**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<br>☒ Small-scale |
| **Version number of the verification and certification report** | 01 |
| **Completion date of the verification and certification report** | 18/10/2023 |
| **Monitoring period number and duration of this monitoring period** | 02<br>01/09/2022 – 30/09/2023 (inclusive of both days) |
| **Version number of the monitoring report to which this report applies** | 02 |
| **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** | 58,897 $tCO_2e$ |
| **Certified amount of GHG emission reductions or GHG removals for this monitoring period** | 57,985 $tCO_2e$ |
| **SDG Impacts:** | 1. SDG 3: Good health and wellbeing<br>2. SDG 7: Affordable and Clean Energy<br>3. SDG 8: Decent work and Economic Growth<br>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** |  <br>Vikash Kumar Singh, Compliance Officer |

## SECTION A. Executive summary

Carbon Check (India) Private Ltd. (CCIPL) is performing the second 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 01/09/2022- 30/09/2023 (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 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 “Implementation of clean energy technology in rural areas of India-2” in the host country “India” for the period 01/09/2022 to 30/09/2023 (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 /02/ over the monitoring period from 01/09/2022 – 30/09/2023 (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 /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 /B04/. 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 ($tCO_2e$)** |
|---|---|
| 01/09/2022 – 31/12/2022 | 17,842 $tCO_2e$ |
| 01/01/2023 – 30/09/2023 | 40,144 $tCO_2e$ |
| Total for the monitoring period | **57,985 $tCO_2e$** |

CCIPL 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 / Verifier / | IR | Mathew | Vijay | CCIPL | X | X | X | X |
| 2. | Technical Expert | IR | Anand | Amit | CCIPL | - | X | X | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3. | Trainee Assessor | IR | T A | Stefimol | CCIPL | 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 | Singh | Vikash Kumar | CCIPL |
| 2. | Approver | IR | Singh | Vikash Kumar | CCIPL |

**Vijay Mathew:** is an appointed Team Leader. He has been involved in carbon offset mechanisms/sustainability standards for more than 14 years. He has completed his Master of Science (M.Sc.) in Energy Systems, Master of Business Administration (M.B.A) and Master of Commerce (M.Com). He has also completed his Post Graduate Diploma in International Business Operations (PGD-IBO) and Post Graduate Diploma in Fire Protection and Safety (PGD-FPS). He is certified Lead Auditor/Assessor in various standards viz. ISO 9001:2015, SA 8000: 2014, ISO 14001:2015, ISO 14064-1:2018, ISO 50001:2018, ISO 45001: 2018 and BS OHSAS 18001: 2007 etc.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, GCC and CDM validations and validations. He has been involved in verification/validation of more than 100 Carbon offset projects. He has also attended several Gold Standard VVB webinar trainings and GS4GG trainings. He is qualified as technical expert for TA 1.1, 1.2, 3.1,13.1 and 13.2 under CDM SS/TA categorization.

**Amit Anand:** Qualified lead assessor and internal technical reviewer for offset projects validations and verifications under CDM, VCS and Gold Standard (GS) and actively been involved in the validation and verification or internal technical review of more than 20 offset projects. He is qualified as technical expert for TA 1.1, 1.2, 3.1, 8.1, 13.1 and 14.1 under CDM Sectoral Scope categorization He holds a Masters in Environment Management from Forest Research Institute, Dehradun and B.Sc Environmental Sciences from Ramjas College, in University of Delhi. He also has attended training in ISO 14001:2004 - Lead Auditor Training Course and for Social Carbon Standard Training. He was involved in the following Projects submitted to UNFCCC for Request for Registration and issuance: UNFCCC Project Reference Numbers: 7484, 7820, 7821, 7849, 7881, 7889, 8350, 9489, 0925, 6864, and 0177. He was also involved as validation and verification assessor in the following Gold Standard Projects: GS 1078, GS 976, GS 850, and GS 916 PoA (GS 1231 (VPA 01) GS 1029 (VPA 02), GS 1030(VPA 03), GS 1031(VPA 04).

He has also attended Several Gold Standard DOE webinar trainings including training on GS4GG.

**Vikash Kumar Singh:** Qualified lead assessor and internal technical reviewer for offset projects validations and verifications under CDM, VCS and Gold Standard (GS) and actively been involved in the validation and verification or internal technical review of more than 500 GHG offset projects. He is qualified as technical expert for TA 1.1,1.2, 3.1,4.1,7.1,13.1,13.2,14.1 and 15.1 under CDM & ISO SS categorisation. He has undergone extensive training in the validation and verification of carbon offset projects including the accreditation requirements for the VVBs. He has also received accreditation from the California Air Resources Board (ARB) under Executive Order H2-13-174 as a GHG offset lead verifier for carbon offsets projects and is a specialist for the livestock protocol. Currently, he is employed with Carbon Check in the capacity of Compliance Officer. He holds a Bachelor of Science degree in Environment & Water Management and Master of Science degree in

Environmental Management. He has been involved in number of GS validation and verification projects (as internal technical reviewer and team leader) in the following Gold Standard Projects: GS 1078, GS 1044, GS 976, GS 850, GS 916 PoA (GS 1231 (VPA 01) GS 1029 (VPA 02), GS 1030(VPA 03), GS 1031(VPA 04) and GS 4364.
He has also attended Several Gold Standard DOE webinar trainings including training on GS4GG.

**Stefimol T A**: She is a trainee assessor at Carbon Check (India) Private Limited.

## SECTION C. Means of verification

### C.1. Desk/document review

The verification was performed primarily based on the review of the Monitoring report /02/ 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 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 | 12/10/2023 & 13/10/2023 | Project Design<br>Organisation background<br>Project Implementation plan<br>Project start date and Project Location<br>Project background information<br>Baselinesurveys, KPT,<br>FNRB calculation<br>Baseline Scenario<br>Baseline Identification and Additionality<br>Monitoring and reporting documentation<br>Qualification and Training<br>Quality Assurance-Management and operating system<br>Social and Environmental Impacts | Vijay Mathew, Amit Anand, Stefimol T A |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | Local Stakeholders meeting process Compliance with relevant laws Roles and responsibility Observations of established practices | |
| /02/ | Singh | Rajveer | Greneity Infocom Services | 12/10/2023 & 13/10/2023 | Project Implementation and operation. Grievance handling. Maintenance | Vijay Mathew, Amit Anand, Stefimol TA |
| /03/ | Sharma | Arjun | Greneity Infocom Services | 12/10/2023 & 13/10/2023 | Project Implementation and operation. Grievance handling. Maintenance Monitoring plan | Vijay Mathew, Amit Anand, Stefimol TA |
| /04/ | Singh | Harjinder | PB/GRN/ MAN/4/5194 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /05/ | Singh | Gurdeep | PB/GRN/ MAN/4/5106 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /06/ | Singh | Gurdeep | PB/GRN/ MAN/4/10 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /07/ | Singh | Gajith | PB/GRN/ MAN/4/9 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /08/ | Singh | Avtar | PB/GRN/ MAN/4/5222 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /09/ | Singh | Gurdeep | PB/GRN/ MAN/4/11 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /10/ | Singh | Garpreeth | PB/GRN/ MAN/4/6 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | Stefimol TA |
| /11/ | Singh | Makhan | PB/GRN/MAN/4/5242 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /12/ | Singh | Lakhwinder | PB/GRN/MAN/4/5281 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /13/ | Singh | Avtar | PB/GRN/MAN/4/2 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |
| /14/ | Singh | Kulvinder | PB/GRN/MAN/4/5267 | 12/10/2023 & 13/10/2023 | Monitoring Surveys | Vijay Mathew, Amit Anand, Stefimol TA |

### 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 /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 participant had applied sampling approach to the monitoring survey /10/, 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 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 participants.

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/.

| 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 02 clarifications (CLs) and 05 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 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.<br><br>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.<br><br>CCIPL 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.<br><br>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 01/09/2022 to 30/09/2023 has been taken into consideration.<br><br>Verification team based on review of MR /01/ and provided evidence confirms that the households/end users relinquish their right of carbon credits. Verification has verified the end user agreement /05/ and commissioning certificates /20/ states the rights transfer in the lieu of free operation and maintenance of the plant. 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 /19/.<br><br>Verification team has checked the information in the monitoring report /01/ and compared it against the registered PDD /B03/ and found to be consistent.<br><br>Verification team confirms that:<br><br>a) The project activity is implemented as per registered PDD/B03/.<br>b) The actual operation of the proposed CDM project activity is in line with the registered/revised PDD /B03/.<br>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.<br><br>Verification team of CCIPL based on review of records and on-site interviews confirms an effective grievance addressal mechanism is in place and; however, no major grievances were reported during the monitoring period/12/.<br><br>In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised PDD /B04/. |

## 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

[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).

### 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** | CAR 05 has been raised and resolved successfully. Please refer Appendix 4 below. |
| **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** | -- |
| **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 has been raised and resolved successfully. Please refer Appendix 4 below. |
| **Conclusion** | The verification team confirms that the data and parameters monitored are in compliance with the registered PDD /B04/ and the monitoring plan.<br><br>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 4 for assessment of each parameter. |

### D.5.3. Implementation of sampling plan

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | CAR 02 and CAR 03 has been raised and resolved successfully. Please refer Appendix 4 below. |
| **Conclusion** | 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 11,085 during the monitoring period. The sampling frame is homogenous within itself, with respect to service level, established ex-ante baseline and user characteristics.<br><br>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).<br><br>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 11,085 expected proportion is taken 60% and accordingly, sample size (n) come out to be 251. However, on a conservative note PP has opted to perform survey in 300 sample households. |

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

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | - |
| **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** | -- |
| **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:<br>$BE_y = B_y * f_{NRB,y} * NCV_{biomass} * EF_{projected\_fossilfuel}$<br><br>Where,<br>**$BE_y$** = Baseline Emissions during the year y in tCO2e<br>**$B_y$** = Quantity of woody biomass that is substituted or displaced in tonnes<br>**$f_{NRB,y}$** = 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/.<br><br>**$NCV_{biomass}$** = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)<br><br>**$EF_{projected\_fossilfuel}$** = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 $tCO_2/TJ$.<br><br>By' By is determined by using option (a) paragraph 29 of the methodology as follows:<br><br>"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)";<br><br>$B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$<br><br>Where,<br><br>$N_{HH}$ = Number of households in the project activity, number<br><br>$BC_{BL,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year<br><br>$BC_{PJ,HH,y}$ = 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<br><br>$BC_{BL,HH,y}$ = for the project have been considered based on previous survey and publicly available reports as discussed in above section.<br><br>The average annual consumption of woody biomass is estimated by survey methods to be 0.088 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 01/09/2022 to 30/09/2023 is calculated to be 57,985 $tCO_2e$. |

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

| | |
|---|---|
| **Means of verification** | Document Review, Interview |
| **Findings** | -- |

| | |
|---|---|
| **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:<br><br>$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\_fuel}$<br><br>Where,<br>$BE_y$ = Baseline emissions during the year y in t $CO_2e$<br>$B_y$ = Quantity of woody biomass that is substituted or displaced in tonnes<br>$f_{NRB,y}$ = Fraction of woody biomass used in the absence of the project activity in<br>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)<br>$EF_{projected\_fossil\ fuel}$ = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 $tCO_2$/TJ.<br><br>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)";<br><br>$By = NHH \times (BCBL,HH,y - BCPJ,HH,y)$<br><br>Where,<br>$N_{HH}$ = Number of households in the project activity, number<br>$BC_{BL,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year<br>$BC_{PJ,HH,y}$ = 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.<br><br>$BC_{BL,HH,y}$ = for the project have been considered based on previous survey and publicly available reports as discussed in above section.<br>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:<br><br>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.<br><br>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.<br><br>Leakage Emissions (LEy):<br>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= 57,985 $tCO_2e$

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 | 57,985 $tCO_2e$ | 55,748 $tCO_2e$ |
| 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 | 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** | - |
| **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.<br><br>Project Leakage Assessment<br>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.<br><br>PP has opted default option, and By is adjusted with adjustment factor of 0.95 to account leakage.<br><br>Therefore, the net benefit is = 61,037* 0.95 = 57,985 $tCO_2e$<br><br>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 04 has been raised and resolved successfully. Please refer Appendix 4 below. |
| **Conclusion** | Emission Reductions: The emission reductions in this monitoring period are: $ER_y = BE_y - PE_y – LE_y$<br><br>Where,<br>$ER_y$ is the total emission reductions of the project activity during the year y in $tCO_2e$;<br>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 $tCO_2e$;<br>LEy is the leakage emissions for the project activity during the year y in $tCO_2e$.<br><br>As explained in section D.7.1 above, the resulted Baseline emissions (BEy) for the monitoring period is 57,985 $tCO_2e$. 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 57,985 $tCO_2e$ (round-down value).<br><br>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 | 61,037 $tCO_2e$ | 3,052 $tCO_2e$ (leakage) | 57,985 $tCO_2e$ |
| 7 | Access to affordable and clean energy services | Firewood based conventional | N/A | 11,085 |
| 8 | Unemployment rate, by sex, age and persons with activity disabilities | N/A | N/A | 10 Employments |
| 8 | Unemployment rate, by sex, age and persons with activity disabilities | N/A | N/A | 2 trainings |
| 3 | Improvement in health and decrease in illness | Illness due to smoke | N/A | 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** | CL 02 has been raised and resolved successfully. Please refer Appendix 4 below. |
| **Conclusion** | The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 58,897 $tCO_2e$ and the actual emission reductions achieved for the monitoring period is 57,985 $tCO_2e$. |

| SDG | Values estimated in ex ante calculation of approved PDD | Actual values achieved during this monitoring period |
|---|---|---|
| 13 | 58,897 $tCO_2e$ | 57,985 $tCO_2e$ |
| 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, 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** | -- |
| **Conclusion** | The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B04/ is 58,897 $tCO_2e$ and the actual emission reductions achieved for the monitoring period is 57,985 $tCO_2e$. 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.<br><br>For other SDG parameters, PP has provided justification in the Monitoring report and assessment of the same is provided below:<br>• SDG 3: The actual value is same as the estimated value, which is deemed appropriate and thus acceptable to the VVB.<br>• SDG 7: The actual value is higher than the estimated value, which is deemed appropriate and thus acceptable to the VVB.<br>• SDG 8: The actual value is higher than the estimated value, due to higher number of personnel hired for distribution and monitoring compared to the ex-ante estimates.<br>• 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 2nd 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 /02/, 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 Participant. 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 /B04/, including the monitoring plan and the corresponding validation report /B03/;
- Desk review of the MR /02/ 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 (12/10/2023- and 13/10/2023)
- 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 57,985 $tCO_2e$ emission reductions during the reported monitoring period.

This statement covers verification period from 01/09/2022 – 30/09/2023 (inclusive).

The VVB has raised 02 clarifications and 05 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 57,985 $tCO_2e$ equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

| **Vintage** | **ER ($tCO_2e$)** |
|---|---|
| 01/09/2022 – 31/12/2022 | 17,842 $tCO_2e$ |
| 01/01/2023 – 30/09/2023 | 40,144 $tCO_2e$ |
| Total for the monitoring period | **57,985 $tCO_2e$** |

# 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 |
| GWh | Giga Watt Hour |
| GWP | Global Warming Potential |
| IPCC | Intergovernmental Panel on Climate Change |
| LE | Leakage Emissions |
| MP | Monitoring Period |
| MR | Monitoring Report |
| MWh | Mega Watt Hour |
| OSV | On Site Visit |
| PE | Project Emissions |
| PP(s) | Project Participant(s) |
| PRC | Post registration change |
| 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

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

**Issue Date**

**1st January 2023**

**Expiry Date**

**31st December 2023**

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

# Carbon Check (India) Private Limited

## Certificate of Competency

### Mr. Amit Anand

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

| Issue Date | Expiry Date |
|---|---|
| 1st January 2023 | 31st December 2023 |

Mr. Vikash Kumar Singh
Compliance Officer

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

# Carbon Check (India) Private Limited

## Certificate of Competency

### Mr. Vikash Kumar Singh

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

*for the following functions and requirements:*

| | | | |
|---|---|---|---|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☒ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☒ Plastic Waste Expert |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | ☒ CCB Expert |
| ☒ Financial Expert | ☒ Local Expert for India, South Africa, and Spanish speaking countries | | |

*in the following Technical Areas:*

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

| Issue Date | Expiry Date |
|---|---|
| 1st January 2023 | 31st December 2023 |

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

# Appendix 3. Documents reviewed or referenced

| S. No. | Document |
|---|---|
| /01/ | Monitoring Report (Version 01 dated 01/10/2023)<br>Monitoring Report final version (Version 02 dated 17/10/2023) |
| /02/ | Emission reductions sheet (Corresponding to /01/ & /02/) |
| /03/ | Distribution records |
| /04/ | Evidence for the biodigester specifications distributed under the project |
| /05/ | Evidence of Carbon Credits waiver |
| /06/ | Evidence for the random sample generator for the parameters opted for sampling/survey. |
| /07/ | Initial Sample size calculation sheet along with actual samples conducted and the reliability assessment. |
| /08/ | Evidence for unique identification number under the project |
| /09/ | Records of monitoring Survey of the project and Biogas user survey |
| /10/ | Third party survey report |
| /11/ | Employment records from 01/09/2022 to 30/09/2023 |
| /12/ | The grievance registers applicable for the monitoring period |
| /13/ | Monitoring log books from 01/09/2022 to 30/09/2023 |
| /14/ | Verification contract between VVB & PP |
| /15/ | Biogas Service Records from 01/09/2022 to 30/09/2023 |
| /16/ | Training records from 01/09/2022 to 30/09/2023 |
| /17/ | Salary slips from 01/09/2022 to 30/09/2023 |
| /18/ | Monitoring Survey Forms |
| /19/ | Undertaking from PP confirming the project is not registered under any other scheme |
| /20/ | Monitoring survey Questionnaire template |
| /21/ | Sampling Calculator for sample size, and precision level |
| /22/ | Monitoring report for Monitoring period 01 version 05 dated 18/09/2022 |

| | |
|---|---|
| /23/ | Sustaincert's review report for the design certification and for 1st performance certification |

**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<br>2. Gold Standard Programme of Activity Requirements version 1.2, dated 24/10/2019<br>3. GS Validation & Verification Body Requirements version 2.0, dated 14/01/2021<br>4. Community Services Activity Requirements (version 1.1) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/ |
| /B03/ | Registered PDD and corresponding Validation Report |
| /B04/ | Standards<br>a) CDM Sampling Standard, version 09.0<br>b) Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.<br>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/ | GS Validation and Verification Standard V1.0 |
| /B08/ | Validation report for the design certification and verification report for 1st Monitoring period |

# 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.** | A.1. | **Date:** 12/10/2023 |
|---|---|---|---|---|
| **Description of CAR** | | | | |
| 1. The monitoring period mentioned in the monitoring report is not correct. PP is requested to correct the same. Further, the emission reduction calculations to be inline with the correct monitoring period.<br><br>2. The date of design certification is not provided in the MR. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| 1. Monitoring period has now been revised along with ER sheet.<br><br>2. Now included the date of design certification in the MR. | | | | |
| **Documentation provided by PP** | | | | |
| - Monitoring report version 02 dated 17/10/2023<br><br>ER sheet version 02 | | | | |
| **VVB assessment** | | | | **Date:** 18/10/2023 |
| PP has now corrected the monitoring period in the revised monitoring report, and now the same found correct. Further, PP has revised the Emission reduction calculation in the ER and Monitoring report. Hence CAR 01 is closed. | | | | |

| **CAR ID** | 02 | **Section no.** | D.4 | **Date: 12/10/2023** |
|---|---|---|---|---|
| **Description of CAR** | | | | |
| 1. The sample parameter includes one mean value parameter in addition to proportional parameter for which sample size calculation is not provided.<br><br>2. The sampling method and its justification is not provided.<br><br>3. The survey method and achieved precision is not provided. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| Detailed sampling plan has now been included in the MR which elaborates the sample size chosen and reliability calculations | | | | |
| **Documentation provided by PP** | | | | |

| |
|---|
| Monitoring report version 02 dated 17/10/2023 |
| **VVB assessment** **Date:** 18/10/2023 |
| PP has now revised the monitoring report. The revised report now covers the sample size calculation, sampling method, justification for sampling method, survey method and achieved precision. The revisions found appropriate. Hence CAR 02 is closed. |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | 03 | **Section no.** | D.4 | **Date: 12/10/2023** |
| **Description of CAR** | | | | |
| In the section D.4 the equation used for the sample size calculation is not consistent with the actual sampling performed. The value for confidence required is also not consistent in the MR. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| Sampling calculation is now revised in the MR and all the values are now consistent. | | | | |
| **Documentation provided by PP** | | | | |
| Monitoring report version 02 dated 17/10/2023 | | | | |
| **VVB assessment** | | | | **Date:** 18/10/2023 |
| PP has now revised the monitoring report and the revisions found appropriate. Hence CAR 03 is closed. | | | | |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | 04 | **Section no.** | D.7.4. | **Date: 12/10/2023** |
| **Description of CAR** | | | | |
| 1. The exante value provided in the ER sheet is not in line with the registered PDD. PP is requested to correct the same.<br>2. The BCPJ,HH,y value mentioned in the MR, is not consistent with the survey results.<br>3. Vintage wise ER value provided in the table 2 is not consistent.<br>4. The parameter EFproject_fossil fuel is not correctly mentioned in the MR. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| 1. The ER sheet is revised and the erratum is not corrected.<br>2. BCPJ,HH,y value is now made consistent in the MR.<br>3. Vintage wise value in now corrected in the MR and made inline the the ER sheet.<br>4. The erratum is now corrected in the MR | | | | |
| **Documentation provided by PP** | | | | |
| ER sheet<br><br>Monitoring report version 02 dated 17/10/2023 | | | | |
| **VVB assessment** | | | | **Date:** 18/10/2023 |
| PP has now revised the MR and ER sheet and the revisions found appropriate. Hence CAR 04 is closed. | | | | |

| | | | | |
|---|---|---|---|---|
| **CAR ID** | 05 | **Section no.** | D.4. | **Date: 12/10/2023** |
| **Description of CAR** | | | | |
| The methodology version no. used in the MR is not consistent with the registered PDD and last | | | | |

| |
|---|
| monitoring report. |
| **PP response** **Date:** 17/10/2023 |
| The MR is now revise and the methodology version is now made consistent. |
| **Documentation provided by PP** |
| Monitoring report version 02 dated 17/10/2023 |
| **VVB assessment** **Date:** 18/10/2023 |
| PP has now revised the MR and the revisions found appropriate. Hence CAR 05 is closed. |

**Table 3. CL from this verification**

| | | | | |
|---|---|---|---|---|
| **CL ID** | 01 | **Section no.** | G.1 in MR | **Date:** 12/10/2023 |
| **Description of CL** | | | | |
| PP is requested to provide the following documents;<br><br>1.Monitoring survey report.<br><br>2.Sampling plan and proof of random sample generator to be provided.<br><br>3.Griviance register and compliant records<br><br>4. Monitoring survery questionnaire | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| Monitoring survey report, Sample size calculator & screenshot of the random sample generator, copy of log book records and Sample questionnaires are attached as Annexures. | | | | |
| **Documentation provided by PP** | | | | |
| - Monitoring survey report.<br>- Sampling plan<br>- Grievance register and compliant records<br>- Monitoring survey questionnaire | | | | |
| **VVB assessment** | | | | **Date:** 18/10/2023 |
| PP has provided all the requested documents and the same found appropriate. Hence CL 01 is closed. | | | | |

| | | | | |
|---|---|---|---|---|
| **CL ID** | 02 | **Section no.** | E.2 in MR | **Date:** 12/10/2023 |
| **Description of CL** | | | | |
| PP is requested to provide evidence related to the fulfilment of SDG compliance viz. training records, employment records, survey results related to SDG 3 and SDG 7.<br><br>Further PP is requested to provide the SDG impact tool for the monitoring period. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |
| SDG tool is attached as Annexure and SDG related evidences is now submitted. | | | | |
| **Documentation provided by PP** | | | | |
| -SDG tool<br>-Training records<br>-Survey report<br>-Employment records | | | | |
| **VVB assessment** | | | | **Date:** 18/10/2023 |
| PP has provided all the requested documents and the same found appropriate. However, the KPI informations provided in the SDG impact tool is not consistent with MR. Hence, this part of the CL is open. | | | | |
| **PP response** | | | | **Date:** 17/10/2023 |

| |
|---|
| The revised SDG tool is now submitted. |
| **Documentation provided by PP** |
| -SDG tool<br>- |
| **VVB assessment** **Date:** 18/10/2023 |
| PP has revised the SDG tool and the same found appropriate. Hence CL 02 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 |

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|---|---|
| **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<br>Indicator 13.2.1 "Amount of CO2e emissions reduced by the project per year" |
| **Data / Parameter:**<br>**(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** | 0.088 |
| **Verified Source of Data** | Value obtained from monitoring survey of samples /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 |

| **Monitoring Parameter Requirement** | **Assessment/ Observation by the VVB** |
|---|---|
| **Relevant SDG Indicator** | SDG 13<br>Indicator 13.2.1 “Amount of CO2e emissions reduced by the project per year” |
| **Data / Parameter:**<br>**(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. |
| **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 | 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 |
| 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** | 10 |
| **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 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** | 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 |

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| 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 3 |
| **Data / Parameter:**<br>**(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 |