Verification and certification report form for Gold Standard project activities

BASIC INFORMATION	
Title and GS reference number of the project activity	Implementation of clean energy technology in rural areas of India-2 (GS 11656)
Scale of the project activity	☐ Large-scale ☒ Small-scale
Version number of the verification and certification report	05
Completion date of the verification and certification report	27/11/2025
Monitoring period number and duration of this monitoring period	04 01/10/2024-31/07/2025 (inclusive of both days)
Version number of the monitoring report to which this report applies	03 dated 25/11/2025
Crediting period of the project activity corresponding to this monitoring period	01/06/2021 to 31/05/2026
Project representative(s)	Greneity Infocom Service Private Limited
Host Party	India
Applied methodologies and standardized baselines	AMS-I.E. Switch from non-renewable biomass for thermal applications by the user - Version 12
Mandatory sectoral scopes	01
Conditional sectoral scopes, if applicable	13
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	45,328 tCO_2e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	44,454tCO_2e
SDG Impacts:	1. SDG 3: Good health and wellbeing 2. SDG 7: Affordable and Clean Energy 3. SDG 8: Decent work and Economic Growth 4. SDG 13: Climate Action
Name and UNFCCC reference number of the VVB	E-0052: Carbon Check (India) Private Ltd.

Name, position and signature of the approver of the verification and certification report	 Amit Anand, CEO

SECTION A. Executive summary

Carbon Check (India) Private Ltd. is performing the fourth periodic verification of the GS project “Implementation of clean energy technology in rural areas of India-2” (GS project id: GS 11656) for the period 01/10/2024 - 31/07/2024 (inclusive of both the dates). The project activity involves bundling of 11,085 household biogas plants in the state of Punjab, India, with capacity of $4m^3$. All 11,085 plants are commissioned in between June, 2021 and January, 2022.

According to the PDD /B03/ & MR /01/, the project activity "Implementation of clean energy technology in rural areas of India-2" aims to improve health and income of India by reducing time and money spent acquiring fuel for cooking and by providing local populations with improved access to clean energy. The objective of this project activity is to replace the commonly used inefficient wood-fired mud stove technology with an efficient biogas-based cook stove that is both clean and sustainable.

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

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

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

The objective of this verification was to verify and certify emission reductions reported for the “Implementation of clean energy technology in rural areas of India-2” in the host country “India” for the period 01/10/2024-31/07/2025 (including both the days).

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

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

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered PDD
- To verify the implemented monitoring plan with the registered PDD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

- To verify that reported GHG emission data is sufficiently supported by evidence.

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

Verification process:

The verification comprises a review of the monitoring report /01/ over the monitoring period from 01/10/2024-31/07/2025 (inclusive) and based on the registered VPA-DD as part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology, and all related evidence provided by project participants.

On-site interviews and inspections are also performed as part of the verification process.

Conclusion:

The verification team assigned by the Validation & Verification body (VVB) concludes that the monitoring report /01/, meet all relevant requirements of the Gold Standard as per the requirements of GS4GG. The verification has been conducted in-line with the GS4GG requirements.

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and the registered PDD /B03/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. The following table provides the resulted emission reduction from the project as verified through the document review and on-site interviews by the verification team.

Vintage	**ER (tCO_2e)**
01/10/2024 – 31/12/2024	13,453 tCO_2e
01/01/2025 – 31/07/2025	31,001 tCO_2e
Total for the monitoring period	44,454 tCO_2e

Carbon Check as a Validation &Verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the Certification statement.

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.	Team Leader / Verifier /	IR	Suhail K	Muhammed	Carbon Check	X	X	X	X
2.	Technical Expert	IR	Mathew	Vijay	Carbon Check	X	X	X	X

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	ER	S	Ranganathan	Carbon Check
2.	Approver	IR	Anand	Amit	Carbon Check

SECTION C. Means of verification

C.1. Desk/document review

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

C.2. On-site inspection

Physical on-site inspection has been performed and the Team leader and the technical expert also the host country expert has conducted the on-site inspection. The Team leader Mr. Muhammed Suhail K and Technical expert Mr. Vijay Mathew (who is also the technical and host country expert) has conducted the on-site inspection on 10/08/2025 to 11/08/2025. VVB has planned and carried out verification audit as per the Site Visit and Remote Audit Requirements and Procedures, version 2.0 dated 30.05.2023/B06/.

C.3. Interviews

An inspection and interview were performed, and the following activities were performed:

i. An assessment of the implementation and operation of the registered project activity as per the registered PDD;
ii. A review of information flows for generating, aggregating and reporting the monitoring parameters;
iii. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD;
iv. A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
v. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology and corresponding tool(s), where applicable;
vi. A review of calculations and assumptions made in determining the GHG data and emission reductions;
vii. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.
viii. Verification of the monitoring of sustainable development indicators

The project representatives and stakeholders interviewed:

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
/01/	Singh	Amritpal	Greneity Infocom Services	10/08/2025 to 11/08/2025	Project Design Organisation background Project Implementation plan Project start date and Project Location Project background information Baseline surveys, KPT, FNRB calculation Baseline Scenario Baseline Identification and Additionality Monitoring and reporting documentation Qualification and Training Quality Assurance-Management and operating system Social and Environmental Impacts Local Stakeholders meeting process Compliance with relevant laws Roles and responsibility Observations of established practices, Project Implementation and operation, Competency of surveying staff, Grievance handling, Maintenance Monitoring plan, impact parameters, SDG claims, preventive m/c, Safeguarding Principles, reduction in ER and firewood usage etc.	Muhammed Suhail K & Vijay Mathew

/02/	Sharma	Arjun	Greneity Infocom Services	10/08/2025 to 11/08/2025	Project Design Organisation background Project Implementation plan Project start date and Project Location Project background information Baseline surveys, KPT, FNRB calculation Baseline Scenario Baseline Identification and Additionality Monitoring and reporting documentation Qualification and Training Quality Assurance-Management and operating system Social and Environmental Impacts Local Stakeholders meeting process Compliance with relevant laws Roles and responsibility Observations of established practices, Project Implementation and operation, Grievance handling, Maintenance Monitoring plan, impact parameters, SDG claims, preventive m/c, Safeguarding Principles, emission reduction and firewood usage etc.	Muhammed Suhail K & Vijay Mathew
/04/	Singh	Gurmeet	PB/GRN/AMR/4/43 (Pathan	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay

			Nangal Village,Amritsar)			Mathew
/05/	Singh	Harbhajan	PB/GRN/AMR/4/173 (Varnali village, Amritsar)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/06/	Singh	Fagga	PB/GRN/AMR/4/184 (Raja Sansi village,Amritsar)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/07/	Singh	Hardeep	PB/GRN/AMR/4/193 (Kohali village, Amritsar)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/08/	Singh	Onkar	PB/GRN/AMR/4/450 (Varpal Klah village, Amritsar)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/09/	Singh	Snagara	PB/GRN/TRN/4/8458 (Saran village, Tarn Taran)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/10/	Singh	Kishan	PB/GRN/TRN/4/8529 (Jahangir kalan village, Tarn Taran)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/11/	Singh	Jaswant	PB/GRN/TRN/4/8971 (Jawandh Pur village, Tarn Taran)	11/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/12/	Singh	Gurbhaksh k	PB/GRN/PAT/4/6695 (Cehial village,Patiala)	10/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew
/13/	Singh	Charnjit	PB/GRN/PAT/4/6829 (Nahura	10/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew

			Village, Patiala)			
/14/	Singh	Sajjan	PB/GRN/PAT/4/7215 (Kheri Mania village , Patiala)	10/08/2025	Monitoring Surveys	Muhammed Suhail K & Vijay Mathew

During the on-site verification, the assessment team conducted interviews with the end users to confirm the proper installation, usage, and operation of the household biogas systems. The questionnaire covered key aspects such as household details, digester installation and operation status, gas stove functionality, slurry utilization, and continued use of baseline fuels or devices. All the installed biogas plants in the surveyed households were physically inspected by the VVB and found to be operational and in good working condition. The end users confirmed that they no longer use their baseline cooking stoves except for occasional use during temporary pipeline issues, maintenance activities, or user-specific contingencies.

Users were also asked about their cooking practices, frequency of biogas usage, seasonal variations (if any) in gas generation, types and quantity of feedstock used (mainly cattle dung), and overall reliability of the system. Additional questions focused on the use of digested slurry as fertilizer, benefits experienced from reduced firewood collection, and any operational issues encountered. The team further verified the physical condition of the digesters, connected pipelines, biogas stoves, and slurry outlets, noting clear evidence of regular use and proper maintenance. No baseline stoves or alternate fuel systems were observed in operation. Respondents expressed high satisfaction with the biogas systems, highlighting benefits such as smoke-free cooking, reduced dependence on firewood, time savings, improved cooking convenience, lower household expenses, and productive use of slurry as organic fertilizer.

As per section 9.6 of the GS Validation and Verification Standard v2.0/B07/, States that “Materiality, as defined in ISO14064-3, shall be applied in the context of the GS Program. The materiality thresholds stipulated for the CDM shall be applicable.”

As per the standard CDM validation and verification standard for project activities, version 04/B04/ “A DOE planning and conducting verification using the concept of materiality shall achieve a reasonable level of assurance that the reported GHG emission reductions or net anthropogenic GHG removals are free from material errors, omissions or misstatements.

An omission, misstatement, or erroneous reporting of information is material if it might lead, at an aggregated level, to an overestimation of the total emission reductions/removals achieved by a registered project equal to or higher than the following thresholds:
a. 0.5 per cent of the emission reductions/removals for project achieving a total emission reduction equal to or more than 500,000 tonnes of carbon dioxide equivalent per year;
b. 1 per cent of the emission reductions/removals for projects achieving a total emission reduction between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;
c. 2 per cent of the emission reductions/removals for large-scale project activities achieving a total emission reduction of 300,000 tonnes of carbon dioxide equivalent per year or less;
d. 10 per cent of the emission reductions/removals for microscale projects.

As per the GS PDD, the project is categorized as small-scale. The achieved emission reduction for this monitoring period is 44,454 tCO2e, hence the applied materiality threshold would be 2%.

Parameter	How the PP conducted sampling surveys (to obtain the project participants' or the coordinating/managing entities' records)	How the VVB could obtain records for verification	Criteria for deciding what ultimately constitutes a discrepancy
Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent. ($BC_{PJ,HH,y}$)	Sampling based survey (questionnaire survey/interviews)	Cross-check of a sample of project participants' samples (questionnaire, operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from the on-site inspection interviews • Baseline scenario of the household • Enquire/observe the pre-project/baseline stove/s and its operation during the project scenario. • Enquire/observe parallel use of any other stove and their fuel • Enquire/observe source /storage of fuelwood/charcoal or any other fuel • Competency of surveying staff	VVB results, accounting for duly justified differences.
Number of households (biogas system) in the project activity in operational per year (N_{HH})	Sampling based survey (questionnaire survey/interviews)	Cross-check of a sample of project participants' samples (questionnaire, operation surveys/interviews) including but not limited to following: • Consistency between the information as contained in Survey sheet and revealed from the on-site inspection interviews • Baseline scenario of the household • Enquire/observe the pre-project/baseline stove/s and its	VVB results, accounting for duly justified differences.

		operation during the project scenario. • Enquire/observe parallel use of any other stove and their fuel • Enquire/observe source /storage of fuelwood/charcoal or any other fuel. • Competency of surveying staff	

C.4. Sampling approach

As the target population is homogeneous, PP has proposed simple random sampling plan using 95/10 as confidence/precision. This is in line with the applied methodology /B01/. The sample size for each parameter is determined following guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4) /B04/.

In line with paragraph 26 of the Sampling Standard, the verification team has applied acceptance sampling approach through on-site interviews on the monitoring survey as part of verification. The project participant had applied sampling approach to the monitoring survey /09/, conducted by the representatives of project participant. The verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B04/.

Applying paragraph 39 (c) of the sampling standard, version 09 /B04/, a sample size of 11 households was chosen (with no discrepant records). A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk and consumer risk of 10 % each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0. VVB interviewed 11 samples from the baseline survey done by project participants.

The information provided in the monitoring survey /09/, has been cross checked during the Onsite visit. As a part of acceptance sampling, the Verification team could confirm the monitoring survey data /10/ with no discrepant records. Thus, PP's set of records has been accepted in line with § 33 of the sampling standard, version 09 /B04/.

Parameter	Verification approach	Population (for VVB's sample)	VVB's Sample Size
Usage and Monitoring Survey	ASP	300	11

The details of the sample interviewed are listed in section C.3 (under the list of interviewed persons). No discrepancy was found in any of the 11 samples and thus c=0, i.e., no discrepant records were observed. Thus, PP's set of records has been accepted in line with §33 of the sampling standard (version 09.0) /B04/. For the impact parameters, questionnaire was prepared and was used during the survey by the PP. During the on-site interviews, the verification team cross-checked these sample documents, and no discrepancies were found in the impact parameters as well. Furthermore, the training & competency of the personnel, who conducted such test were checked. They were also interviewed to ensure that the process, method used, and their competency to confirm such

standardised test were appropriately applied. The sampling technique to draw such samples were found adequate and the sample collectors were found competent to perform such task.

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

The VVB had raised 04 clarifications (CLs) and 06 corrective action requests (CARs) and satisfactorily closed. No FAR has been raised during this verification.

SECTION D. Verification findings

D.1. Remaining forward action requests from validation and/or previous verifications

No remaining FARs from previous Verifications or Validations

D.2. Compliance of the project implementation and operation with the registered project design document

Means of verification	Document Review, Interview
Findings	CAR 01 has been raised and resolved successfully. Please refer Appendix 4 of the report.
Conclusion	Verification team confirms that the latest available version of the monitoring report template has been used and the MR is in compliance with the monitoring report form and related monitoring report template guide. As verified from on-site interview and third-party survey report /10/, the audit team confirm the project implementation, and operation complies with the project design document /B03/. The starting date of operation is 10/06/2021 (commissioning of first biogas plant) which is confirmed from the registered PDD /B03/ and validation report /B03/. The Project activity involves bundling of 11,085 plants installed in rural areas of Punjab installed between June 2021 to January 2022, constructed & maintained by Green Mission Welfare society. The project boundary in the registered PDD /B03/ is in line with the actual project boundary. 11,085 household biogas systems are employed for the project activity, which are fixed throughout the crediting period. Further, annual emission reduction is less than 60,000 tCO_2e. The same is confirmed from the ER calculation sheet/02/. Therefore, VVB concludes that the project activity is within threshold for small-scale project. Carbon Check confirms that the project biogas systems are operational through on-site visits and interviews with end users. Each biogas system has a unique identification number/08//07/ that was provided in the end user agreement and are correct according to the project database. Each biogas plant is also physically marked with its unique identification number. Along with the serial number, the biogas technology, end username, address, commissioning date etc. had also been noted which were found to be consistent on ground. It is noted that no changes have been observed or identified, that may impact the additionality. No addition of component nor extension of technology, no addition nor removal of project sites, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; no change has been observed or identified that may impact the scale of the project activity or

	applicability of baseline and monitoring methodology AMS-I.E version 12 /B01/. The operational status of all project bio-digesters, impact on identified SDGs from 01/10/2024-31/07/2025 has been taken into consideration. Verification team based on review of MR /01/ and registered PDD confirms that the households/end users relinquish their right of carbon credits. Furthermore, the bio digester plants implemented under the project is uniquely identified, thus avoiding any potential double counting. PP has ensured each of the bio digesters have their UID on them, which will prevent any kind of double counting. Further, it has been observed that same districts with same size of bio digesters are not repeated in the different projects. This was confirmed during the validation and verification site visits undertaken by VVB. Further, PP has provided an undertaking that same project is not developed under any other carbon scheme/07/. Verification team has checked the information in the monitoring report /01/ and compared it against the registered PDD /B03/ and found to be consistent. Verification team during the on-site visit /18/ has confirmed that the project activity is complying to the legal and regulatory requirements. As the project activity is household-based biogas project there is no mandatory legal approvals for the operation are required. Also, the project activity is a voluntary activity. Further, it has been confirmed that the project activity implementation is a per the registered PDD /B03/ and other regulatory documents. The project activity claims SDG 7, SDG 8 and SDG 3 apart from SDG 13 for this project activity. Verification body has checked the survey report /10/ to confirm that the projects status towards the achievement of these SDGs. Further, there is no mandatory legal requirement in the host country which require the implementation of SDG 7, SDG 8 and SDG 3 related to the project activity. Therefore, it is confirmed that the SDG 7. SDG 8 and SDG 3 claimed by the project activity is fully voluntary. The same is also confirmed during the onsite interviews with stakeholders /18/. Verification team confirms that: a) The project activity is implemented as per registered PDD/B03/. b) The actual operation of the proposed GS project activity is in line with the registered/revised PDD /B03/. c) It has reviewed the registered PDD /B03/ including the monitoring plan, the applied monitoring methodology and found that the final MR/01/ for this monitoring period is in line with all the above-mentioned documents. Verification team of Carbon Check based on review of records and on-site interviews confirms an effective grievance addressal mechanism is in place. The end-users are aware of the grievance register, and it is accessible to all of them. However, in most cases, they report any queries, concerns, or complaints directly to the village volunteer, who then records them in the register. This is confirmed during the on-site inspection and interviews /18/.However, no major grievances were reported during the monitoring period/12/, the minor issues reported and addressed has been discussed in the MR, VVB has confirmed the same from the on-site visit. In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised PDD /B03/.

D.3. Post-registration changes

D.3.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[1]

Not applicable

D.3.2. Corrections

Not applicable

D.3.3. Changes to the start date of the crediting period

Not applicable

D.3.4. Inclusion of a monitoring plan

Not applicable

D.3.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable

D.3.6. Changes to the project design

Not applicable

D.3.7. Changes specific to afforestation and reforestation project activities

Not applicable

D.4. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	The verification team has checked the actual monitoring plan against the registered monitoring plan and monitoring methodology and applicable tools. Furthermore, the verification team has checked monitoring system by means of comparison with the information given in the monitoring plan and monitoring methodology. The monitoring plan is completely in accordance with the approved methodology /B01/ applied by the registered PDD/B03/.

D.5. Compliance of monitoring activities with the registered monitoring plan

D.5.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Document Review, Interview
Findings	CL 03 has been raised and resolved successfully. Please refer Appendix 4 of the report.
Conclusion	The following ex-ante parameters are considered:

Parameter	Value	Assessment

[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).

	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass ($f_{NRB,y}$) in percentage.	95.61%	f_{NRB} is calculated as per tool to calculate the fraction of non-renewable biomass and fixed for the entire crediting period as per the registered PDD /B03/.
	Average annual consumption of woody biomass per household before the start of the project activity ($BC_{BL,HH,y}$) in tonne/household/year	5.38	The baseline firewood consumption is as per third party survey report /10/ and fixed for the entire crediting period as per the registered PDD /B03/.
	Net calorific value of the non-renewable woody biomass that is substituted ($NCV_{biomass}$) in TJ/Tonne	0.0156	Net Calorific Value of the wood used as cooking fuel. Default value as per the applied methodology /B01/.
	Emission factor for the substitution of non-renewable woody biomass ($EF_{projected\_fossilfuel}$) in tCO_2/TJ	64.4	Emission factor for the substitution of non-renewable biomass by similar consumers. Default value as per the applied methodology /B01/.
	Number of households (biogas system) in the project activity (N_{HH})**	11,085	The parameter is fixed for the project activity and the project database with commissioning. dates are submitted to Sustain-Cert during design certification. /03/.
	The project activity includes 11,085 household biodigesters in the state of Punjab, India. The project activity is a retroactive project, wherein all the biogas digesters are fully implemented and operational. Further, PP has fixed this parameter ex-ante. However, the operational rate will be monitored ex-post. Verification team confirms that the data and parameters fixed ex ante are in compliance with the registered PDD /B03/ and monitoring plan. Please refer to the Annex 1 for assessment of each parameter.		

D.5.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	CL01, CL02, CL04, CAR02, CAR03, CAR04 and CAR05 has been raised and resolved successfully. Please refer Appendix 4 of the report.
Conclusion	The verification team confirms that the data and parameters monitored are in compliance with the registered PDD /B03/ and the monitoring plan.

Parameter	Value	Assessment
Average annual consumption of	0.103t/household/year	VVB observed that a third-party household survey /10/

	woody biomass per household in the pre project devices during the project activity, if it is found that pre project devices were not Completely displaced but continue to be used to some extent ($BC_{PJ,HH,y}$) tonne/household/year		was carried out to estimate the usage of firewood after the installation of the biogas plants. Survey was to assess the parameter in accordance to the Guidelines for sampling and surveys for CDM project activities and programmes of activities (Ver04.0, CDM-EB67-A06 GUID) issued by UNFCCC was used. Total 300 samples were surveyed. As report /10/ it was found 6% of sampled population used firewood for an average of 7 days during this monitoring period, this is due to factors such as the (winter season, habitual behavior, issue with pipeline and mass gatherings) all together. The value for the parameter is calculated using the below method; $BC_{PJ,HH,y}$ = [{($BC_{BL,HH,y}$/365) X Average No. of days of firewood consumption in the monitoring (survey results) X Total no. of household used firewood }/ Total no. of household used firewood]. During the on-site verification /18/, the Validation and Verification Body (VVB) conducted independent cross-checks, including direct household interactions, observation of cooking practices, and fuel usage patterns. These checks corroborated the survey findings, with no material discrepancies identified. Based on the alignment of the field observations with the survey

			data, the robustness of the sampling methodology, and adherence to GS requirements, the firewood usage values reported in the Monitoring report /01/ and Emission Reduction /02/ sheet are considered acceptable. Further from the onsite visit /18/ it is found that all the biogas plants were fully operational. Further, during the interviews with the end users as well as the PP's field team it is found that the plants are operational. VVB has checked the technical life of the biogas digester, and it is around 20 year/17/ and in line with PDD. As this is only the 4th year of operation compared to its technical lifetime, the operational rate seems acceptable. Therefore, the value as per survey report reported in ER sheet is considered correct.
	Number of households (biogas system) in the project activity in operational per year ($N_{HH,y}$)	11,085	The Number of households (biogas system) in the project activity is verified from the database and the registered PDD/B03/. The parameter was monitored through a third-party household survey results /09/ /10/ conducted in accordance with the UNFCCC Guidelines for Sampling and Surveys for CDM Project Activities and Programmes of Activities /B04/. The survey employed random sampling procedures to ensure representativeness of the project population. During the on-site verification /18/, the

			Validation and Verification Body (VVB) performed an acceptance sampling check by visiting 11 randomly selected households from the sampled households to perform an acceptance sampling. All 11 biogas digesters inspected were confirmed to be operational at the time of the visit. This direct observation was cross verified with user feedback, physical inspection of digester components, biogas cookstove and evidence of recent slurry discharge, thereby substantiating continuous use /10/. The third-party survey results indicated that all 300 sampled units were operational at the time of the survey, resulting in an extrapolated operational rate of 100% for the total installed capacity of 11,085 units during the monitoring period. Given that the technology employed is the Deenbandhu model—a design approved by the Ministry of New and Renewable Energy (MNRE), India—with a documented technical lifetime exceeding 20 years/17/, the absence of any non-operational units within the monitoring period, which is only the 4th year of operation, is technically plausible and consistent with expected durability and maintenance requirements for this technology type. VVB has also verified secondary literature /17/ supports that well-

			maintained Deenbandhu digesters exhibit high operational longevity and performance reliability, particularly within the first decade of deployment. Considering this is only the 4th year of operation, the corroboration between the third-party survey, on-site verification findings, and established technical benchmarks, the reported 100% operational rate is acceptable.
	SDG 3 – (Good health and well-being) Improvement in health and decrease in illness	11,085	Improvement in health and reduction in illness attributable to the project implementation were assessed through structured interviews with end users. User feedback on indoor air quality improvements resulting from biogas usage was collected during the monitoring survey/09/. As per the survey results, all 300 respondents (100% response rate) reported a positive change in health conditions. Based on this finding, it is reasonable to infer that all 11,085 biogas plant users are expected to experience similar health benefits.
	SDG 7 – (Affordable and clean energy) Access to affordable and clean energy services	11,085	The parameter was monitored through a third-party survey /09/ /10/, conducted in full accordance with UNFCCC sampling guidelines. A total of 300 were surveyed, and all biogas plants were confirmed to be operational at the time of the survey. During the on-site verification /18/, the VVB

			independently visited and inspected the surveyed households, confirming that 100% of the units were functional. The convergence of results between the third-party survey and the VVB's direct observations, confirms the acceptability of the monitoring data. The biogas plants are based on the MNRE-approved Deenbandhu model, which has a documented technical lifetime exceeding 20 years/17/. Considering that the project is in its 4th year of operation 100% operational rate is acceptable. Furthermore, preventive maintenance practices and rapid response to minor operational issues, as recorded in the maintenance logbooks and confirmed during interviews, further substantiate the continued full functionality of the installed units. Hence the same is acceptable.
	SDG 8–- Unemployment rate, by sex, age and persons with disabilities Quantitative employment and income generation	10 permanent employments. (retained) 2 training per year	Verified the employment records /11/ and confirmed that 10 permanent has been retained by the project activity. Further, team has checked the records of training programme /16/ and found 2 trainings were conducted during the monitoring period. The trainings conducted during the monitoring period to improve the skills of the local technicians, so as to improve the quality of the monitoring activities. VVB has assessed the training records including the topics

			covered during the training activity /16/. The training covers ways to increase the effectiveness and efficiency of all biogas plants, safe handling & operation of biogas plants along with Do's and Don'ts of the related to biogas plant operation. Further, VVB has interviewed the local technician related to the same and further confirmed/18/.

PP has maintained monitoring service records; grievance register and operations logbook. The end-users are aware of the grievance register, and it is accessible to all of them. However, in most cases, they report any queries, concerns, or complaints directly to the village volunteer, who then records them in the register. This is confirmed during the on-site inspection and interviews /18/. No grievance has been raised during the monitoring period (01/10/2024-31/07/2025). However, only minor operational issues were raised by the users; however, all the issues were rectified with-in 24 hours. PD has conducted regular maintenance checks of the biogas plants. The same is confirmed during the onsite interviews with the local technician and end users. Further, VVB has checked the biogas maintenance/service records/18/. It has been noted that all the issues were reported is registered in the logbook/12/. The service details of the same is also noted in the logbook. Since, the project is in its 4th year of operation and the technical lifetime of the project is more than 20 years, only minor issues like burner blockage, water accumulated in the pipelines etc are being reported. These issues can be resolved very easily. The evidence found acceptable and appropriate. There were no issues related to non- usage of biogas units.
Regular preventive maintenance of the biogas plants has been carried out by the PP. This was corroborated through on-site interviews /18/ with local technicians and end users, as well as review of the biogas maintenance/service records /12/. All reported issues were duly entered in the logbook along with corresponding service details, and evidence confirms that remedial actions were taken within 24 hours of issue reporting.

Considering that the project is only in its 4th year of operation and the technical lifetime of the Deenbandhu biogas systems exceeds 20 years, the occurrence of only minor, easily rectifiable issues is consistent with the expected operational performance of this technology type.

It is confirmed that the verification team assessed the data / information flow from the point of monitoring to emission reduction calculation and

found no gap in the same. Please refer to the Annex 2 for assessment of each parameter.

Safeguarding Principles Verification Assessment

Safeguarding Principle	As per Registered PDD	Assessment
Principle 1 – Human Rights	Project complies with national and international human rights laws; no violations or discrimination risks identified. Improves indoor air quality and reduces drudgery.	Verified through PDD /B03/, stakeholder consultations / B03/, and on-site interviews with beneficiaries during this verification. No evidence of violations or complaints. Positive impacts confirmed directly during household visits.
Principle 2 – Gender Equality	Benefits women via improved health and reduced workload; no adverse gender impacts; aligns with India's National Policy for Women 2016.	Confirmed through PDD / B03/ and interviews with female beneficiaries during onsite visit. Women reported reduced time spent collecting fuelwood and improved cooking conditions. No evidence of discrimination.
Principle 3 – Community Health, Safety and Working Conditions	Biogas use reduces indoor air pollution and related illnesses; minimal occupational health/safety risks beyond standard activities.	Verified via survey results /09/, direct field observations during onsite visit and training records for technicians /16/. No safety incidents reported during this monitoring period.
Principle 4 – Cultural Heritage	Not applicable; project does not impact physical or cultural heritage sites.	Confirmed via PDD statement /B03/ and verification site inspections showing no cultural heritage sites impact due to this project activity.
Principle 5 – Corruption	No scope for corruption; transparent agreements with beneficiaries.	Verified via review of agreements /05/, procurement procedures, and stakeholder feedback. Onsite confirmation obtained from local implementing

			partners on transparent beneficiary selection and O&M arrangements.
	Principle 6 – Labour Rights	No forced or child labour; skilled technicians employed; complies with national labour laws.	Verified through labour records /11/ and technician interviews during onsite visit. All workers observed were adults, trained, and working under safe conditions in compliance with Indian labour laws.
	Principle 7 – Land Tenure and Resource Rights	Not applicable; household biogas plants installed on users' land with full consent.	Confirmed via commissioning certificates signed by users and physical verification during onsite visit that systems are installed on household premises with user consent.
	Principle 8 – Indigenous Peoples	Not applicable; no indigenous peoples affected.	Verified through stakeholder mapping in PDD /B03/ and confirmation from local authorities during onsite visit that no indigenous communities are impacted.
	Principle 9 – Biodiversity Conservation	Positive impact via reduced firewood demand and forest conservation.	Verified via monitoring survey results /09/ and onsite interviews with end-users on reduced firewood usage at household level.
	Principle 10 – Climate Change Adaptation	Emission reductions from replacing non-renewable biomass with biogas.	Verified through monitoring data /09/, ER sheet calculations /02/, and applicability of AMS-I.E methodology /B01/. During the onsite verification it was confirmed active operation of biogas units contributing to emission reduction.

D.5.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	The project proponent has performed the sampling in accordance with the Standard for Sampling and Surveys for CDM Project Activities and Programmes of Activities /B04/ and the associated guidelines /B04/, the sampling plan for this project was established at the time of project registration and consistently applied during the monitoring period. The sampling design was based on the principle of simple random sampling, which is considered statistically appropriate in this case as the project population is homogeneous. Given this level of homogeneity, stratification was not required, and the use of simple random sampling is both methodologically sound and fully compliant with the applied methodology /B01/. The Project Proponent determined the sample size in line with the 95/10 confidence/precision requirement specified in the methodology for biannual surveys. The calculation followed the procedure outlined in paragraph 12 of Appendix 1, EB 86 Annex 4 (Guidelines for Sampling and Surveys for CDM Project Activities and Programmes of Activities, Version 4.0) /B04/. • Population size (N): 11,085 households • Expected proportion (p): 60% • Predicted sample size (n): 251 households To ensure greater statistical robustness and provide a conservative margin, the Project Proponent increased the sample size to 300 households. The verification body reviewed the sampling process and confirmed that it was conducted in full compliance with the CDM Sampling Standard (version 9) and relevant methodological requirements /B04/. In line with paragraph 26 of the CDM Sampling Standard, the verification team applied an Acceptance Sampling to cross check the results of the monitoring survey. The Project Proponent's monitoring survey /09/ /10/ served as the sampling frame. Using paragraph 39(c) of the sampling standard (version 09), the verification body calculated its own verification sample size based on: ▪ Acceptance Quality Level (AQL): 0.5% ▪ Upper Quality Level (UQL): 20% ▪ Producer's and Consumer's Risk: 10% each This resulted in a verification sub sample of 11 households, with an acceptance number (c) of zero.

Parameter	Verification approach	Population (for VVB's sample)	VVB's Sample Size
Usage and	ASP	300	11

Monitoring Survey				

The verification team conducted independent interviews /18/ and inspections of the selected 11 households. The following observations were made:

- No discrepancies were found between the Project Proponent's monitoring survey data and actual field conditions.
- All 11 systems were fully operational and consistent with reported parameters.
- Impact parameter data, as collected via the Project Proponent's survey questionnaire, was cross verified without any deviations.
- The competency of 3rd party conducted surveys was reviewed and found adequate/10/.
- The sampling and data collection methods employed by the Project Proponent were found to be technically sound and in line with accepted standards.

Given the absence of discrepant records, the verification body concludes—per §33 of the sampling standard (version 09)/B04/ that the Project Proponent's dataset is acceptable.

The verification body confirms that:

1. The sampling plan was developed in compliance with /B04/ and applied methodology /B01/ .
2. The sample size determination and proportional allocation were statistically justified and conservatively implemented.
3. The Project Proponent's monitoring survey met the 95/10 precision requirement and adhered to Guidelines for Sampling and Surveys (EB 86 Annex 4).
4. The verification body's independent acceptance sampling yielded results fully consistent with the monitoring dataset, with c = 0 discrepant records.

Therefore, the verification body accepts the Project Proponent's sampling records and monitoring results as reliable and in compliance with the applicable standards.

D.6. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	Not appliable, since there is no monitoring equipment which require calibration as per the monitoring plan. The equipment's used for the monitoring consists of reviewing the documents and on-site interviews.

D.7. Assessment of data and calculation of emission reductions or net removals

D.7.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	As per the registered PDD /B03/ and the Methodology applied /B01/, Baseline emission reductions are calculated as per equation 1 of the methodology as below: $BE_y = B_y * f_{NRB,\,y} * NCV_{biomass} * EF_{projected\_fossilfuel}$

	Where, **BE_y** = Baseline Emissions during the year y in tCO2e **B_y** = Quantity of woody biomass that is substituted or displaced in tonnes **$f_{NRB, y}$** = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass, using survey methods or government data or approved default country specific fraction of non-renewable woody biomass (fNRB) values available on the CDM website. In this case fNRB, y is fixed ex-ante and the value is 95.61%, verified from registered PDD and validation report /B03/. **$NCV_{biomass}$** = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne) **$EF_{projected\_fossilfuel}$** = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 tCO_2/TJ. By' By is determined by using option (a) paragraph 29 of the methodology as follows: "Calculated as the product of the number of households multiplied by the estimate of average annual consumption of woody biomass per household that is displaced by the project activity (tonnes/ household/year)"; $B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ Where, N_{HH} = Number of households in the project activity, number $BC_{BL,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year $BC_{PJ,HH,y}$ = If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year $BC_{BL,HH,y}$ = for the project have been considered based on previous survey conducted during the validation and fixed as ex-ante for the crediting period. To estimate a third-party survey was carried out from 11/05/2025 till 11/07/2025 to estimate the usage of firewood after the installation of the biogas plants. The frequency of the monitoring-parameter is once in every two years, PD has conducted, by reviewing the previous and current survey dates/03//04//01//10/, it is confirmed that the frequency requirement is met. Survey was conducted to assess the above parameter in accordance with the Guidelines for sampling and surveys for CDM project activities and programmes of activities (Ver04.0, CDM-EB67-A06-GUID) issued by UNFCCC was used. Total 300 samples were surveyed. As per the survey report /10/ it was found 6% of sampled population (300) used firewood for 7 days. VVB during on-site visit /18/, confirmed the same.

	Therefore, the value as per survey report reported in ER sheet is considered correct. The average annual consumption of woody biomass is estimated by survey methods to be 0. 103 tonne/household/year in case of Punjab, as per the MR /01/. Accordingly, the baseline emissions for project activity for the monitoring period from 01/10/2024-31/07/2025 is calculated to be 44,454 tCO_2e.

D.7.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	As per "AMS I.E- Switch from non-renewable biomass for thermal applications by the user, Version 12, the baseline emissions (BE_y) are calculated as: $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\_fuel}$ Where, BE_y = Baseline emissions during the year y in t CO_2e B_y = Quantity of woody biomass that is substituted or displaced in tonnes $f_{NRB,y}$ = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (fNRB-95.61%) year y that can be established as non-renewable biomass (fNRB) $NCV_{biomass}$ = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne) $EF_{projected\_fossil\ fuel}$ = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 tCO_2/TJ. By is determined by using option (a) paragraph 27 of the methodology as follows: "Calculated as the product of the number of households multiplied by the estimate of average annual consumption of woody biomass per household that is displaced by the project activity (tonnes/ household/year)"; $By = NHH \times (BCBL,HH,y - BCPJ,HH,y)$ Where, N_{HH} = Number of households in the project activity, number $BC_{BL,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year $BC_{PJ,HH,y}$ = If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year. $BC_{BL,HH,y}$ = for the project have been considered based on previous survey and publicly available reports as discussed in above section. Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (fNRB,y) is determined as per methodological tool 'Calculation of the fraction of non-renewable biomass' version 02 as follows:

	The fraction of woody biomass that can be established as non-renewable, is: f_{NRB} and it is fixed ex-ante at the time of validation for the entire crediting period. The project activity does not involve any of the above activity and hence, project emissions for the project activity is not applicable. However, while determining B_y as per equation 3 of the applied methodology, firewood consumed by pre-project devices during the project activity shall be monitored and applied ex-post. This is to be accounted. Leakage Emissions (LEy): Leakage emissions (related to the non-renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced (using 90/30 precision for a selection of samples). The following potential source of leakage shall be considered: The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project households/users that is attributable to the project activity, then By is adjusted to account for the quantified leakage. Alternatively, By is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. PP has opted default option, and By shall be adjusted with adjustment factor of 0.95 to account leakage. Emission reductions: Emission reductions are to be estimated based on the equation below: $ER_y = BEy – PE_y – LE_y$ ERy= 44,454 tCO_2e Comparison of monitored parameters with last monitoring period are as follows;

SDG	SDG Impact	Value obtained in this monitoring period	Value obtained last monitoring period
13	Emission reductions	44,454 tCO_2e	53,820 tCO_2e
7	Access to affordable and clean energy services	11,085 biogas plant users have access clean energy	11,085 biogas plant users have access to clean energy
8	Unemployment rate, by sex, age and persons with activity disabilities	10 permanents employment (retained)	10 permanents employment
8	Unemployment rate, by sex, age and persons with activity disabilities	2 training per year	2 training per year
3	Improvement in health and decrease in illness	11,085 biogas plant users have improved health conditions	11,085 biogas plant users have improved health conditions

D.7.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	According to the registered PDD /B03/, a leakage assessment is only required every two years; however, such a leakage and thus assessment is required for this monitoring period. Project Leakage Assessment Ex post surveys of users and the areas from which this woody biomass is sourced will be used to assess leakage emissions. The following potential leakage sources must be considered: non-project households/users who previously used renewable energy sources use/divert non-renewable woody biomass saved under the project activity. If the leakage assessment identifies an increase in the use of non- renewable woody biomass by non-project households/users that is attributable to project activity, By is adjusted to account for the quantified leakage. To account for leakages, By is multiplied by a net to gross adjustment factor of 0.95, in which case surveys are not required/B01. PP has opted default option, and By is adjusted with adjustment factor of 0.95 to account leakage. Therefore, the net benefit is = 46,795*0.95= 44,454 tCO_2e As per the demonstration in the registered PDD /B03/ and MR /01/, the adjustment factor of 0.95 has been accounted for leakage for the monitoring period.

D.7.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	CAR 06 has been raised and resolved successfully. Please refer Appendix 4 of the report.
Conclusion	Emission Reductions: The emission reductions in this monitoring period are: $ER_y = BE_y - PE_y – LE_y$ Where, ER_y is the total emission reductions of the project activity during the year y in tCO_2e; Bey is the baseline emissions for the project activity during the year y in tCO_2e; Pe_y is the emissions for the project activity during the year y in tCO_2e; LEy is the leakage emissions for the project activity during the year y in tCO_2e. As explained in section D.7.1 above, the resulted Baseline emissions (BEy) for the monitoring period is 44,454 tCO_2e. Similarly, as explained in section D.7.2 and section D.7.3 project emission is zero for the monitoring period. PP has opted default option, and By is adjusted with adjustment factor of 0.95 to account leakage. Hence, resulted emission reduction for the monitoring period is 44,454 tCO_2e (round-down value). The values of data and parameters which is fixed ex ante has been confirmed from the registered PDD. The data and parameters monitored including for this project activity has been confirmed from the third-party survey report/10/ and the on-site interview. Further VVB has checked the ER calculation/02/ in ER sheet and found that the values applied and calculated are correct. SDGs has been cross-checked from the third-party survey report, employment records and the on-site interview, the detailed assessment has been provided in the section D.5.2. Calculation of net benefits or direct calculation for each SDG Impacts are as follows;

SDG	SDG Impact	Baseline Estimate	Project Estimate	Net benefit
13	Emission reductions	46,795 tCO_2e	2,341tCO_2e (leakage)	44,454 tCO_2e
7	Access to affordable and clean energy services	Firewood based conventional	11,085	11,085
8	Unemployment rate, by sex, age and persons with activity disabilities	N/A	10	10 Employments
8	Unemployment rate, by sex, age and persons with activity disabilities	N/A	02	2 trainings
3	Improvement in health and decrease in illness	Illness due to smoke	11,085	11,085

D.7.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 45,328 tCO_2e and the actual emission reductions achieved for the monitoring period is 44,454 tCO_2e.

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values achieved during this monitoring period
13	45,328 tCO_2e	44,454 tCO_2e
3	Improvement in health and decrease in illness for 100% users	11,085 biogas plant users now have improved health conditions
7	100% users were using firewood which is not a Clean Source of energy	11,085 users are accessed to clean energy source.
8	10 permanent employments and 2 trainings in a year	10 permanent employments (retained), and 2 trainings in a year

The emission reduction calculations provided in the spreadsheet /03/ have been verified to be correct and in line with the registered PDD /B04/.

D.7.6. Remarks on difference from estimated value in registered PDD

Means of verification	Document Review, Interview
Findings	No findings in this section.
Conclusion	The ex-ante estimates value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 45,328 tCO_2e and the actual emission reductions achieved for the monitoring period is 44,454 tCO_2e. For SDG 13, since actual emission reduction is lower than the estimated value and hence it is acceptable to the verification team. The monitoring report /01/ provides reason for decrease in the actual emission reduction and the same was confirmed by the verification team by interviewing the representatives of PP and by reviewing the actual implementation status of the project. For other SDG parameters, PP has provided justification in the Monitoring report and assessment of the same is provided below: • SDG 3: The actual value of 11,085 biogas plant users aligns with the estimated value, which is deemed accurate and acceptable to the VVB. • SDG 7: The actual value of 11,085 biogas plant users aligns with the estimated value, which is deemed accurate and acceptable to the VVB. • SDG 8: The actual value of 10 permanent employments (retained) and 2 trainings in a year aligns with the estimated value, which is deemed accurate and acceptable to the VVB. • SDG 13: The actual value of 44,454 tCO_2e is lower than the estimated value of 45,328 tCO_2e, which is deemed appropriate and thus acceptable to the VVB.

SECTION E. Internal quality control

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The verification report shall pass a technical review before being submitted to the Gold Standard. The technical review is performed by a technical reviewer qualified in accordance with Carbon Check's qualification scheme for validation and verification.

SECTION F. Verification/Certification opinion

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Carbon Check (India) Private Ltd. has performed the 4th periodic verification of the registered GS Project Activity "Implementation of clean energy technology in rural areas of India-2 (GS 11656)".

The verification team assigned by the VVB concludes that the project activity as described in the PDD /B03/ and the Monitoring report /01/, meets all relevant requirements of the Gold Standard. The verification has been conducted in-line with the GS4GG requirements project activities.

Verification methodology and process

The Verification team confirms the contractual relationship signed on 31/07/2025 between the VVB, Carbon Check (India) Private Ltd. and the Project Developer/14/. The team assigned to the verification meets the Carbon Check's internal procedures including the UNFCCC/GS requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and Carbon Check's procedures and requirements.

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

- Reviewing the PDD /B03/, including the monitoring plan and the corresponding validation report /B03/;
- Desk review of the MR /01/ and other relevant documents including documents related to the project activities in emission reductions;
- Review of the applied monitoring methodology AMS-I.E. Switch from non-renewable biomass for thermal applications by the user - Version 12 /B01/;
- On-site inspection (10/08/2025 to 11/08/2025)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered PDD. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review and remote interviews, the verification team confirms that the project activity has resulted in the 44,454 tCO_2e emission reductions during the reported monitoring period.

This statement covers verification period from 01/10/2024-31/07/2025 (both days inclusive).

The VVB has raised 04 clarifications and 06 corrective action requests, all of which are satisfactorily closed. No FAR has been raised during this monitoring period.

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

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 44,454tCO_2e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Vintage	**ER (tCO_2e)**
01/10/2024 – 31/12/2024	13,453 tCO_2e
01/01/2025 – 31/07/2025	31,001 tCO_2e
Total for the monitoring period	44,454 tCO_2e

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
ASP	Acceptance Sampling
AQL	Acceptance Quality Level
UQL	Upper Quality Level
CER	Certified Emission Reduction
CAR	Corrective Action Request
CL	Clarification Request
CO_2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
GS	Gold Standard
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
NCV	Net calorific value
MR	Monitoring Report
OSV	On Site Visit
PE	Project Emissions
PD	Project Developer
PDD	Project Design document
PRC	Post registration change
PP	Project proponent
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VER	Voluntary Emission Reduction
VVB	Validation & verification body

Appendix 2. Competence of team members and technical reviewers

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Muhammed Suhail K

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Validator/Verifier (Trainee)	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☐ SDG Expert	☐ Expert Social aspect	☐ Expert Environmental Aspect	☐ Health Expert
☒ Regional Expert for India		☒ FOEN Approved Technical Expert	☐ FOEN Approved Quality officer

in the following Technical Areas:

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

Issue Date	Expiry Date
06th February 2025	31st December 2025

Mr. Vikash Kumar Singh
Director - Compliance

Revision History of the document:

Revision Date	Summary of changes
Jan 2025[1]	Revised as per latest organogram
Feb 2025	Revised to include FOEN requirements

CCIPL_FM 7.9 Certificate of Competency_V8.0_05022025

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

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Vijay Mathew

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☒ Technical Reviewer	☐ Validator/Verifier (Trainee)	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☒ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG Expert	☒ Expert Social aspect	☒ Expert Environmental Aspect	☐ Health Expert
☒ Regional Expert for India		☒ FOEN Approved Technical Expert	☐ FOEN Approved Quality officer

in the following Technical Areas:

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

Issue Date

06th February 2025

Expiry Date

31st December 2025

Mr. Vikash Kumar Singh
Director - Compliance

Revision History of the document:

Revision Date	Summary of changes
Jan 2025[1]	Revised as per latest organogram
Feb 2025	Revised to include FOEN requirements

CCIPL_FM 7.9 Certificate of Competency_V8.0_05022025

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

Carbon Check (India) Private Limited

Certificate of Competency

Mr. S Ranganathan

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☒ Technical Reviewer	☐ Validator/Verifier (Trainee)	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☒ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG Expert	☒ Expert Social aspect	☒ Expert Environmental Aspect	☐ Health Expert
☒ Regional Expert for India		☐ FOEN Approved Technical Expert	☐ FOEN Approved Quality officer

in the following Technical Areas:

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

Issue Date

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Expiry Date

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Mr. Vikash Kumar Singh
Director - Compliance

Revision History of the document:

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CCIPL_FM 7.9 Certificate of Competency_V8.0_05022025

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

Appendix 3. Documents reviewed or referenced

S. No.	Document
/01/	Monitoring Report (Version 01 dated 03/08/2025) Monitoring Report (Version 02 dated 21/08/2025) Monitoring Report (Version 03 dated 25/11/2025)
/02/	Emission reductions sheet - GS11656-4thMP_04-08-25
/03/	Sustaincert's review report (FVR) for 1st , 2nd and 3rd performance certification 1st MP- version 5 dated 23/02/2023 2nd MP- version 3 dated 15/12/2023 3rd MP- version 3 dated 16/01/2025
/04/	Monitoring report for Monitoring period 1st , 2nd and 3rd 1st MP- version 5 dated 22/02/2023 2nd MP- version 3 dated 23/11/2023 3rd MP- version 3 dated 18/12/2024
/05/	Monitoring Survey Forms for the survey conducted
/06/	Evidence for the random sample generator for the parameters opted for sampling/survey and Initial Sample size calculation sheet along with actual samples conducted and the reliability assessment.
/07/	Evidence for unique identification number of Biogas plant under the project/End user agreement
/08/	Database
/09/	Records of monitoring Survey of the project and Biogas user survey conducted from 11/05/2025 till 11/07/2025
/10/	Third party survey report conducted from 11/05/2025 till 11/07/2025
/11/	Employment records from 01/10/2024-31/07/2025
/12/	The grievance registers applicable for the monitoring period
/13/	Monitoring log books/Biogas service records from 01/10/2024-31/07/2025
/14/	Verification contract between VVB & PP dated 31/07/2025
/15/	Biogas Service Records from 01/10/2024-31/07/2025
/16/	Training records from 01/10/2024-31/07/2025 Topics covered: 1. Installation and Maintenance of biogas plants 2. User Training and Behaviour Change 3. Monitoring, Reporting, and Verification (MRV) 4. Data Entry and Quality Control

	5. Feedback, Grievance Redress, and After-Sales Support Mechanisms for addressing user concerns and improving satisfaction. Trouble shooting and repairing of the biogas plant Feedback round and areas of improvement
/17/	Article: The Selection of Biogas Plants in the Indian Context Based on Performability—An Analytic Hierarchy Process and Weighted Aggregated Sum Product Assessment Approach dated 02/04/2024 https://www.mdpi.com/2673-3994/5/2/13
/18/	On-site inspection and interviews- 10/08/2025 to 11/08/2025

Background Documents

Ref no.	Reference Document
/B01/	AMS-I.E. Switch from non-renewable biomass for thermal applications by the user - Version 12
/B02/	1. Gold Standard Principles and Requirements version 1.2, dated 24/10/2019 2. Gold Standard Programme of Activity Requirements version 1.2, dated 24/10/2019 3. GS Validation & Verification Body Requirements version 3.0, dated 12/11/2024 4. Community Services Activity Requirements (version 1.1) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/
/B03/	1. Registered PDD and corresponding Validation Report
/B04/	Standards a) CDM Sampling Standard, version 09.0 b) Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0. c) CDM validation and verification standard for project activities, version 04.0
/B05/	IPCC 2006, volume 2, chapter 1
/B06/	Site Visit and Remote Audit Requirements and Procedures, version 2.0 dated 30.05.2023
/B07/	GS Validation and Verification Standard V2.0 dated 12/11/2024

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

Table 1. FARs from this verification

FAR ID	**0**	**Section no.**		**Date:**
Description of CAR				
NA				
PP response				**Date:**
Documentation provided by the CME				
DOE assessment				**Date:**

Table 2. CARs from this verification

CAR ID	01	**Section no.**	D.2	**Date:** 13/08/2025
Description of CAR				
PD shall provide the correct estimated annual average Emission reductions as per the registered PDD in the section E.2 and E.5.1 of the MR.				
PP response				**Date: 19/08/2025**
Section E.2 and E.5.1 of the MR has been revised now.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025)				
VVB assessment				**Date: 21/08/2025**
The PP has revised the respective sections of the MR; the verification team has reviewed the changes and found to be appropriate. Hence the finding CAR 01 is closed satisfactorily.				

CAR ID	02	**Section no.**	D.2	**Date:** 13/08/2025
Description of CAR				
PP is requested to confirm in Section B.1 of the Monitoring Report (MR) whether all units were operational during this Monitoring Period.				
PP response				**Date: 19/08/2025**
Section B.1 of MR has been revised now.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025)				
VVB assessment				**Date: 21/08/2025**
PD has now revised the section B.1 of MR to confirm that all the biogas units were operational during the monitoring period, VT has confirmed the same by reviewing the survey results and the onsite interviews. Hence CAR 02 is closed.				

CAR ID	03	Section no.	MR	Date: 13/08/2025
Description of CAR				
Actual values achieved during this monitoring period provided in the section D.3, E.5 and E.5.1 is not correct, PD shall correct the same.				
PP response				**Date: 19/08/2025**
Values achieved for this monitoring period has been provided correctly in section D.3, E.5 and E.5.1				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025)				
VVB assessment				**Date: 21/08/2025**
The PP has revised the respective sections of the MR; the verification team has reviewed the changes and found to be appropriate. Hence the finding CAR 03 is closed satisfactorily.				

CAR ID	04	Section no.	MR	Date: 13/08/2025
Description of CAR				
PD shall provide the dates of training provided in table 1 and section D.2 of the MR.				
PP response				**Date: 19/08/2025**
Two trainings per year were conducted on 21st January 2025 and 10th June 2025 and now been added in the Section D.2 and table 1 of MR.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025)				
VVB assessment				**Date: 21/08/2025**
The PP has revised the respective section D.2 of the MR; the verification team has reviewed the changes and found to be appropriate. Hence the finding CAR 04 is closed satisfactorily.				

CAR ID	05	Section no.	MR	Date: 13/08/2025
Description of CAR				
The value provided for the parameter $BC_{PJ,HH,y}$ in the section D.2 is not consistent with the ER sheet, PD shall correct the same.				
PP response				**Date: 19/082025**
The value for the parameter $BC_{PJ,HH,y}$ in the section D.2 is consistent with ER sheet now.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025) and corresponding ER sheet to MR.				
VVB assessment				**Date: 21/08/2025**

The PP has revised the section D.2 of the MR; the verification team has reviewed the changes and found to be appropriate. Hence the finding CAR 05 is closed satisfactorily.

CAR ID	06	Section no.	MR	Date: 13/08/2025
Description of CAR				
Baseline estimate provided in the section D.3 of the MR is not correct, PD shall provide the same. Further PD shall demonstrate the baseline estimate for this monitoring period in the ER sheet.				
PP response				**Date: 19/08/2025**
ER sheet is now consist the Baseline estimation for this monitoring period.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025) and corresponding ER sheet to MR.				
VVB assessment				**Date: 21/08/2025**
The PP has revised the section D.3 of the MR; the verification team has reviewed the changes and found to be appropriate. Hence the finding CAR 06 is closed satisfactorily.				

Table 3. CL from this verification

CL ID	01	Section no.	MR	Date: 13/08/2025
Description of CL				
PP is requested to provide the following documents. 1.Monitoring survey report. 2. Employment records & Salary slips 3. Biogas Service Records 4. Third party survey report 5. Evidence of Carbon Credits waiver 6. Monitoring logbooks 7. Evidence for the random sample generator for the parameters opted for sampling/survey 8. SDG impact tool				
PP response				**Date: 19/08/2025**
Documents listed below are provided in a folder now. 1 .Monitoring survey report. 2. Employment records & Salary slips 3. Biogas Service Records 4. Third party survey report 5. Evidence of Carbon Credits waiver				

6. Monitoring logbooks

7. Evidence for the random sample generator for the parameters opted for sampling/survey

8. SDG impact tool

Documentation provided by PP	
Supporting documents Folder	
VVB assessment	**Date: 21/08/2025**
PD has provided all the above requested documents, the documents found to be appropriate. Hence CL 01 is closed.	

CL ID	02	**Section no.**	MR	**Date:** 13/08/2025
Description of CL				
PD shall clarify whether the employments is generated or retained during this monitoring period in section D.2 and D.3 of the MR. Further PD shall submit all the employment records.				
PP response				**Date: 19/08/2025**
We have retained all 10 Employees for this monitoring period. Section D.2 and D.3 has been revised now and PD has submitted all the employment records now.				
Documentation provided by PP				
Monitoring Report (Version 02 dated 21/08/2025) supporting documents				
VVB assessment				**Date: 21/08/2025**
The PD has clarified that employment opportunities include both permanent staff and retained workers, with permanent staff ensuring operational continuity and retained workers supporting seasonal or activity-specific needs. This explanation has been incorporated into Sections D.2 and D.3 of the Monitoring Report. Hence CL 02 is closed.				

CL ID	03	**Section no.**	MR	**Date:** 13/08/2025
Description of CL				
PD shall justify the application of CDM Tool 30 to calculate the emission reductions in line with the fNRB Application Rule Update.				
PP response				**Date: 19/08/2025**
As per the Gold Standard update titled “fNRB application for GS4GG certification” issued on 24 April 2025, the fNRB values calculated using either the methodology’s prescribed approach or the CDM Tool 30 (Calculation of the fraction of non-renewable biomass) for a design-certified activity will remain valid only until 31 December 2025 for GS4GG certification. The Project Developer submitted the design certification application well before this deadline i.e., 25/11/2022; therefore, the use of CDM Tool 30 is still applicable in this case.				
Documentation provided by PP				
VVB assessment				**Date: 21/08/2025**
The justification provided by the PP regarding the use of Tool 30 found appropriate and hence the finding CL 03 is closed.				

CL ID	04	Section no.	D.5.2	Date: 13/08/2025
Description of CL				
PD to clarify as to how the response related to pipeline issues apart from habitual usage has been accounted for the biogas plant usage and corresponding emission reduction calculation.				
PP response				**Date: 19/08/2025**
Parameter BCPJ,HHY annual average consumption of woody biomass per household in the project devices, includes all the reasons for firewood usage in the post project scenario due to various reasons via; winter season, habitual behaviour, mass gathering, issue with pipeline and ERs are calculated accordingly in this monitoring period. Issues such as water accumulation in the pipeline encountered during the monitoring period, primarily involved temporary blockages caused by water accumulation within the pipeline and is not major issue. These blockages were promptly addressed and typically resolved within a few hours to, at most, one day with cleaning and restoration of the pipeline ensuring minimal disruption to biogas flow. Issues such as habitual behaviour is due to previous history of being completely reliant on firewood for cooking purpose and is being controlled by regular awareness and monitoring checks.				
Documentation provided by PP				
VVB assessment				**Date: 21/08/2025**
PD has accounted the issues from the pipeline in the ER calculation, from the survey results, It was found 6% of the sample population for 7 days in a year due to factors such as temporary pipeline disruptions, plant maintenance, or user-specific contingencies all together. Issues with pipelines are due to water accumulation in the pipeline encountered during the monitoring period, this is due to primarily involved temporary blockages caused by water accumulation within the pipeline and is not major issue. These blockages were promptly addressed and typically resolved within a few hours to, at most, one day with cleaning and restoration of the pipeline ensuring minimal disruption to biogas flow. Issues such as habitual behaviour are due to previous history of being completely reliant on firewood for cooking purpose and is being controlled by regular awareness and monitoring checks, this has been confirmed during the onsite interviews. All factors contributing to firewood usage have been thoroughly considered and accurately accounted for in the Emission Reduction (ER) calculation sheet under the “BCPJhhyy”, VVB has checked the calculation and found to be appropriate. Hence CL 04 is closed.				

Annex 1: Assessment of data and parameters fixed ex-ante at the time of validation

Relevant SDG Indicator	SDG 13, Climate action
Parameter	N_{HH}
Data unit	Number
Default values used	11,085
Purpose of data	Estimation of Baseline
Source of verification of the source	Project Proponent's project database

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$BC_{BL,HH,y}$
Data unit	tonnes/household/year
Default values used	5.38
Purpose of data	Estimation of Baseline
Source of verification of the source	Baseline survey

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$f_{NRB,y}$
Data unit	Percentage
Default values used	95.61%
Purpose of data	Estimation of Baseline
Source of verification of the source	Calculated

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$NCV_{biomass}$
Data unit	TJ/tonne
Default values used	0.0156
Purpose of data	Calculation of Baseline emissions
Source of verification of the source	IPCC default value for wood/B05/

Relevant SDG Indicator	SDG 13, Climate action
Parameter	$EF_{projected\_fossilfuel}$
Data unit	tCO2/TJ
Default values used	64.4
Purpose of data	Estimation of Baseline
Source of verification of the source	Default value from the methodology, AMS-I.E

Annex 2: Assessment of data and parameters monitored

Monitoring Parameter Requirement	**Assessment/ Observation by the VVB**
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 "Amount of CO2e emissions reduced by the project per year"
Data / Parameter: **(as in monitoring plan of PDD):**	Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent. ($BC_{PJ,HH,y}$)

Unit	tonnes/household/year
Measuring frequency/Time Interval:	At least once in every two years.
Reported value	0.103
Verified Source of Data	Value obtained from monitoring survey of samples /09/ VVB has followed the CDM standard i.e. Sampling and surveys for CDM project activities and programmes of activities version 09 for performing the acceptance sampling. Applying paragraph 39 (c) of the sampling standard, version 09, a sample size of 11 households was chosen (with no discrepant records). A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk and consumer risk of 10 % each in determining the VVBs sample size. VVB has interviewed 11 samples from the monitoring survey done by Project Proponent. During the acceptance sampling process VVB has checked the operations of the biogas plant as well as interviewed the end users as well as the PP's field team. During the onsite visit it is found that all the biogas plants were fully operational. Further, during the interviews with the end users as well as the PP's field team it is found that the plants are operational. VVB has checked the technical life of the biogas digester, and it is around 20 year and in line with PDD. As this is only the 4th year of operation compared to its technical lifetime, the operational rate seems acceptable. Further, VVB has verified the grievance register and found that there were some minor technical issues and the same were reported and rectified as mentioned in section G.1 of the MR. Further, VVB has crosscheck biogas services records and same was cross verified during the onsite visit with the end-users and found regular maintenance are being carried out for the sustenance of the project activity. During the maintenance time a few of the end users were using wood. The same is mentioned in the monitoring survey. VVB has confirmed these details during the interviews with the end users; and found in line with the monitoring results.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most	NA

conservative assumption theoretically possible been applied or has a request for deviation been approved?	

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 Indicator 13.2.1 "Amount of CO2e emissions reduced by the project per year"
Data / Parameter: **(as in monitoring plan of PDD):**	Number of households (biogas system) in the project activity in operational per year (N_{HH})
Unit	Number
Measuring frequency/Time Interval:	At least once in every two years.
Reported value	11,085
Verified Source of Data	Value obtained from Project Proponent's project database and monitoring survey of samples /09/. VVB has followed the CDM standard i.e. Sampling and surveys for CDM project activities and programmes of activities version 09 for performing the acceptance sampling. Applying paragraph 39 (c) of the sampling standard, version 09, a sample size of 11 households was chosen (with no discrepant records). A sample size of 11 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk and consumer risk of 10 % each in determining the VVBs sample size. VVB has interviewed 11 samples from the monitoring survey done by Project Proponent. During the acceptance sampling process VVB has checked the operations of the biogas plant as well as interviewed the end users as well as the PP's field team. During the onsite visit VVB has physical visited and checked all the 11-biogas plant and found that all the biogas plants were fully operational. Further, during the interviews with the end users as well as the PP's field team it is found that the plants are operational. VVB has checked the technical life of the biogas digester, and it is around 20 year and in line with PDD. As this is only the 4th year of operation compared to its technical lifetime, the operational rate seems acceptable.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.

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

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 08
Data / Parameter: **(as in monitoring plan of PDD):**	Unemployment rate, by sex, age and persons with disabilities
Unit	Number
Measuring frequency/Time Interval:	Annual
Reported value	2
Verified Source of Data	Value obtained from records of training programme /04/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. VVB has cross verified the training provided to the local technical staff related to the operation and maintenance/04/. PD has conducted 2 trainings during the monitoring period to improve the skills of the local technicians, to improve the quality of the monitoring activities. VVB has assessed the training records including the topics covered during the training activity. /04/. The same is also confirmed during the onsite interviews with the local technical staff/16/.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 08
Data / Parameter: **(as in monitoring plan of PDD):**	Quantitative employment and income generation (8.5.2)
Unit	Number

Measuring frequency/Time Interval:	Annual
Reported value	10 (permanent) (retained)
Verified Source of Data	Value obtained from employment records /11/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place. VVB has checked the employment records and found that a total of 10 permanent employment is retained. Further, VVB has crosschecked the salary slips paid to the employees/11/. VVB during the onsite interview
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	**Assessment/ Observation by the VVB**
Relevant SDG Indicator	SDG 7
Data / Parameter: (as in monitoring plan of PDD):	Access to affordable and clean energy services (7.1.2)
Unit	Number
Measuring frequency/Time Interval:	At least once in two years
Reported value	11,085
Verified Source of Data	Value obtained from Biogas user survey /09/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in	NA

accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 3
Data / Parameter: **(as in monitoring plan of PDD):**	Improvement in health and decrease in illness (3.9.1)
Unit	Number
Measuring frequency/Time Interval:	At least once in two years
Reported value	11,085
Verified Source of Data	Value obtained from Biogas user survey /09/.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA