



**Verification and certification report form for
Gold Standard project activities**

BASIC INFORMATION	
Title and GS reference number of the project activity	Installation of Household Biogas plants in India (GS 11437)
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
Version number of the verification and certification report	01
Completion date of the verification and certification report	29/08/2024
Monitoring period number and duration of this monitoring period	03 21/07/2023-20/07/2024 (inclusive of both days)
Version number of the monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	23/11/2020 to 22/11/2025
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	36,835 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	35,428 tCO ₂ e
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

Priya Suman

Priya Suman, Compliance Officer

SECTION A. Executive summary

Carbon Check (India) Private Ltd. (CCIPL) is performing the third periodic verification of the GS project "Installation of Household Biogas plants in India" (GS project id: GS 11437) for the period 21/07/2023- 20/07/2024 (inclusive of both the dates). The project activity involves bundling of 7,200 household biogas plants in the state of Punjab, India, with capacities ranging from 4m³ to 6m³. All 7,200 plants are commissioned in between 23rd November, 2020 and 05th November, 2021.

According to the PDD /B03/ & MR /01/, the project activity " Installation of Household Biogas plants in India" 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 water. 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 CERs. 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 "Installation of Household Biogas plants in India" in the host country "India" for the period 21/07/2023 to 20/07/2024 (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. CCIPL'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 21/07/2023 – 20/07/2024 (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 proponent’s.

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 /02/, 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 (tCO₂e)
21/07/2023 – 31/12/2023	15,789 tCO ₂ e
01/01/2023 – 20/07/2024	19,639 tCO ₂ e
Total for the monitoring period	35,428 tCO₂e

CC IPL as a Validation & verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the attached 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 /	IR	Suhail K	Muhammed	CC IPL	X	X	X	X
2.	Verifier / Technical Expert	IR	Dimri	Anubhav	CC IPL	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	IR	C	Indumathi	CC IPL
2.	Approver	IR	Suman	Priya	CC IPL

Muhammed Suhail K: He is qualified as Team Leader /Technical Expert in TA 1.2 and 3.1 and involved in various validations and verifications under VCS, GCC and Gold Standard (GS) projects. He has also attended Several Gold Standard DOE webinar training courses including training on GS4GG. He has completed ISO 14064-1, 14064-2 and 14064-3 training successfully. He holds a Bachelor of Science degree in Environment and water management from University of Calicut and Master of Science degree in Environmental Science and technology from the Central University of Punjab.

Anubhav Dimri: is an appointed Team Leader. He holds a Post Graduate Diploma in Industrial Safety and Environmental Management. He is a trained GHG Lead Auditor. He is participated and passed 5 days ISO 50001 Lead Auditor (UNIDO sponsored) training course. He has experience in the field of Carbon Offsets both in the regulatory and voluntary front, including project validation. He has participated in GS, VCS and CDM validations and verifications. He has been involved in verification/validation of GS projects with reference numbers: GS 411, GS 916, GS 1231, GS 1029, GS 1030, GS 1031, GS 1385, GS 2094, GS 1162, GS 1352, GS 1353, GS 2437, GS 2718, GS 2722. He has also been involved in more than 100 CDM projects/programme of activities submitted to UNFCCC for Request for Registration/Inclusion/Request for Issuance. He has also worked on a number of VCS projects. He has also attended several Gold Standard VVB webinar trainings and GS4GG trainings. He has also undergone training for ISO 9001, GHG verifier training, and technical area 1.2 training. He is qualified as technical expert for TA 1.1, 1.2, 3.1,8.1, 13.2, 14.1, 15.1, 16.1 and 13.1 under CDM SS/TA categorization.

Indumathi C: She is appointed Team Leader /Technical Expert for technical area TA 1.1, 1.2,3.1,13.1 & 13.2 and Technical Reviewer. She has actively been involved in the validation and verification or internal technical review of more than 200 GHG offset projects including projects with SDG components. She is having more than 13 years of experience, she is certified Energy Manager, Bureau of Energy Efficiency, Govt. of India. She carried out technical reviews for climate change mitigation projects under different carbon credit mechanisms (UNFCCC, Gold Standard and Voluntary Carbon Standard) for various sectors like renewable energy (solar, wind, hydro, biomass), energy efficiency (cook stoves) and waste to energy (biogas).

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 1 below.

C.2. On-site inspection

Physical on-site inspection has been performed and the Team leader (who is also the technical and host country expert) has conducted the on-site inspection.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
/01/	Garg	Shivani	Greneity Infocom Services	08/08/2024 & 09/08/2024	Project Design Organisation background Project Implementation plan Project start date and Project Location Project background information Baselinesurveys, 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	Anubhav Dimri & Muhammed Suhail K
/02/	Sharma	Kavita	Greneity Infocom Services	08/08/2024 & 09/08/2024	Project Implementation and operation. Grievance handling. Maintenance	Anubhav Dimri & Muhammed Suhail K
/03/	Sharma	Arjun	Greneity Infocom Services	08/08/2024 & 09/08/2024	Project Implementation and operation. Grievance handling. Maintenance	Anubhav Dimri & Muhammed Suhail K

					Monitoring plan	
/04/	Singh	Gurdial	PB/DMSS/B AR/6/1480	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/05/	Singh	Baldev	PB/DMSS/B AR/6/1102	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/06/	Singh	Ram	PB/DMSS/B AR/6/	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/07/	Singh	Utam	PB/DMSS/B AR/6/140	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/08/	Singh	Balbir	PB/DMSS/B AR/6/287	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/09/	Singh	Mehal	PB/DMSS/B AR/6/1505	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/10/	Singh	Bant	PB/DMSS/B AR/6/312	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/11/	Singh	Bakhsish	PB/DMSS/B AR/6/142	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/12/	Singh	Jagir	PB/DMSS/B AR/6/1101	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/13/	Singh	Chanan	PB/DMSS/B AR/6/22	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K
/14/	Singh	Kasmeer	PB/DMSS/B AR/6/89	08/08/2024 & 09/08/2024	Monitoring Surveys	Anubhav Dimri & Muhammed Suhail K

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 proponent. had applied sampling approach to the monitoring survey /09/, conducted by the representatives of project proponent. 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 DOE's sample size Acceptance number (c) thus determined for the sample is 0. However, DOE interviewed 11 samples from the baseline survey done by project proponent's.

The information provided in the monitoring survey /10/, has been cross checked during the Onsite visit. As a part of acceptance sampling, the Verification team could confirm the monitoring survey data /09/ 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 01 clarifications (CLs) and 04 corrective action requests (CARs) and satisfactorily closed.

SECTION D. Verification findings

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

Not applicable

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

Means of verification	Document Review, Interview
Findings	CAR 01 and CAR 02 has been raised and resolved successfully. Please refer Appendix 4 below.
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 23/11/2020 (commissioning of first biogas plant) which is confirmed from the registered PDD /B03/ and validation report /B03/. The Project activity involves bundling of 7,200 plants installed in rural areas of Punjab installed between 23rd November 2020 to 05th November 2021, constructed & maintained by Dhaneshwari Mahila Sewa Sansthan. The project boundary in the registered PDD /B03/ is in line with the actual project boundary.

CC IPL 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 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 21/07/2023 to 20/07/2024 has been taken into consideration.

Verification team based on review of MR /01/ and Registered PDD, and corresponding Validation Report /B03/, confirms that the households/end users relinquish their right of carbon credits. Verification has confirmed that rights transfer in the lieu of free operation and maintenance of the plant from the registered PDD and validation report/B03/. 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 /05/.

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 confirms that:

- a) The project activity is implemented as per registered PDD/B03/.
- b) The actual operation of the proposed CDM 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 CC IPL based on review of records and on-site interviews confirms that a robust and effective grievance addressal

	<p>mechanism is in place and however, no grievances were reported during the monitoring period/12/.</p> <p>In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised PDD /B04/.</p>
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D.3. Post-registration changes

D.3.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

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	--
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
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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).

Findings	--
Conclusion	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, CAR 03 and CAR 04 has been raised and resolved successfully. Please refer Appendix 4 below.
Conclusion	<p>The verification team confirms that the data and parameters monitored are in compliance with the registered PDD /B04/ and the monitoring plan.</p> <p>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</p>

D.5.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	--
Conclusion	<p>According to the standard for sampling and survey /B04/ and related guidelines /B04/ the sampling plan was determined at the time of project registration and applied during the monitoring. Sampling method: Simple random sampling method is adopted as the target population is homogeneous. The sample size is determined by the requirement to achieve 95/10 precision, in line with the methodology for bi-annual survey. Sampling approaches may follow the Guideline "Sampling and surveys for CDM project activities and programme of activities" for calculation of sample size. Data to be collected: Number of project devices of type i and operating in year y. Implementation plan: Annual or biennial. Actual implementation: - Sampling method: The sample size included all households and was randomly sampled from a list of all the project biogas system in the project for each state separately. The target population is the 7,200 during the monitoring period. The sampling frame is homogenous within itself, with respect to service level, established ex-ante baseline and user characteristics.</p> <p>PD has performed simple random sampling in the total population. Since, the population is homogenous as the targeted population belongs to the same economical section, same technology is used throughout the project (i.e. Deenbandhu model), the same Feed is used in the biodigesters (i.e. cow dung) and End use of the biogas is same i.e. cooking; the use of simple random sampling is acceptable. Further, PD has selected 300 samples following the guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4). The samples are randomly selected using the random sample generator. Further, VVB has checked the sampling process and the found that the same is performed in line with the CDM sampling standard (version 9).</p> <p>PP has determined target sample number to be 300 as below: The total sample size has been derived using equation para 12 of appendix 1, EB 86 Annex 4, Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0. /B04/. The expected parameter values (mean, standard deviation and proportion) have been taken as per para 12 of appendix 1, EB 86 Annex 4 /B04/. Total Population (N) is 7,200 expected proportion is taken 60% and accordingly, sample size (n) come out to be 248. However, on a conservative note PP has opted to perform survey in 300 sample households.</p>

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 /B03/. 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 proponent. had applied sampling approach to the monitoring survey /10/, conducted by the representatives of project proponent.. 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 DOE's sample size Acceptance number (c) thus determined for the sample is 0. However, DOE interviewed 11 samples from the baseline survey done by project proponent.s.

The information provided in the monitoring survey /10/, 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/.

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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.

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

Means of verification	Document Review, Interview
Findings	-

Conclusion	Not applicable, 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.
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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	--
Conclusion	<p>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: $BE_y = B_y * f_{NRB, y} * NCV_{biomass} * EF_{projected_fossilfuel}$</p> <p>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 to be Punjab verified from registered PDD and validation report /B03/.</p> <p>NCV_{biomass} = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)</p> <p>EF_{projected_fossilfuel} = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 tCO₂/TJ.</p> <p>By' By is determined by using option (a) paragraph 29 of the methodology as follows:</p> <p>“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)”;</p> $B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ <p>Where,</p> <p>N_{HH} = Number of households in the project activity, number</p> <p>BC_{BL,y} = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year</p> <p>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</p> <p>BC_{BL,HH,y} = for the project have been considered based on previous survey and publicly available reports as discussed in above section.</p> <p>The average annual consumption of woody biomass is estimated by survey methods to be 0.147 tonne/household/year in case of Punjab, as per the MR /01/, /02/. Accordingly, the baseline emissions for project activity for the monitoring period from 21/07/2023 to 20/07/2024 is calculated to be 35,428 tCO₂e.</p>

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

Means of verification	Document Review, Interview
Findings	--
Conclusion	<p>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:</p> $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$ <p>Where, BE_y = Baseline emissions during the year y in t CO₂e 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) $NCV_{biomass}$ = 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 tCO₂/TJ.</p> <p>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)”;</p> $B_y = NHH \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ <p>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.</p> <p>$BC_{BL,HH,y}$ = 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:</p> <p>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.</p> <p>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.</p>

	<p>Leakage Emissions (LE_y): 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 B_y is adjusted to account for the quantified leakage. Alternatively, B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.</p> <p>PP has opted default option, and B_y shall be adjusted with adjustment factor of 0.95 to account leakage.</p> <p>Emission reductions: Emission reductions are to be estimated based on the equation below:</p> $ER_y = BE_y - PE_y - LE_y$ $ER_y = 35,428 \text{ tCO}_2e$
--	---

D.7.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	-
Conclusion	<p>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.</p> <p>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, B_y is adjusted to account for the quantified leakage. To account for leakages, B_y is multiplied by a net to gross adjustment factor of 0.95, in which case surveys are not required.</p> <p>PP has opted default option, and B_y is adjusted with adjustment factor of 0.95 to account leakage.</p> <p>Therefore, the net benefit is = 37,293* 0.95 = 35,428 tCO₂e</p> <p>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.</p>

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

Means of verification	Document Review, Interview
Findings	CAR 02 has been raised and resolved successfully. Please refer Appendix 4 below.
Conclusion	<p>Emission Reductions: The emission reductions in this monitoring period are: $ER_y = BE_y - PE_y - LE_y$</p> <p>Where, ER_y is the total emission reductions of the project activity during the year y in tCO₂e; BE_y is the baseline emissions for the project activity during the year y in tCO₂e; PE_y is the emissions for the project activity during the year y in tCO₂e; LE_y is the leakage emissions for the project activity during the year y in tCO₂e.</p> <p>As explained in section D.7.1 above, the resulted Baseline emissions (BE_y) for the monitoring period is 35,428 tCO₂e. Similarly, as explained in section D.7.2 and section D.7.3 project emission is zero for the monitoring period. Hence, resulted emission reduction for the monitoring period is 35,428 tCO₂e (round-down value).</p>

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	--															
Conclusion	<p>The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 36,735 tCO₂e and the actual emission reductions achieved for the monitoring period is 35,428 tCO₂e.</p> <table border="1" data-bbox="507 1283 1441 1937"> <thead> <tr> <th>SDG</th> <th>Values estimated in ex ante calculation of approved PDD</th> <th>Actual values achieved during this monitoring period</th> </tr> </thead> <tbody> <tr> <td>13</td> <td>36,835 tCO₂e</td> <td>35,428 tCO₂e</td> </tr> <tr> <td>3</td> <td>Improvement in health and decrease in illness for 100% users</td> <td>7,200 biogas plant users now have improved health conditions</td> </tr> <tr> <td>7</td> <td>100% users were using firewood which is not a Clean Source of energy</td> <td>7,200 users are accessed to clean energy source.</td> </tr> <tr> <td>8</td> <td>10 permanent employments 15 contractual employments and 2 trainings in a year</td> <td>10 permanent employments, 15 contractual employments and 2 trainings in a year</td> </tr> </tbody> </table> <p>The emission reduction calculations provided in the spreadsheet /03/ have been verified to be correct and in line with the registered PDD /B04/.</p>	SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period	13	36,835 tCO ₂ e	35,428 tCO ₂ e	3	Improvement in health and decrease in illness for 100% users	7,200 biogas plant users now have improved health conditions	7	100% users were using firewood which is not a Clean Source of energy	7,200 users are accessed to clean energy source.	8	10 permanent employments 15 contractual employments and 2 trainings in a year	10 permanent employments, 15 contractual employments and 2 trainings in a year
SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period														
13	36,835 tCO ₂ e	35,428 tCO ₂ e														
3	Improvement in health and decrease in illness for 100% users	7,200 biogas plant users now have improved health conditions														
7	100% users were using firewood which is not a Clean Source of energy	7,200 users are accessed to clean energy source.														
8	10 permanent employments 15 contractual employments and 2 trainings in a year	10 permanent employments, 15 contractual employments and 2 trainings in a year														

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

Means of verification	Document Review, Interview
Findings	--
Conclusion	<p>The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B03/ is 36,735 tCO₂e and the actual emission reductions achieved for the monitoring period is 35,428 tCO₂e. 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.</p> <p>For other SDG parameters, PP has provided justification in the Monitoring report and assessment of the same is provided below:</p> <ul style="list-style-type: none">• SDG 3: The actual value is same as the estimated value, which is deemed appropriate and thus acceptable to the VVB.• SDG 7: The actual value is higher than the estimated value, which is deemed appropriate and thus acceptable to the VVB.• SDG 8: The actual value is same as the estimated value, due to higher number of personnel hired for distribution and monitoring compared to the ex-ante estimates.• SDG 13: The actual value is lower than the estimated value, which is deemed appropriate and thus acceptable to the VVB.

SECTION E. Internal quality control

>>

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 CCIPL's qualification scheme for validation and verification.

SECTION F. Verification/Certification opinion

>>

Carbon Check (India) Private Ltd. (CCIPL) has performed the 3rd periodic verification of the registered GS Project Activity "Installation of Household Biogas plants in India (GS 11437)".

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 /14/ between the VVB, Carbon Check (India) Private Ltd. and the Project proponent.. The team assigned to the verification meets the CCIPL'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 CCIPL'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 (08/08/2024 & 09/08/2024)
- 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 35,428 tCO₂e emission reductions during the reported monitoring period.

This statement covers verification period from 21/07/2023 – 20/07/2024 (inclusive).

The VVB has raised 01 clarifications and 04 corrective action requests, all of which are satisfactorily closed.

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 35,428 tCO₂e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Vintage	ER (tCO₂e)
21/07/2023 – 31/12/2023	15,789 tCO ₂ e
01/01/2024 – 20/07/2024	19,639 tCO ₂ e
Total for the monitoring period	35,428 tCO₂e (round up value)

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
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
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
OSV	On Site Visit
PE	Project Emissions
PP(s)	Project proponent (s)
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
VVB	Validation & verification body

Appendix 2. Competence of team members and technical reviewers



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 (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Health Expert	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input type="checkbox"/> CCB Expert	<input type="checkbox"/> Legal Expert	<input type="checkbox"/> Financial Expert	<input type="checkbox"/> Environmental, Health and Safety financial matters
<input type="checkbox"/> SDG+	<input type="checkbox"/> Social no-harm(S+)	<input type="checkbox"/> Environment no-harm(E+)	
<input checked="" type="checkbox"/> Local Expert for India			

in the following Technical Areas:

<input type="checkbox"/> TA 1.1	<input checked="" type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input checked="" type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input type="checkbox"/> TA 14.1	<input type="checkbox"/> TA 15.1	<input type="checkbox"/> TA 16.1		

Issue Date 30th January 2024	Expiry Date 31st December 2024
 <hr/> Ms. Priya Suman Compliance Officer	 <hr/> Mr. Sanjay Kumar Agarwalla Technical Director

Revision History of the document:

Revision date	Summary of changes
Dec 2023	Initial Adoption
Jan 2024	Amendment in Technical Area – 3.1

CC IPL_FM 7.9 Certificate of Competency_V4.0_112023
³ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Anubhav Dimri

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

for the following functions and requirements:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> Validator | <input checked="" type="checkbox"/> Verifier | <input checked="" type="checkbox"/> Team Leader | <input checked="" type="checkbox"/> Technical Expert |
| <input checked="" type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert | <input checked="" type="checkbox"/> Plastic Waste Expert |
| <input checked="" type="checkbox"/> CCB Expert | <input type="checkbox"/> Legal Expert | <input checked="" type="checkbox"/> Financial Expert | <input checked="" type="checkbox"/> Environmental, Health and Safety financial matters |
| <input checked="" type="checkbox"/> SDG+ | <input checked="" type="checkbox"/> Social no-harm(S+) | <input checked="" type="checkbox"/> Environment no-harm(E+) | |
| <input checked="" type="checkbox"/> Local Expert for India, RSA and Spanish speaking countries | | | |

in the following Technical Areas:

- | | | | | |
|---|---|---|---|---|
| <input checked="" type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1 | <input checked="" type="checkbox"/> TA 3.1 | <input type="checkbox"/> TA 4.1 |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1 | <input type="checkbox"/> TA 5.2 | <input type="checkbox"/> TA 7.1 | <input checked="" type="checkbox"/> TA 8.1 |
| <input type="checkbox"/> TA 9.1 | <input type="checkbox"/> TA 9.2 | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input checked="" type="checkbox"/> TA 14.1 | <input checked="" type="checkbox"/> TA 15.1 | <input checked="" type="checkbox"/> TA 16.1 | | |

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022 ¹	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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

for the following functions and requirements:

- | | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Validator | <input checked="" type="checkbox"/> Verifier | <input checked="" type="checkbox"/> Team Leader | <input checked="" type="checkbox"/> Technical Expert |
| <input checked="" type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert | <input checked="" type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> CCB Expert | <input type="checkbox"/> Legal Expert | <input checked="" type="checkbox"/> Financial Expert | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input checked="" type="checkbox"/> SDG+ | <input checked="" type="checkbox"/> Social no-harm(S+) | <input checked="" type="checkbox"/> Environment no-harm(E+) | |
| <input checked="" type="checkbox"/> Local Expert for India and Sri Lanka | | | |

in the following Technical Areas:

- | | | | | |
|--|--|----------------------------------|---|---|
| <input checked="" type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1 | <input checked="" type="checkbox"/> TA 3.1 | <input type="checkbox"/> TA 4.1 |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1 | <input type="checkbox"/> TA 5.2 | <input type="checkbox"/> TA 7.1 | <input type="checkbox"/> TA 8.1 |
| <input type="checkbox"/> TA 9.1 | <input type="checkbox"/> TA 9.2 | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1 | <input type="checkbox"/> TA 16.1 | | |

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022 ¹	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

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 29/06/2024) Monitoring Report (Version 02 dated 16/08/2024) Monitoring Report Final Version (Version 03 dated 26/08/2024)
/02/	Emission reductions sheet (Corresponding to /01/ /02/& /03/)
/03/	Sustaincert's review report for the design certification and for 2 nd performance certification
/04/	Monitoring report for Monitoring period 02 version 03 dated 15/09/2023
/05/	Evidence of Carbon Credits waiver/ undertaking for project is not developed under any other carbon scheme
/06/	Evidence for the random sample generator for the parameters opted for sampling/survey.
/07/	SDG Impact tool
/08/	Sampling Calculator for sample size, and precision level
/09/	Records of monitoring Survey of the project and Biogas user survey
/10/	Third party survey report
/11/	Employment records: a) Permanent Employment records b) Contractual Employment records
/12/	The grievance registers applicable for the monitoring period
/13/	Monitoring survey Questionnaire template
/14/	Verification contract between VVB & PP
/15/	Contract between PP and third party for monitoring survey
/16/	Training records from 21/07/2023 to 20/07/2024

Background Documents

Ref no.	Reference Document
/B01/	AMS-I.E. Switch from non-renewable biomass for thermal applications by the user - Version 12

/B02/	<ol style="list-style-type: none"> 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 2.0, dated 14/01/2021 4. Community Services Activity Requirements (version 1.1) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/
/B03/	Registered PDD, Version 5.0 and corresponding Validation Report
/B04/	Standards <ol style="list-style-type: none"> 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 1.0 dated 17/11/2021
/B07/	<ol style="list-style-type: none"> 1. Validation and Verification Standard for PoAs, version 03.0 2. Project Standard for PoAs, version 03.0 3. Project Cycle Procedure for PoAs, version 03.0
/B08/	Verification report for 1st Monitoring period (performance certification)03 dated 18/09/2022

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

Table 1. FARs from this verification

FAR ID	01	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:	10/08/2024
Description of CAR					
Completion date of the monitoring report in the MR is not correct. PP is requested to correct the same. Further, PP is requested to clarify whether the monitoring period provided is inclusive of both the dates.					
PP response					Date:
Completion date of monitoring report has been revised in new Version of MR. And Monitoring period is inclusive of both the dates.					14/08/2024
Documentation provided by PP					
Revised MR version 2					
VVB assessment					Date:
Completion date of monitoring report has been corrected and PP has clarified the date of monitoring period in MR, the revisions found to be appropriate. Hence, CAR 01 is closed.					16/08/2024

CAR ID	02	Section no.	D.2	Date:	10/08/2024
Description of CAR					
CAR has been raised for the following: 1. Version number of the PDD/VPA-DD (s) applicable to this monitoring report in the Key project information is not correct, PP is requested to correct the same. 2. The ER calculation for the monitoring period is inaccurate. PP, PP is requested to rectify the same. 3. The Crediting period of the project activity provided in the section A.4 of the MR is not as per the registered PDD, PP is requested to correct the same.					
PP response					Date:
1. Version number of the PDD/VPA-DD is corrected now in new version of MR. 2. ER calculation for this monitoring period is corrected now in revised MR. 3. The Crediting period of the project activity provided in the section A.4 of the MR is revised now, in new version.,					14/08/2024
Documentation provided by PP					
Revised MR version 2					
VVB assessment					Date:
PP has provided the correct version number of PDD and revised the ER value in MR, further PP has corrected the crediting period in the section A.4 of the MR, the revision found to be appropriate, Hence CAR02 is closed.					16/08/2024

CAR ID	03	Section no.	D.5.2	Date:	10/08/2024
Description of CAR					
CAR has been raised for the following: 1. The value provided for the parameter $BC_{PJ,HH,y}$ in the section D.2 of the MR is not consistent with the value provided in the ER sheet, PP is requested to provide the correct value and make it consistent. 2. The source mentioned for the parameter $BC_{BL,HH,y}$ in the section D.2 is not consistent with the ER sheet, PP is requested to correct the same.					

3. The source provided for the parameter good health and well-being (3.9.1) in the section D.2 is not as per the registered PDD, PP is requested to correct the same.
4. The source mentioned for the parameter N_{HH} in the section D.2 is not as per the registered PDD, PP is requested to correct the same

PP response	Date: 14/08/2024
<ol style="list-style-type: none"> 1. The value provided for the parameter BC_{PJ,HH,y} in the section D.2 of the MR is corrected now. 2. The source provided for the parameter BCBL,HH,y in the section D.2 of the MR is corrected now. 3. The source provided for the parameter good health and well-being (3.9.1) in the section D.2 of the MR is corrected now. 4. The source mentioned for the parameter N_{HH} in the section D.2 of the MR is corrected now. 	
Documentation provided by PP	
Revised MR version 2	
VVB assessment	Date: 16/08/2024
PP has provided the correct values and source for the parameters BC _{PJ,HH,y} , BCBL,HH,y , N _{HH} and good health and well-being (3.9.1)) in the section D.2 of the MR	
The revisions made on MR is found to be appropriate, hence Car 03 is closed.	

CAR ID	04	Section no.	D.5.2	Date: 10/08/2024
Description of CAR				
CAR has been raised for the following:				
<ol style="list-style-type: none"> 1. In section D.3, the emission reduction value obtained last monitoring period is not correct, PP is requested to correct the same. 2. estimated annual average provided in the section E.2 is not as per the registered PDD, PP is requested to correct the same. 3. The Values estimated in ex ante calculation of approved PDD for this monitoring period is consistent with the ER sheet, PP is requested to correct the same. 				
PP response				Date: 14/08/2024
<ol style="list-style-type: none"> 1. Section D.3 has been corrected now. 2. Section E.2 has been corrected now. 3. Same has been corrected now in new version of MR. 				
Documentation provided by PP				
Revised MR version 2				
VVB assessment				Date:
<ol style="list-style-type: none"> 1. PP has revised the emission reduction value obtained last monitoring in section D.3 of the MR. 2. PP has revised estimated annual average provided in the section E.2 of MR. 3. PP has revised estimated ex ante value as per the registered PDD. 				
The revisions made on MR is found to be appropriate, hence Car 04 is closed.				

Table 3. CL from this verification

CL ID	01	Section no.	D.5.2	Date: 10/08/2024
Description of CL				
PP is requested to provide the following documents.				
<ol style="list-style-type: none"> 1. Monitoring survey report. 2. Grievance register and compliant records 3. Monitoring survey questionnaire and its results 4. training records. 				

5. Contract between PP and third party for monitoring survey

6. Third party survey report

7. Evidence of Carbon Credits waiver

PP response	Date: 14/08/2024
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All the above supported documents have been provided in zip folder.

Documentation provided by PP

VVB assessment	Date: 16/08/2024
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PP has provided all the above-mentioned documents, the same found to be appropriate. Hence, CL 01 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	7,200
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	5.4
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	99%
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	tCO ₂ /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 CO ₂ e 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	0.17753
Verified Source of Data	Value obtained from third party survey/10/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the frequency is in line with the registered PDD /B08/.
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 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	7,200
Verified Source of Data	Value obtained from Project Proponent’s project database.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the frequency is in line with the registered PDD /B03/.
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	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.

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

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 /16/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the frequency is in line with the registered PDD /B03/.
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/16/. 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. /16/. 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:	Quantitative employment and income generation (8.5.2)

(as in monitoring plan of PDD):	
Unit	Number
Measuring frequency/Time Interval:	Annual
Reported value	25
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, the frequency is in line with the registered PDD /B03/.
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 created. 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	7,200
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, the frequency is in line with the registered PDD /B03/.
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
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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	7,200
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, the frequency is in line with the registered PDD /B03/.
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