Date: