Validation report form for renewal of crediting period for programme of activities

(Version 02.0)

VALIDATION REPORT	
Title of the project activity	Household and Commercial Biogas Plants in Kenya GS ID: 7587
Version number of the validation report	03
Completion date of the validation report	05/12/2023
Version number of PDD to which this report applies	Version: 3.2; Dated: 28/11/2023
Project Developer/ Project representative	Project Developer - Good Farmland Management Kenya, LTD
Project participants and any communities involved	Swiss Carbon Value Ltd.
Host Party	Kenya
SDG Impacts:	SDG 7: Access to affordable and clean energy (7.1 & 7.2) SDG 8: Decent work and economic growth (8.5) SDG 13: Climate Change (13.2)
Sectoral scope(s) and selected methodology(ies)	Sectoral Scope 1: Energy industries (renewable/non-renewable sources Methodology: Methodology for animal waste management and biogas application, version: 1.1
Name of VVB	Carbon Check (India) Private Limited
Name, position and signature of the approver of the validation report	Priya Suman Priya Suman, Compliance Officer

SECTION A. Executive summary

Purpose and general description

The Project Participant, Swiss Carbon Value Ltd. has appointed the VVB, Carbon Check (India) Private Ltd. to perform an independent validation of the Design Certification Renewal of the Gold Standard Large Scale Project Activity "Household and Commercial Biogas Plants in Kenya" in the host country of Kenya (hereafter referred to as "project activity"). This report summarises the findings of the validation of the Design Certification Renewal of the project, performed on the basis of Gold Standard criteria for registration, UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. This report contains the findings and resolutions from the validation and a validation opinion.

As per the PDD, the project activity "Household and Commercial Biogas Plants in Kenya" involves bundling household biogas plants located in Kenya with varying capacities – $6m^3$ to $40m^3$. The purpose of the project is to replace the commonly used non-renewable biomass with renewable biogas.

The project activity will reduce estimated emission reduction of 243,516 tCO_2e annually during the 5-year crediting period. The project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project in accordance with the Gold Standard requirements for additionality.

The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable Gold standard and CDM requirements, in particular, the project's baseline, monitoring plan and the project's compliance with relevant UNFCCC and Gold standard for Global Goals criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all Gold Standard for Global Goals Voluntary projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of voluntary emission reductions (VERs).

Location

The project activity "Household and Commercial Biogas Plants in Kenya" is located in the country Kenya.

Scope of the validation

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the relevant criteria (see above) and decisions by the Gold standard secretariat and CDM Executive Board, including the approved baseline and monitoring methodology /B02/. The validation team has, based on the recommendations in the GS4GG Validation and Verification Standard and GS4GG Principles and Requirements, version 1.2 /B03/ employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of VERs.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

While carrying out the validation of the Design Certification Renewal, CCIPL determines if the project activity complies with the requirements of the applicability conditions of the selected methodology, guidance issued by the Gold Standard and also assesses the claims and assumptions made in the PDD without limitation on the information provided by the project participants.

The Validation team confirms the contractual relationship signed on 21/03/2023, between the VVB, Carbon Check (India) Private Ltd. and the Project Developer/ Project Representative. The team assigned to the validation meets the Carbon Check (India) Private Ltd.'s internal procedures including the UNFCCC/Gold Standard for Global Goals requirements for the team composition and competence. The projects team has conducted a thorough contract review as per UNFCCC and Carbon Check procedures and requirements.

Validation methodology

The validation has been performed as described in the VVS and constitutes the following steps:

- Document review of data and information (PDD) and the relevant documents including the reference to information relating to projects or technologies similar to the proposed project activity and review based on the approved methodology being applied and of the appropriateness of formulae and accuracy of calculations).
- Cross checks between information provided in the PDD and information from other sources.
- Follow up actions for cross checking data and remote audit.
- Reference to available information
- Issuance of Validation Report.

Validation Process
The validation consists of the following four phases:

I. A desk review of the project design documents
   - A review of data and information.
   - Cross checks between information provided in the PDD and the information from sources with all the necessary means without limitations to the information provided by the project proponent.
   - Confirmation of the remote audit dates and Validation work plan.

II. Remote site visit and follow-up interviews with the project stakeholders
   - Interviews with the relevant stakeholders in the host country with personnel having knowledge with the project development via telephone, email or direct on-site visits.
   - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent.

III. Reference to available information's relating to projects or technologies similar projects under validation and review based on the approved methodology being applied of the appropriateness of formulae and accuracy of calculations.

IV. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The report is based on the assessment of the PDD undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, site visit, and stakeholder interviews, review of the applicable/applied methodology and its underlying formulae and calculations.

This report contains the findings and resolutions from the validation and a validation opinion on the proposed project thus confirming the project design as document is sound and reasonable and meets the stated requirements and identified criteria.

The validation protocol describes a total of 24 findings which include:

- Eighteen(18) Corrective Action Requests (CARs);
- Six (06) Clarification Requests (CLs);

All findings are closed during the verification process.

Conclusion

Carbon Check (India) Private Ltd. concludes the validation of the Design Certification Renewal with a positive opinion and that the Project Activity "Household and Commercial Biogas Plants in Kenya" in Kenya, as described in the PDD , meets all applicable Gold standard and CDM requirements, relevant methodologies, tools and guidelines.

The selected baseline and monitoring methodology is applicable to the project and correctly applied. Carbon Check (India) Private Ltd. Therefore, recommends the project to the Gold Standard for Global Goals for registration.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	⊢ ≻	Last name	First name	Affiliation

					(e.g. name of central or other office of VVB or outsourced entity)
1.	Team Leader	IR	Choudhary	Aparna	CCIPL
2.	Technical reviewer	IR	C	Indumathi	CCIPL
3.	Assessor	IR	Rajput	Jaya	CCIPL
4.	Trainee Assessor	IR	Bijani	Vishal	CCIPL
5.	Local Expert	ER	Muriuki	Job	CCIPL

SECTION C. Means of validation

C.1. Desk review

List of all documents reviewed or referenced during the validation is provided in Appendix-3.

C.2. On-site inspection

Duration of Onsite Audit inspection: 01/11/2023 & 03/11/2023				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
On-site	Opening Meeting	On site	01/11/2023 & 03/11/2023	Aparna Choudhary, Jaya Rajput, Vishal Bijani & Job Muriuki
2.	Discussion on the following aspects of the project: • Project design and proposed technology to be used • Baseline survey • FNRB calculation • Additionality • Applicability of methodology • Baseline Scenarios • Emission Reductions • SDG contributions • Implementation schedule with milestones • Management structure with Roles and Responsibilities • Monitoring Plan/Sampling Plan and process to be adopted	On site	01/11/2023 & 03/11/2023	Aparna Choudhary, Jaya Rajput, Vishal Bijani & Job Muriuki
3.	• Discussion on PDD, ER spreadsheet and supporting documents	On site	01/11/2023 & 03/11/2023	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki

C.3. Interviews

No.	Interviewee		Date	Subject	Team member
	Last name First name	Affiliation			
1.	Martha	South Pole	01/11/2023 & 03/11/2023	• Validation contract Project Design • Organisation background • Crediting period start date and Project Location • Project background information • FNRB calculation • Baseline Identification and Additionality • Monitoring and reporting documentation • Qualification and Training • Quality Assurance – Management and operating system • SDG contributions • Compliance with relevant laws • Roles and responsibility • Observations of established practices • Monitoring survey, • Baseline applicability, • ER calculation • On going financial need • Project Implementation plan • Carbon credit waiver	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
2.	Akash Joshi	South Pole	03/11/2023		Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
3.	Vincent Otieno	Technician in Sistemabio	03/11/2023	• On going grievances • Maintenance and repairs	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
4.	Too Robert		03/11/2023		
5.	Karanja David		01/11/2023		
6.	Joseph Wambugu		01/11/2023		
7.	Mercy Chepkemoi	LSC	03/11/2023	• User satisfaction • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
8.	Evaline Chebet	LSC	03/11/2023		
9.	Sally Jeruto Masai	LSC	03/11/2023		
10.	Moses Kaburu Mungania	LSC	03/11/2023		
11.	David Njihia Mwangi (22215067)	End users/Beneficiaries	01/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
12.	Esther Wairimu Kariuiki (22220532)	End users/Beneficiaries	01/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki

13.	Lucy Wanjiru (22222309)	End users/Beneficiaries	01/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
14.	Jhon Githai (22217673)	End users/Beneficiaries	01/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
15.	Victoria Marigu (22216267)	End users/Beneficiaries	01/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
16.	Elizabeth Wairimu (22225641)	End users/Beneficiaries	02/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
17.	Esleen Chepngeno (22222455)	End users/Beneficiaries	03/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
18.	Gideon Kipkirui (22220427)	End users/Beneficiaries	03/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
19.	Kigen Anthony (22220363)	End users/Beneficiaries	03/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
20.	Jane Langat (22223173)	End users/Beneficiaries	03/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki
21.	Margeret Bor (22222368)	End users/Beneficiaries	03/11/2023	• Commissioning details, Agreement with project developers • Functioning of Biogas plant • Grievances	Aparna Choudhary , Jaya Rajput, Vishal Bijani & Job Muriuki

Sampling:
PP's Approach:

To determine the sample size for each parameter, PP will use the sampling techniques outlined in "Standard of sampling and surveys for CDM project activities and programme of activities," version 9. **/B05/** in baseline survey. The annual monitoring requirements will be met by PP with a confidence precision of 90/10. The validation team has reviewed and determined that the sampling strategy used by PP is accurate and in accordance with the CDM on "Sampling and surveys for CDM project activities and programme of activities (version 9)" /B05/ under section B.7.2 of the PDD**/01/**. PP has surveyed 100 samples which is deemed to be appropriate to the validation team .

VVB's Sampling Approach:

CCIPL has considered para 39 (a) of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0" for determining the sampling size to be visited by VVB **/B05-1/**. In case of the current RCP, the estimated emission reduction is 243,516 tCO_2e per year, the validation team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 09.0 /B05/: Considering Acceptable Quality Level (AQL): 0.5% Unacceptable Quality Level (UQL): 20% and producer risk of 10% and consumer risk of 10% a sample size of 11 was required as per Table 2 in the referred Standard /B05/. Acceptance number (c) thus determined for the sample size is 0. CCIPL verified 11 samples to validate the project activity. The validation team selected random samples from PP's samples/B05/. VVB has assessed a total of 11 samples on the OSV. Unique IDs of biodigesters, working grievances were all checked during the OSV. No inconsistency was observed for any of the 11 samples OSV & document review of PP & user agreement, and that reported in the biodigester baseline survey /06/. This assessment of the selected samples was done to ascertain the implementation status of the project activity with respect to the unique IDs, Grievances, and implementation of the project.

SECTION D. Validation findings

D.1. Description of project activity

Means of validation	Document Review, Interview
Findings	CAR01 was raised and has been closed satisfactorily.
Conclusion	The project involves distribution of biodigesters in the families and communities of Kenya. The size of the biodigesters varies from $6m^3$ to $40m^3$ that utilizes cattle dung to feed the digester and the produced biogas is used for domestic purposes and the residue produced is used as an organic fertilizer. This leads to a reduction of greenhouse gas emissions by displacing conventionally used non-renewable biomass with renewable biogas. Baseline Scenario: As per the baseline survey **/06/** conducted by the PP, fuelwood was the main fuel used to suffice domestic needs which was sourced from nearby forests and open markets. The usage of inefficient firewood leads to indoor pollution along with a decrease in forest land cover and an increase in degraded land. The cattle dung generated in the absence of project scenario was left to decay anaerobically that led to methane emissions. The baseline scenario provided by the PP is according to the applied methodology /B02/ Project Scenario: The project activity involves distribution of biogas digesters to the commercial units and households of Kenya that are constructed and maintained by Sistema.bio the produced biogas is used for thermal needs and the residue is used as organic fertilizer. The PDD /02/ contains a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.

	The location of the project activity is clearly defined in the PDD. The project is located in Kenya. The project activity aims at displacing the fuel wood as a cooking source by the biogas by installing the biogas digesters at households, thereby reducing the carbon emissions. The date of design certification is 25/08/2020. The project was registered with the first crediting period of 07/12/2018 to 06/12/2023. The crediting period for the registered GS large scale project activity is being renewed (07/12/2023 to 06/12/2028) in accordance with the §5.1.1 (d) of the GS4GG Principles and Requirements version 1.2. /B03-1/ The design of the project technology was assessed through onsite inspection and through the review of documents. The validation team also interviewed representative of the project participant Good Farmland Management Kenya, LTD and Swiss Carbon Value Ltd. to understand the maintenance of the project technology implementation of project activity and other SDG contributions

D.2. Application of selected baseline and monitoring methodology and selected standardized baseline

D.2.1. Applicability of methodology and standardized baseline

Means of validation	Document Review, Interview
Findings	CAR 02 and CAR17 was raised and has been closed satisfactorily.
Conclusion	The methodology "Methodology for animal waste management and biogas application, version: 1.1" has been applied in the project activity. Applicability criteria for the baseline methodologies are assessed by the validation team by means of document review and interview. It is agreed in the validation team's opinion that the project activity fully meets the criteria as described below.

Applicability condition	Justification by PP	VVB Assessment
This methodology applies only to the fraction of the manure which would decay anaerobically in the absence of the project activity, which is established by a survey.	In the absence of the project activity, a fraction of manure was decaying anaerobically. The same can be established by a survey. Hence, this criteria is applicable.	According to the baseline survey **/06/** conducted by the PP and as per the OSV (onsite visit) conducted by the validation team, it is established that in the baseline scenario the manure was decaying anaerobically and in the project scenario the same is used to generate biogas and fulfil the thermal needs.
The methodology offers two methods for baseline emission quantification from AWMS: a. AWMS method 1 - IPCC Tier 1 approach, b. AWMS method 2 - IPCC Tier 2 approach, Where annual emission reduction for methane recovery component is higher than five tonnes of CO2eq per biodigester the AWMS method 2 shall be applied.	The project activity has digesters with capacity 6, 8 & 12 M3 which will involve IPCC Tier 1 approach and 16, 20, 30 & 40 M3 which will involve IPCC Tier 2 approach as annual emission reduction for methane	As per the desk review of the PDD /02/, ER sheet /04/ and OSV conducted by the validation team, project has digesters with capacity 6, 8 & 12 m^3 which involve IPCC tier 1 approach and 16, 20, 30 & 40 m^3

	The project may include both type of biodigesters – applying AWMS method 1 and AWMS method 2 in the same activity. In such cases, the project must clearly differentiate user groups (applying AWMS method 1 and AWMS method 2) and demonstrate compliance to eligibility requirements, quantification and monitoring approach for each group separately as outlined in this methodology.	recovery component is lesser than 5 tonnes of CO2eq for some digesters & higher than 5 tonnes of CO2eq for some digesters.	which will involve IPCC Tier 2 approach and the annual emission reduction for methane recovery component is lesser than 5 tonnes of CO_2eq for digesters with capacity 6, 8 & 12 m^3 & higher than 5 tonnes of CO_2eq for digesters with capacity 16, 20, 30 & 40 m^3.
	The methodology is applicable under the following conditions when applying AWMS method 1: a. The category is limited to measures at individual households, small farms (e.g.,installation of a domestic biogas digester) or livestock farms or institutional settings. b. The activity shall ensure that: i. The digestate must be handled aerobically. In soil application of the final digestate, proper conditions and procedures (resulting in negligible methane emissions) must be ensured. ii. The biogas captured from the biodigesters is utilized (e.g., combusted or burnt for thermal applications).	The project activity has digesters with capacity which will involve both IPCC Tier 1 approach and IPCC Tier 2 approach as annual emission reduction for methane recovery component is lesser than 5 tonnes of CO2eq for some digesters & higher than 5 tonnes of CO2eq for some digesters. Hence, both the methods are getting applied.	As per the desk review of PDD /02/ and the OSV conducted by the validation team the biodigester with capacity 6, 8 & 12 m^3 were installed at small farmhouses. The digestate was handled aerobically and the produced gas was used for thermal needs of the household or institute where it was installed.
	The methodology is applicable under the following conditions when applying AWMS method 2 (Not applicable to AWMS method 1): a. The livestock population in the farm is managed fully or partly under confined conditions; b. Manure or the streams obtained after treatment are not discharged into natural water resources (e.g., river or estuaries); c. The annual average temperature of baseline site where anaerobic manure treatment facility is located is higher than 5°C; d. In the baseline scenario, the retention time of manure waste in the anaerobic treatment system is greater than one month, and if anaerobic lagoons are used in the baseline, their depths are at least 1 m; e. No methane recovery and destruction by flaring or combustion for gainful use takes place in the baseline scenario. f.	The project activity has digesters with capacity which will involve both IPCC Tier 1 approach and IPCC Tier 2 approach as annual emission reduction for methane recovery component is lesser than 5 tonnes of CO2eq for some digesters & higher than 5 tonnes of CO2eq for some digesters. Hence, both the methods are getting applied. Under AWMS method 2, a. The livestock population in the farm is managed fully or partly under confined conditions; hence applicable;	As per the desk review of the PDD/02/ and the OSV: a. The livestock population is managed fully or partly under confined conditions. b. After treatment in the biodigester, the biogas is used for thermal applications and the residue is used as organic fertilizer in the fields, not disposed in any natural water resource. c. The annual average of the project size is higher than 5°C.

	The storage time of the manure after removal from the animal barns, including transportation, should not exceed 45 days before being fed into the anaerobic digester. If the project developer can demonstrate that the dry matter content of the manure when removed from the animal barns is larger than 20%, this time constraint will not apply. g. A technical measure to ensure that the gas holding capacity of the biodigester is sufficiently large to capture the biogas during periods of non-usage. A justification to demonstrate compliance with this requirement pertaining to the biogas digester size shall be included in the PDD.	b. Manure or the streams obtained after treatment are not discharged into natural water resources (e.g., river or estuaries); hence applicable; c. The annual average temperature of baseline site where anaerobic manure treatment facility is located is higher than 5°C; hence, applicable; d. In the baseline scenario, there is no manure waste; this criteria is not applicable e. No methane recovery and destruction by flaring or combustion for gainful use takes place in the baseline scenario; this is not the baseline scenario, hence not applicable. f. The storage time of the manure after removal from the animal barns, including transportation, should not exceed 45 days before being fed into the anaerobic digester. No such transportation is there, hence, this criterion is not applicable. g. A technical measure to ensure that the gas holding capacity of the biodigester is sufficiently large to capture the biogas during periods of non-usage. There is a continuous consumption process for the same, hence this is not applicable.	d. No manure waste handling is conducted in the baseline scenario e. In the baseline scenario No methane recovery and destruction by flaring or combustion for gainful use takes place in the baseline scenario. f. No transportation occurs as the plant is setup in the same facility as the livestock g. Gas is directly supplied to the stove from the digester no storage apparatus is present.
	The activity is implemented by a project developer and can	The details of the project participants	As per the desk review of the

	include additional project participants listed in Appendix 2 of the PDD template. The individual households may be represented collectively by community organizations, etc., but do not individually act as project participants	will be mentioned in the respective section.	PDD/02/ the additional project participants are listed in the appendix 2 of the PDD
	The developer must design incentive mechanism(s)5, which should be effective as fast as possible, for the displacing the use of inefficient baseline stoves or cooking practices by the project cooking devices for daily usage and describe the incentive mechanism(s) in the PDD/VPA-DD at the time of validation.	The emissions and performance report of the burners demonstrate that the IAP is not worsened by the project activity.	As per the desk review of the PDD /02/ and OSV the burners are more efficient than the previous firewood stoves used by the end users.
	To avoid double counting or double claiming, the project developer must: a. clearly communicate its ownership rights and intention of claiming the emission reductions resulting from the project activity to the following parties by contract or clear written assertions in the transaction paperwork: all other project participants; project technology manufacturers; and retailers of the project technology; and b. inform and notify the end users that they cannot claim emission reductions from the project, and c. exclude from the project activity, any biodigester and cookstoves that are included in any other voluntary market or CDM or Article 6 based mechanisms project activity/PoA and strive not to displace the cooking devices of another CDM or voluntary project/PoA. See data and parameters not monitored, Avoidance of double counting or double claiming with other mitigation actions, for details on this demonstration.	The project developer will share the declaration on the ownership rights and intention of claiming the emission reductions resulting from the project activity.	PP has shared the Evidence for avoidance of double counting- double counting letter-signed dated: 16th April 2020 /05/ and the contract with Sistema bio /13/ that represents the avoidance of the double counting and the ownership of the ERs.
	On the basis of assessments of all the above points, validation team confirms that the project activity fully meets the applicability criteria as per the methodology “Methodology for animal waste management and biogas application, version: 1.1/B02/.		

D.2.2. Deviation from methodology

Means of validation	Document Review & Interviews
Findings	--
Conclusion	Not Applicable.

D.2.3. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	Document Review & Interviews
Findings	--
Conclusion	The VVB confirms that no clarification is needed. The assessment of applicability of the methodology is in the section D.2.1 of this report.

D.2.4. Project boundary

Means of validation	Document Review, Interview
Findings	--
Conclusion	The project boundary is the physical, geographical site of the use of biomass or renewable energy., in accordance with the CDM methodology “Methodology for animal waste management and biogas application, version: 1.1”, the project boundary has been clearly defined in the PDD.

D.2.5. Establishment and description of baseline scenario

Means of validation	Document Review, Interview
Findings	CL03 was raised and has been closed satisfactorily.
Conclusion	Validation team confirms that the baseline scenario opted by the project activity /01/ is in accordance with the requirements of the methodology, the Methodology for animal waste management and biogas application, version: 1.1. In accordance with the methodology, it is assumed that in the absence of the project activity, the baseline scenario would be fire wood consumption to meet thermal energy requirement for household cooking. There is no change in the baseline scenario from the registered project activity for the methodology “Methodology for animal waste management and biogas application, version: 1.1 and as demonstrated in the section B.4 of the PDD /02/. The baseline scenario is the usage of non-renewable fuels to meet the energy requirements in households of Kenya along with GHG emissions resulting from animal waste. The Establishment and description of baseline scenario is as per the tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (Version 03.0.1, EB 66, Annex 47. **Step 1: Assess the validity of the current baseline for the next crediting period** The “Procedures for the renewal of the crediting period of a registered CDM project activity” approved by the CDM Executive Board require assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed using the following Sub-steps: **Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies** As the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period, Step 1.2. has been approached. **Step 1.2: Assess the impact of circumstances** The baseline scenario identified at the validation of the project activity was the continuation of the current practice. The baseline scenario has not changed much in favor of the project activity, and due to financial hurdles, it has faced throughout the first crediting period, it is seeking a renewal of crediting period. **Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.** This sub-step is applicable as the baseline scenario identified at the validation of the project activity was the continuation of use of the current equipment(s). **Step 1.4: Assessment of the validity of the data and parameters** It is noticed as per the Gold standard notification that current applied Methodology has displaced the Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC) v3.1 methodology for biogas generation and application for thermal energy project activities. All the data and parameters have

	been updated as per the methodology, "Methodology for animal waste management and biogas application". **Step 2: Update the current baseline and the data and parameters** This step is not applicable as neither of the Steps 1.1, 1.2, 1.3 and/or 1.4 has shown that the current baseline needs to be updated. As per the PDD, the baseline scenario need not to be updated as the neither of the steps 1.1, 1.2, 1.3 and 1.4 has shown the need to update the baseline scenario. As per the PDD /02/ section B.4, "As per the World Bank group report[1], GS lists 36 projects registered in Kenya, of which 33 had certified emission reductions issued. The range of fNRB value is 65 percent to 99 percent, the average is 90 percent, and the mode is 92 percent. Excluding the outlier (65 percent) brings the average to 91.2 percent". The value of fNRB used in the project **"91.2%"** is derived as per the tool 30 v4.0 /B06/. The designated national authority approved a proposed national default value, and the (very similar) values used for that registration are shown in the World Bank report. is deemed appropriate by the validation team.

D.2.6. Demonstration of additionality

Means of validation	Document Review, Interview
Findings	CAR04 and CAR18 was raised and has been closed satisfactorily.
Conclusion	Validation team has assessed the additionality as per Community Services Activity Requirements (Version 1.2) /B04/, paragraph 4.1.9: Validation team confirms that the project activity meets the criterion a "Positive list" of the section 4.1.9 of the Community Services Activity Requirements, version 1.2. as the Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year. As the per year emission reduction of each unit is 10 tCO_2e, the PA is considered as deemed additional and therefore does not require to prove financial additionality at the time of design certification. The ongoing financial need has been demonstrated in the PDD /02/ section B.5.2 as expenses related to the manufacturing, Logistics cost & duties, Unit installation cost, general & administrative costs, Operation & maintenance costs are the key categories for project outgoing cost. The expenses were cross verified during site visit by checking the corresponding documents as well as interviews. Project developer has signed an agreement with the Buyer for the trading of credits which will be generated from the project activity and conducting continuous verification & renewal of crediting period process, which further ensures the requirement of finance derived from emission reduction. The ongoing financial need is described as per the para 4.1.52 of the GS principles and requirements version 1.2, and the same has been validated by VVB for its accuracy through the desk review and stakeholder interviews. .

D.2.7. Ex ante estimation of SDG impacts

Means of validation	Document Review, Interview
Findings	CAR07 was raised and has been closed satisfactorily.
Conclusion	As per the PDD/02/ the SDG parameters are:

[1] https://www.ci-dev.org/sites/default/files/2020-11/CI-DEV_FRACTION%20OF%20NONRENEWABLE%20BIOMASS_R2.pdf; page 30

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
SDG 13: Climate Action (mandatory)	13.2 Emission Reduction	243,516	tCO_2
SDG 8: Decent Work and Economic Growth	8.5 Number of Employment generated	132 jobs	Numbers
SDG 7: Affordable & Clean Energy	7.1 & 7.2 Household access to affordable and clean energy	113,573	household access to affordable and clean energy

Validation team confirms that the outcome for SDG 13 will be quantified as CO_2 emission reductions by applying the methodology "Methodology for animal waste management and biogas application, version: 1.1" /B02/
As per the PDD /02/ and the OSV the distribution of biodigester is confirmed and proves the claim of SDG 7 and the employment contract /12/ is the evidence for the job creation by the project and proves the claim of SDG 8. Further, all three parameters will be verified during the monitoring.

D.2.8. Monitoring plan

Means of validation	Document Review, Interview
Findings	CAR08 was raised and has been closed satisfactorily.
Conclusion	

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 24: Avoidance of double counting or double claiming among project technology end users
Unit/Value	NA
Measurement methods, procedures	NA
Measurement frequency	Once in 5 years
Assessment	A carbon credit waiver /07/ has been provided by the project developer with the supporting documents. And the contract provided by the PP to the end users was also reviewed during the OSV. This is deemed appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 25 : $U_{p,y}$
Unit/Value	90%
Measurement methods, procedures	Monitoring of operationality of the biogas systems,
Measurement frequency	Annual

Assessment	The parameter BGTA 25 : $U_{p,y}$ is determined as per the applied methodology /B04/ and will be monitored annually.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 26 : $N_{LT,y}$
Unit/Value	5.10
Measurement methods, procedures	Monitoring surveys
Measurement frequency	Annually
Assessment	The parameter BGTA 26 : $N_{LT,y}$ is determined as per the applied methodology /B04/ and will be monitored annually.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 28 : ndy
Unit/Value	330 Days
Measurement methods, procedures	Monitoring surveys
Measurement frequency	Annual
Assessment	The parameter BGTA 28 : ndy is determined as per the applied methodology /B04/ and will be monitored annually.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 31 : $MS\%_{i,y}$
Unit/Value	100 %
Measurement methods, procedures	Monitoring surveys
Measurement frequency	Annual
Assessment	Default IPCC value is used for the parameter BGTA 31 : $MS\%_{i,y.}$

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 38 : $N_{b,p,y}$
Unit/Value	330 Days
Measurement methods, procedures	Monitoring surveys
Measurement frequency	Annual

	Assessment	The parameter BGTA 38 : $N_{b,p,y}$ is determined as per the applied methodology /B04/ and will be monitored annually.

D.3. Duration and crediting period

Means of validation	Document Review, Interview
Findings	No findings raised
Conclusion	The start date of the crediting period for the project activity is 06/12/2023 /02/. This is the second crediting period (07/12/2023 to 06/12/2028) for the large-scale project activity and is after the expiry of the first crediting period from 07/12/2018 to 06/12/2023. Start date of the crediting, expected operational lifetime and duration of the crediting period, have been provided in the PDD v.3.2 dated 28/11/2023 /02/; checked and found appropriate to the validation team.

D.4. Environmental impacts

Means of validation	Document Review, Interview
Findings	--
Conclusion	The project activity involves Design Certification Renewal and thus this is not applicable to the project activity.

D.5. Local stakeholder consultation

Means of validation	Document Review, Interview
Findings	--
Conclusion	The project activity involves Design Certification Renewal and thus this is not applicable to the project activity.

SECTION E. Internal quality control

The validation report has passed a technical review and quality review before being submitted to the project participant and UNFCCC Executive Board. The technical review was performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for CDM validation and verification.

Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CDM	Clean Development Mechanism
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DR	Document review
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
GS4GG	Gold standard for global goals
I	Interview
IPCC	Intergovernmental Panel on ClimateChange
IR	Internal resource
MW	Mega Watt
PDD	Project Design Document
PP	Project Participant
OSV	On Site Visit
QC/QA	Quality control /Quality assurance
SS	Sectoral Scope
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVB	Gold Standard Validation and Verification Body
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewer

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Aparna Choudhary

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
03rd May 2023

Expiry Date
04th May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Jaya Rajput

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:

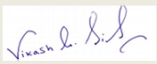
☐ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☐ TA 13.1	☐ TA 13.2
☐ TA 14.1	☐ TA 15.1			

Issue Date

31st March 2023

Expiry Date

30th March 2024



Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Job Muriuki

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 Kenya		

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
03rd May 2023

Expiry Date
02nd May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

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:

☒ 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 Sri Lanka		

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

Appendix 3. Documents reviewed or referenced

Ref no.	Reference Document
/01/	Initial PDD, version 1.0, dated 07/11/2023
/02/	Final PDD, Version 3.2, dated 28/11/2023
/03/	PDD for 1st crediting period v4 dated 01/12/2020
/04/	ER sheet corresponding to /02/
/05/	Evidence for avoidance of double counting- double counting letter- signed dated: 16th April 2020
/06/	Baseline survey report 2021
/07/	Carbon credits waiver
/08/	Manufacturer specification for the biodigester- 1. SISTEMA BIO_spec-08.Nov.2023
/09/	Training records
/10/	Grievance register
/11/	Screenshot of tarrow app
/12/	Employee records
/13/	Contract between Good Farmland Management Kenya, Ltd and Swiss Carbon Value ltd.

Background documents

Ref no.	Reference Document
/B01/	1. GS4GG Validation and Verification Standard version1.0 dated 06/03/2023
/B02/	Methodology for animal waste management and biogas application, version: 1.1
/B03/	1. Gold Standard Principles and Requirements version 1.2, dated 23/10/2019 2. GS Validation & Verification Body Requirements version 2.0, dated 14/01/2021
/B04/	Community Services Activity Requirements (version 1.2) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/

/B05/	1. Standard for sampling and surveys for CDM PAs and PoAs, version 09 2. Guidelines for sampling and surveys for CDM project activities and programme of activities (version 04.0)
/B06/	Calculation of the fraction of non-renewable biomass, v4.0

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

Table 1. FARs from this verification

No FAR has been raised.

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

Table 2. CARs from this verification

CAR ID	01	**Section no.**	KPI table	**Date:** 06/11/2023
Description of CAR				
PP is requested to refer the PDD template v1.5 filling guidelines: 1. PP is requested to provide the Date of design certification in the KPI table. 2. PP is requested to provide the indicator used for SDG parameters in the "Table 1 – Estimated Sustainable Development Contributions" of the PDD and provide the values accordingly for SDG 8 ad SDG 7 throughout the PDD. 3. In the section A.1 of the PDD, the end date of last date is mentioned as 06/Dec/2023, but according to the PDD template guidelines the date should be mentioned as DD/MM/YYYY.				
PP response				**Date: 10/11/2023**
1. PP has updated the date of Date of design certification in the KPI table. PDD version-02, has been submitted to assessment team for further review. 2. PP has revised the Table 1 – Estimated Sustainable Development Contributions" of the PDD. PDD version-02, has been submitted to assessment team for further review. 3. PP has updated the end date of CP (06/12/2023) in DD/MM/YY format in section A.1 of PDD. Further PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				

1. PDD version-02

VVB assessment	**Date:** 14/11/2023

1. PP has mentioned the Date of design certification in the KPI table. Hence, CAR01 part 01 is closed.
2. PP is requested to mention the SDG impact number in the Table 1 – Estimated Sustainable Development Contributions. Hence, CAR01 part 2 remains open.
3. PP has update the format of the date in the section A.1 of the PDD. Hence, CAR01 part 03 is closed.

PP response	1. **Date: 19/11/2023**

2. PP has revised Table 1 – Estimated Sustainable Development Contributions" of the PDD. PDD version-03 has been submitted.

Documentation provided by PP

2. PDD version-03

VVB assessment	3. **Date:**

4. PP has mentioned the SDG impact number in the table 1 of the PDD version 3,
5. Hence, CAR01 is closed.

CAR ID	02	**Section no.**	A.4	**Date:** 06/11/2023

Description of CAR

In the section A.4 "Scale of the project" there is no information provided in the PD.
PP is requested to provide required information in the section A.4 according to the para 3.1.1 (c) of the GS4GG principles and requirements v1.2 "Projects may be developed at any scale although certain rules, requirements and limitations may apply under specific Activity Requirements, Impact Quantification Methodologies and Products Requirements." and according to the filling guidelines of the PDD template v1.5

PP response	**Date: 10/11/2023**

The project falls under waste handling and disposal, end use energy efficiency with the total installed energy output of 917.84 $MW_{thermal}$. Hence, the project falls under large scale projects. For the same PP has updated the section A.4 of the PDD. Further PDD version-02, has been submitted to assessment team for further review.

Documentation provided by PP

1. PDD version -02
2. ER sheet- 02

VVB assessment	**Date: 14/11/2023**

PP has provided the information for the scale of the project in the section A.4 of the PDD v2.0, PP is requested to mention the source or reference used to determine the scale of the project in the PDD.

Hence, CAR02 remains open.

PP response	**Date: 19/11/2023**

PP has revised the section A.4 of the PDD and mentioned the reference and source to determine the scale of the project activity. PDD version-03 has been submitted.
Documentation provided by PP
PDD version-03
VVB assessment **Date: 21/11/2023**
PP has mentioned the reference to the information in the section A.4. Hence, CAR02 is closed.

CAR ID	03	**Section no.**	B.3	**Date:** 06/11/2023
Description of CAR				
In the section B.3 of the PDD the table for GHGs included, the source "Production of fuel, transport of fuel" is not provided, PP is requested to kindly refer the Table 1 section 3.2 of the applied methodology 'Methodology for animal waste management and biogas application, version: 1.1'.				
PP response				**Date: 10/11/2023**
PP has revised the table in section B.3 of the PDD and included the "Production of fuel, transport of fuel". Further, please note that "Production of fuel, transport of fuel" is not applicable for the current project activity. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
1. PDD version -02				
VVB assessment				**Date:** 14/11/2023
PP has mentioned the "Production of fuel, transport of fuel" category in the project boundary. PP is requested to provide explanation for the exclusion of the criteria in the PDD section B.3. Hence, CAR03 remains open.				
PP response				**Date: 19/11/2023**
PP has revised the table in section B.3 of the PDD and provided justification for exclusion of the criteria "Production of fuel, transport of fuel". PDD version-03 has been submitted to the assessment team for further review.				
Documentation provided by PP				
PDD version -03				
VVB assessment				**Date: 21/11/2023**
PP has mentioned the justification for "Production of fuel, transport of fuel". Hence, CAR03 is closed.				

CAR ID	04	**Section no.**	A.5, B.5	**Date:** 06/11/2023
Description of CAR				
PP has not used the GS4GG terminology throughout the PDD, as **PO** is not a term under GS4GG terminology. Please refer the following statements to be reviewed: 1. "The project is implemented by the PO. Carbon waiver has been signed by the project owner and carbon rights are available with Good Farmland Management Kenya, LTD (local entity)." In the section A.5 2. "The legal ownership of the products generated under gold standard certification remains with PO"				
PP response				**Date: 10/11/2023**
PP has revised the section A.5 and section B.5 of the PDD. Further, PP has mentioned the project developer (PD i.e., Good				

Farmland Management Kenya, LTD) terminology throughout the PDD. Further, PDD version-02, has been submitted to assessment team for further review.
Documentation provided by PP
1. PDD version-02
VVB assessment **Date:** 14/11/2023
PP has updated the PDD and used the GS4GG terminology throughout. Hence, CAR04 is closed.

CAR ID	05	**Section no.**	B.5.2	**Date:** 06/11/2023
Description of CAR				
The section B.5.2 of the PDD is not completed effectively, in line with the GS4GG principles. PP is requested to review the section B.5.2 "Ongoing Financial Need" referring to the para 4.1.52 of GS4GG Principles and requirements v1.2 which states that "Ongoing Financial Need shall be demonstrated at Design Certification Renewal. The project shall provide a qualitative narrative, supported by an overview of project finances, that demonstrates how the finance derived Gold Standard Certification is material to the ongoing sustainability of the Project. The narrative may include, but not limited to the following; (a) Information highlighting the key categories and amounts or relative proportions (%) of project income and outgoings, including the relative proportion of certification related cost and revenue. (b) Description on how finance derived Gold Standard Certification contributes to or is being used to sustain or enhance the project. (c) Where no revenue is realised from Gold Standard certification during a given period, this would be considered a FAR for the next Issuance." PP has stated "The Project developer will submit an assessment for Ongoing Financial Need as per the current methodology." In the section B.5.2 of the PDD.				
PP response				**Date: 10/11/2023**
(a) The expenses related to the manufacturing, Logistics cost & duties, Unit installation cost, general & administrative costs, Operation & maintenance costs are the key categories for project outgoing cost in major. The supporting for the same will be provided. (b) The project developer has signed an agreement with the Buyer for the trading of credits which will be generated from the project activity and conducting continuous verification & renewal of crediting period process, which further ensures the requirement of finance derived from Glod Standard certification. (c) Currently, last verification from first CP & RCP process is undergoing and subsequent Annual report has also been submitted to GS. This implies that there is a need for continuous financial flow and if any realization has not happened yet, it is because of the ongoing verification completion requirement. In addition a signed statement highlighting the financial assessment can be provided.				
Documentation provided by PP				
1. PDD version -02				
VVB assessment				**Date:** 14/11/2023
Information regarding "Ongoing financial needs" are not mentioned in the section B.5.2 of the PDD v2.0, PP is requested to provide the information regarding ongoing financial needs in the PDD. CAR05 remains open.				
PP response				**Date: 19/11/2023**
The information regarding "Ongoing financial needs" has been mentioned in section B.5.2 of the PDD.				

Documentation provided by PP	
PDD version -03	
VVB assessment	**Date: 21/11/2023**
PP has mentioned the required information in the section B.5.2 of the PDD. Hence, CAR05 is closed.	

CAR ID	06	**Section no.**	B.6.2	**Date:** 06/11/2023

Description of CAR

PP is requested to revise the section B.6.2 of the PDD according to the section 3.11 of the applied methodology "Methodology for animal waste management and biogas application" v1.1. The discrepancies are mentioned below:

1. PP has not provided information on BGTA 4 "Project technology description" in the section B.6.2 of the PDD.

2. In the section B.6.2 of the PDD, PP has mentioned the source as "Manufacturer specifications" for BGTA 5, but in the manufacturer specs provided in the supporting document by the PP, the expected life is not mentioned. PP is requested to provide reference document for BGTA 5.

3. In the section B.6.2 of the PDD, BGTA 7 $GWPCH_4$ is not included, but in the equations used in the section B.6.1, EQ 1 and EQ 4 of the applied methodology "Methodology for animal waste management and biogas application" v1.1.

4. Value applied for BGTA 9 EF_{LT} is not provided in the section B.6.2, but in the ER sheet provided by PP the value for EF_{LT} is given as 8 kgs.

5. For BGTA 10 $VS_{rate,LT}$, representation of the parameter in the PDD section B.6.2 is not as per the section 3.11 of the applied methodology, and the values applied are not provided in the PDD, but in the ER sheet provided by the PP, the value for BGTA 10 $VS_{rate,LT}$ is given as 5.10 for both AWMS method 1&2

6. BGTA 11 $B_{0,LT}$ and BGTA 12 $MCF_{j,k}$ are not included in the section B.6.2. But according to the applied methodology $B_{0,LT}$ and $MCF_{j,k}$ are used in the equation 4 or the AWMS method 2. The values for these parameters are also present in the ER sheet provided by the PP, also the representation of the mentioned parameters in the ER sheet are not in line with the applied methodology "Methodology for animal waste management and biogas application" v1.1.

PP response	**Date: 10/11/2023**

1. PP has updated the section B.6.2 of the PDD and included the BGTA 4 "Project technology description" in the section B.6.2 of the PDD. Further, PDD version-02, has been submitted to assessment team for further review.

2. PP has submitted the manufacture product catalogue, in which the product lifetime is mentioned (at page 12). As per the product catalogue, all biodigester have a lifespan up to 15 years.

3. PP has updated the section B.6.2 and included the BGTA 7 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.

4. PP has updated the table BGTA 9 EF_{LT} in section B.6.2 of PDD. Further, PDD version-02, has been submitted to assessment team for further review.

5. PP has updated the table BGTA 10 $VS_{rate,LT}$ in section B.6.2 of PDD. It is noticed that the value 5.10 is taken from the IPCC: default value, Volume-4, Chapter10, table 10.A-4. Same value has been applied throughout the PDD and ER sheet. Further, PDD version-02, has been submitted to assessment team for further review.

6. PP has updated the section B.6.2 of the PDD and included the BGTA 11 $B0,LT$ and BGTA 12.
6. The value for BGTA 11 & BGTA 12 is as per the Table 10A-4 Manure Management Methane Emission Factor Derivation

for Dairy Cows- Chapter 10: Emissions from Livestock and Manure Management and TABLE 10.17 and methane conversion Factors for manure management systems, 2019 Refinement to the IPCC Guidelines for National Greenhouse Gas Inventories, respectively.

Documentation provided by PP

1. Product catalogue
2. PDD version -02

VVB assessment | **Date:** 14/11/2023

1. PP has provided information on BGTA 4 “Project technology description” in the section B.6.2 of the PDD. Hence, CAR06 part 1 is closed.

2. PP has provided the manufacturer specification and provided value for lifetime of the product in the section B.6.2. Hence, CAR06 part 2 is closed.

3. PP has provided value of BGTA 7 in the PDD. Hence, CAR06 part 3 is closed.

4. Value applied for BGTA 9 EF_{LT} is provided in the section B.6.2, but in the ER sheet provided by PP the value for EF_{LT} is given as 8 kgs. Hence, CAR06 part 4 is closed.

5. For BGTA 10 $VS_{rate,LT}$, representation of the parameter in the PDD section B.6.2 is not as per the section 3.11 of the applied methodology, PP is requested to update the representation of the parameter as per the applied methodology. Hence, CAR06 part 5 remains open.

6. The value for parameters BGTA 11 and BGTA 12 is provided in the PDD section B.6.2, which is consistent with the value in the ER sheets. The representation of the these parameters in the BE tier 2 tab of the ER sheet is not appropriate. PP is requested to make the changes in the representation of these parameters in the ER sheet. Hence, CAR06 part 6 remains open.

7. PP is requested to include all parameters from the methodology section 3.1.1 of the applied methodology in which the ‘any comment’ section says “Applicable for AWMS method 1 and AWMS method 2” in the PDD section B.6.2. CAR06 part 7 is open.

PP is requested to use the representation of the ex-ante and ex-post parameters according to the applied methodology.

PP response | **Date:** 19/11/2023

5. For BGTA 10 $VS_{rate,LT}$,, PP has updated the representation of the parameter in the PDD as per the applied methodology.

6. The representation of parameters BGTA 11 and BGTA 12 in the BE tier 2 tab of the ER sheet has been revised.

7. PP has revised all parameters from the methodology section 3.1.1 of the applied methodology in which the ‘any comment’ section says “Applicable for AWMS method 1 and AWMS method 2” in the PDD section B.6.2.

Documentation provided by PP

7. PDD version -03

8. ER Sheet version 03

VVB assessment | **Date: 21/11/2023**

PP is requested to include all parameters from the methodology section 3.1.1 of the applied methodology in which

the 'any comment' section says "Applicable for AWMS method 1 and AWMS method 2" in the PDD section B.6.2. CAR06 part 7 is open.	
PP response	**Date: 23**/11/2023
PP has incorporated all the parameters from the methodology section 3.1.1 in the revised PDD.	
Documentation provided by PP	
PDD version -03.1	
VVB assessment	**Date: 24/11/2023**
PP has mentioned the required ex-ante parameters in the PDD section B.6.2. Hence, CAR06 is closed	

CAR ID	07	**Section no.**	B.6.4	**Date:** 06/11/2023
Description of CAR				
The title of the section B.6.4 of the PDD says "Summary of ex ante estimates of each SDG Impact" only SDG 13 impacts are shown, PP is requested to revise the section and provide ex-ante estimates for all the SDG impacts claimed.				
PP response				**Date: 10/11/2023**
PP has revised the section B.6.4. of the PDD and included all SDG impact. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
1. PDD version 02				
VVB assessment				**Date:** 14/11/2023
PP has mentioned the information on the SDG impacts in the section B.6.4 of the PDD. Hence, CAR07 is closed.				

CAR ID	08	**Section no.**	B.7	**Date:** 06/11/2023
Description of CAR				

PP is requested to review the section B.7 of the PDD according to the section 4.2 of the applied methodology "Methodology for animal waste management and biogas application" v1.1 in the following discrepancies:

1. PP has not provided information on BGTA 24 "Avoidance of double counting or double claiming among project technology end users".
2. PP has not provided values applied for BGTA 26 "NLT,y".
3. PP has not provided information on the following BGTA 25 "$U_{p,y}$", the parameter is used in the ER sheet provided by the PP however it is not reported in section B.7 of the PDD.
4. PP has not provided information on BGTA 31 "$MS\%_{i,y}$" , the parameter is used in the ER sheet provided by the PP but not reported in section B.7 of the PDD.
5. PP has not provided information on BGTA 38 "$N_{b,p,y}$" , the parameter is used in the ER sheet provided by the PP but not reported in section B.7 of the PDD.
6. PP has not provided information on BGTA 41 "$fNRB_{,i,y}$" , the parameter is used in the ER sheet provided by the PP but not reported in section B.7 of the PDD.

PP response	**Date: 10/11/2023**

1. PP has updated the section B.7 and included the table BGTA 24 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.
2. PP has updated the section B.7 and included the value for BGTA 26 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.
3. PP has updated the section B.7 and included the table BGTA 25 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.
4. PP has updated the section B.7 and included the table BGTA 31 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.
5. PP has updated the section B.7 and included the table BGTA 38 in PDD. Further, PDD version-02, has been submitted to assessment team for further review.
6. PP has updated the section B.7 BGTA 41: for the current project activity, fNRB (Fractional non-renewability status of woody biomass) fuel during year y, in case the baseline fuel is wood, parameter ID BGTA 41 is considered as a fixed and ex-ante parameter, which is fixed for the entire Crediting period)

Documentation provided by PP

1. PDD version 2

VVB assessment	**Date:** 14/11/2023

PP has made the required changes in the PDD section B.7 for the points 1-6 of CAR 08

PP is requested to include all parameters from the methodology section 4.2 of the applied methodology in which the 'any comment' section says "Applicable for AWMS method 1 and AWMS method 2" in the PDD section B.7.

Hence, CAR08 remains open.

PP response	**Date:** 19/11/2023

PP has revised all parameters from the methodology section 4.2 of the applied methodology in which the 'any comment' section says "Applicable for AWMS method 1 and AWMS method 2" in the PDD section B.6.2.

Documentation provided by PP

9. PDD version -03

VVB assessment	**Date: 21/11/2023**

PP is requested to include all parameters from the methodology section 4.2 of the applied methodology in which the 'any comment' section says "Applicable for AWMS method 1 and AWMS method 2" in the PDD section B.7.

Hence, CAR08 remains open.

PP response	**Date: 23/11/2023**

PP has incorporated all the parameters from the methodology section 4.2 of the applied methodology in the revised PDD.

Documentation provided by PP
PDD version -03.1

VVB assessment	**Date: 24/11/2023**
PP has mentioned the required parameter in the PDD section B.7 of the PDD	

Hence CAR08 is closed.

CAR ID	09	**Section no.**	B.7.2	**Date:** 06/11/2023
Description of CAR				
In the section B.7.2 of the PDD, version number of standard “Sampling and surveys for CDM project activities and programmes of activities” is mentioned as version 8.0, the latest version is version 9.0. PP is requested to use the latest version of the said standard.				
PP response				**Date: 10/11/2023**
PP has revised the section B.7.2 of the PDD. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
1. PDD version 02				
VVB assessment				**Date:** 14/11/2023
PP has made the required changes in the section B.7.2 of the PDD. Hence, CAR09 is closed.				

CAR ID	10	**Section no.**	B.7.2	**Date:** 06/11/2023
Description of CAR				
In the section B.7.2 of the PDD, it is mentioned that the distribution is handled by Sistemabio, and, as observed on the site visit the baseline survey was also conducted by Sistemabio, PP is requested to provide a counter signed contract with Sistemabio regarding the services they are providing.				
PP response				**Date: 10/11/2023**
Copy of agreement between Sistemabio and Buyer provided by PP dated 30/03/2019 was verified during the monitoring period 2 of previous crediting period by Carbon Check (https://platform.sustain-cert.com/public-project/1874)				
Documentation provided by PP				
FVR for MP 2 of CP1				
VVB assessment				**Date:** 14/11/2023
PP is requested to provide the contract with Sistemabio for validation of the RCP as a supporting document. Hence, CAR10 remains open.				
PP response				**Date:** 19/11/2023
Copy of the agreement for RCP has been provided.				
Documentation provided by PP				
Copy of the Agreement				
VVB assessment				**Date:**
PP is requested to provide the contract with Sistema.bio for validation of the RCP as a supporting document. Hence, CAR10 remains open.				
PP response				**Date: 23/11/2023**
Copy of the agreement for RCP has been provided.				
Documentation provided by PP				
Copy of the Agreement				
VVB assessment				**Date: 24/11/2023**

PP has provided the required document with the supporting documents. Hence, CAR10 is closed.

CAR ID	11	**Section no.**	B.7.2	**Date:** 06/11/2023
Description of CAR				
In the section C.2.1 of the PDD, PP is requested to mention if the crediting period is renewable or not, as per the para 5.1.1 of the GS4GG principles and requirements v1.2 which states that “Gold Standard for the Global Goals Project Certification is based on a five year renewable certification cycle”				
PP response				**Date: 10/11/2023**
PP has revised the section C.2.1 of the PDD. Crediting period is renewable and the same has been updated in the PDD. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
10. PDD version 2				
VVB assessment				**Date:** 14/11/2023
PP has mentioned the required information in the section B.7.2 of the PDD. Hence, CAR11 is closed.				

CAR ID	12	**Section no.**	D.1	**Date:** 06/11/2023
Description of CAR				
As mentioned in the section D.1 of the PDD “The Project Developer ensures the training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures in alignment with the local rules”, PP is requested to provide the training records for the training sessions conducted.				
PP response				**Date: 10/11/2023**
PP has submitted the training details and training photographs along with this submission. Drive folder : Click here				
Documentation provided by PP				
1. Training data 2. Training photographs				
VVB assessment				**Date:** 14/11/2023
PP has provided the training data and photographs in the supporting documents. Hence, CAR12 is closed.				

CAR ID	13	**Section no.**	E.2	**Date:** 06/11/2023
Description of CAR				
As per the observation of the validation team on the site visit, it was mentioned that the grievances are maintained on an app called “Tarwo”, also, in the section E.2 of the PDD, PP has mentioned “Grievance Register is maintained at project site office and is open for all.”. PP is requested to provide the information of the app used in the section E.2 of the PDD, provide Screenshots of the app, and pictures of the grievance register maintained by the PP.				
PP response				**Date: 10/11/2023**
PP has revised the section E.2 of the PDD. Further PP has submitted the Screenshots of the app along with this submission. Along with the Tarowork App, PP is also maintaining the grievance register at project site office and which is open for all.				

Documentation provided by PP	
1. Screenshot of Tarowork App Drive folder :	
VVB assessment	**Date:** 14/11/2023
PP has provided the screenshots of the app, but the mentioned grievance register and is not provided in the supporting docs. Hence, CAR13 remains open.	
PP response	**Date: 19/11/2023**
The grievance register has been provided.	
Documentation provided by PP	
Grievance Register copy	
VVB assessment	**Date: 21/11/2023**
PP has provided the copy of grievance register in the supporting document. Hence, CAR13 is closed.	

CAR ID	14	**Section no.**	Appendix 1	**Date:** 06/11/2023
Description of CAR				
In the appendix 1 of the PDD, PP has not selected any option for the point P.9.12.2. PP is requested to review the point and select appropriate option.				
PP response				**Date: 10/11/2023**
PP has revised the section point P.9.12.2 of appendix 1. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
1. PDD version 2				
VVB assessment				**Date:** 14/11/2023
PP has made the required changes. Hence, CAR14 is closed.				

CAR ID	15	**Section no.**	Appendix 2	**Date:** 06/11/2023
Description of CAR				
In the appendix 2 of the PDD, the information regarding the contact information does not seem to be filled correctly, PP is requested to revise the section appropriately.				
PP response				**Date: 10/11/2023**
PP has revised the section appendix 2 of the PDD. Further, PDD version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
1. PDD version 2				
VVB assessment				**Date:** 14/11/2023
PP has provided the contact information in the appendix 2 of the PDD. Hence, CAR15 is closed.				

CAR ID	16	Section no.	B.6	Date: 17/11/2023

Description of CAR

1. PP is requested to provide employment records claimed for SDG8.
2. PP is requested to fill in the "MOST RELEVANT SDG TARGET" column in the section B.6 of the PDD

PP response — **Date:** 19/11/2023

1. The employment record has been provided.
2. The section B.6 of the PDD has been revised and version 03 has been provided.

Documentation provided by PP

Employee records

PDD version 03

VVB assessment — **Date: 21/11/2023**

PP is requested to share employment contract in the supporting document for SDG 8.

Hence, CAR16 remains open.

PP response — **Date: 23/11/2023**

Employment contract has been provided.

Documentation provided by PP

Employee Contract

VVB assessment — **Date: 24/11/2023**

PP has provided employment contract with the supporting documents.

Hence CAR16 is closed.

CAR ID	17	Section no.	B.2	Date: 17/11/2023

Description of CAR

PP is requested to update the section B.2 based on the findings listed below:

1. As Per the ER sheet provided the Tier 1 approach is used for biodigester of sizes from 6m3 to 12m3, and tier 2 approach for larger sizes, PP is requested to include that information in the condition section of the applicability where applicable.
2. For applicability criteria 4, the condition provided does not seem appropriate, as criteria talks about the conditions in which methodology will be applicable while the justification provided by PP does not talks about any of the mentioned condition in applied methodology. PP is requested to review section B.2 criteria 4 of the PDD v2.0.
3. The serial number of the applicability conditions are not in order, PP is requested to update the serial numbers.

PP response — **Date:** 19/11/2023

1. The justification for applying Tier 1 approach for biodigester of sizes from 6m3 to 12m3, and tier 2 approach for larger sizes has been incorporated in the condition section of the applicability in the PDD, section B.2, applicability criteria 4.
2. For applicability criteria 4, the PDD has been revised and PDD version 03 has been provided.

3. The serial number of the applicability conditions has been made consistent.
Documentation provided by PP
PDD version 03
VVB assessment **Date:**
PP is requested to mention the sizes of biodigester in the section B.2 and A.1 that are used in both tier 1 and tier 2 approach. Hence, CAR 17 remains open.
PP response **Date: 23/11/2023**
PP has incorporated the sizes of biodigesters in the section B.2 and A.1 of the revised PDD that are used in both tier 1 and tier 2 approach.
Documentation provided by PP
PDD version 03.1
VVB assessment **Date: 24/11/2023**
PP has mentioned the required information in the section A.1 and B.2 of the PDD. Hence, CAR17 is closed.

CAR ID	18	**Section no.**	B.5	**Date:** 17/11/2023
Description of CAR				
PP is requested to mention the average annual energy savings or ER per year of each unit to support the statement "the project meets the criteria 3 because the project activity is solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year."				
PP response **Date:** 19/11/2023				
The thermal energy calculation has been mentioned in the ER sheet. Please refer to cell no. G5,G6,G7 in BE Tier 1 and G5,G6,G7 & G8 in BE Tier 2.				
Documentation provided by PP				
ER Sheet version 03				
VVB assessment **Date:**				
PP is requested to mention the average annual energy savings or ER per year of each unit to support the statement "the project meets the criteria 3 because the project activity is solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year." Hence, CAR18 remains open.				
PP response **Date: 23/11/2023**				
The ER per year of each unit has been mentioned in the revised PDD, section B.5.				
Documentation provided by PP				
PDD version 03.1 ER Sheet version 03.1				
VVB assessment **Date: 24/11/2023**				
PP has mentioned the information on the ER per unit in the section B.5 of the PDD. Hence CAR18 is closed.				

Table 3. CL from this verification

CL ID	01	**Section no.**	KPI Table	**Date:** 06/11/2023
Description of CL				
The value of the ER in the CP, given in section A.1.1 are different form the value provided in the "Table 1 – Estimated Sustainable Development Contributions". PP is requested review this discrepancy.				
PP response				**Date: 10/11/2023**
11. PP has updated the PDD and ER sheet. Further, PDD & ER sheet version-02, has been submitted to assessment team for further review.				
Documentation provided by PP				
2. PDD version -02 3. ER sheet version-02				
VVB assessment				**Date:** 14/11/2023
The value of total ER in this CP provided in the section A.1 is not in line with the value in the ER sheet. PP is requested to clarify this discrepancy. Hence, CL01 remains open.				
PP response				**Date: 14/11/2023**
The same has been made consistent. The PDD version 03 has been provided.				
Documentation provided by PP				
PDD version 03				
VVB assessment				**Date: 21/11/2023**
Value for ERs is updated and consistent in the PDD and ER sheet. Hence, CL01 is closed.				

CL ID	02	**Section no.**	B.1	**Date:** 06/11/2023
Description of CL				
In the section B.1, PP has mentioned the TPDDTEC as the methodology but according to the KPI table the methodology used for the project is Methodology for animal waste management and biogas application, version: 1.1"", PP is requested to clarify which methodology is used.				
PP response				**Date: 10/11/2023**
12. PP has revised the section B.1 of PDD. As per the Gold standard notification, current applied Methodology is displaced the Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC) v3.1 methodology for biogas generation and application for thermal energy project activities. Source:https://www.goldstandard.org/our-work/innovations-consultations/methodology-animal-manure-management-and-biogas-use-thermal Further, PDD version-02, has been submitted to assessment team for further review. 13.				

Documentation provided by PP	
1. PDD version 2	
VVB assessment	**Date:** 14/11/2023
In the section B.3 the applied methodology is mentioned as TPDDTEC, PP is requested to clarify this discrepancy. Hence, CL02 remains open	
PP response	**Date:** 19/11/2023
14. PP has revised section B.3 of the PDD. PDD version 03 has been submitted.	
Documentation provided by PP	
15. PDD version 03	
VVB assessment	**Date:** 21/11/2023
PP has mentioned the applied methodology in the section B.3. Hence, CL02 is closed.	

CL ID	03	**Section no.**	B.4	**Date:** 06/11/2023
Description of CL				
In the section B.4 PP has mentioned “Biomass contribution to Kenya’s final energy demand is nearly 68%. The Default FNRB for Kenya has been used accordingly.”. However, as per the supporting documents “Information note: Development of default values for fraction of non-renewable biomass v1.0” provided by the PP for fNRB value gives the value for Kenya as 45% in the appendix 1 table 1 PP is requested to clarify on this discrepancy.				
PP response				**Date: 10/11/2023**
As per the World Bank group report, GS lists 36 projects registered in Kenya, of which 33 had certified emission reductions issued. The range of fNRB value is 65 percent to 99 percent, the average is 90 percent, and the mode is 92 percent. Excluding the outlier (65 percent) brings the average to 91.2 percent (https://www.ci-dev.org/sites/default/files/2020-11/CI-DEV_FRACTION%20OF%20NONRENEWABLE%20BIOMASS_R2.pdf; page 30). Hence, 91.2% has been applied for the project activity. The PDD has been revised accordingly.				
Documentation provided by PP				
1. PDD version -02 2. ER sheet version-02				
VVB assessment				**Date:** 14/11/2023
The value of fNRB used in the project **“91.2%”** is derived as per the tool 30 v4.0 /B06/. The designated national authority approved a proposed national default value, and the (very similar) values used for that registration are shown in the World Bank report (https://www.ci-dev.org/sites/default/files/2020-11/CI-DEV_FRACTION%20OF%20NONRENEWABLE%20BIOMASS_R2.pdf; page 30). is deemed appropriate by the validation team. Hence, CL03 is closed				

CL ID	04	Section no.	B.4	Date: 16/11/2023
Description of CL				
In the section B.4 PP has mentioned “Biomass contribution to Kenya’s final energy demand is nearly 68%. The Default FNRB for Kenya has been used accordingly.” PP is requested to provide the source for the energy demand value provided in the PDD version 2.				
PP response				**Date:** 19/11/2023
16. The section B.4 of the PDD has been revised and PDD version 03 has been submitted.				
Documentation provided by PP				
PDD version 03				
VVB assessment				**Date:** 21/11/2023
Section B.4 has been revised and reference has been added for the fNRB value. Hence, CL04 has been closed.				

CL ID	05	Section no.	B.5	Date: 16/11/2023
Description of CL				
In the section B.5 it is mentioned “As the baseline fuel reported in the baseline survey is firewood and LPG by the end users.”, in the section A.1 it is mentioned “As per the Survey, firewood was the main fuel used to suffice domestic needs which was sourced from nearby forests and open markets.” PP is requested to clarify the discrepancy of the baseline fuel.				
PP response				**Date:** 19/11/2023
17. The section B.5 of the PDD has been revised and PDD version 03 has been submitted.				
Documentation provided by PP				
PDD version 03				
VVB assessment				**Date:** 21/11/2023
PP has updated the section B.5 of the PDD and the baseline fuel is established as fuelwood. Hence, CL05 is closed				

CL ID	06	Section no.	B.6.1, ER sheet	Date: 16/11/2023
Description of CL				
In the ER sheet the tab “BE tier 1”, cells D5, D6, D7 values are used in the calculation of $SE_{b,y,CO2}$ $SE_{b,y,non-CO2}$ in the eq 7, according to the methodology the parameter $P_{b,l,y}$ is used which is mentioned as 0.01 in the cell F42, which bis calculated as “='KPT Test Results'!C12/1000”, while in the cell C12 of the tab “KPT test result” the value is 8.413. As per the methodology “$P_{b,l,y}$” is used in for calculation of $SE_{b,y,CO2}$ $SE_{b,y,non-CO2,}$ but in the ER sheet values from D5 D6 D7 are used which are not average values as per the description of “Pb,l,y” which is “Average yearly consumption of baseline fuel i per household before the start of the project activity or at the renewal of each crediting period, whichever is later”. Same discrepancy has been noted in the Tier 2 calculation. PP is requested to clarify this discrepancy.				
PP response				**Date:** 19/11/2023
18. The ER sheet has been revised and version 03 has been submitted for further review.				
Documentation provided by PP				

ER sheet- 03	
VVB assessment	**Date:**
PP has used keyed in values in the tab BE tier 1, cells D5, D6, D7 and tab BE tier 1, cells D5, D6, D7, D8 of the ER sheet, PP is requested to use referenced values. CL06 remains open.	
PP response	**Date: 23/11/2023**
The ER sheet has been revised and reference has been provided in version 03.1 and the same has been submitted for further review.	
Documentation provided by PP	
ER sheet- 03.1	
VVB assessment	**Date: 24/11/2023**
PP has made the required changes in the ER sheet. Hence, CL06 is closed.	

Appendix 5: Assessment of data and parameters

Data and parameters fixed ex-ante

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA 1: Avoidance of double counting or double claiming among project participants
Unit/Value	NA
Verified Source of data	Declaration by the Project developer
Assessment	A declaration for avoidance of double counting or double claiming among the project participants/05/ by the project developer has been provided with the supporting documents dated 16/04/2020 which states that the project titled “Household and Commercial Biogas Plants in Kenya (GS7587)” will not be registered as a single project activity nor as a CPA/VPA under another scheme or any CDM or voluntary carbon scheme. The declaration is deemed appropriate by the validation team.

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA3: Regulatory framework for provision of animal waste management and thermal energy services
Unit/Value	NA
Verified Source of data	NA
Assessment	The details on the parameter BGTA3 are provided in the section B.4 of the PDD /02/.

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA 4: Project technology description
Unit/Value	• Manufacturer name: Sistema Bio • Technology type: Biodigester • capacity characteristics (m3):6,8,12,16,20,30,40 • continuous useful energy output demonstration: • Rated thermal efficiency of biogas stove: 40.32% • All biodigester units are manufactured by Sistema Bio is ISO 9001 certified.
Verified Source of data	Manufacturer specifications
Assessment	The technology description provided in the PDD /02/ and the manufacturer specification /08/ are found to be appropriate and the same was observed on the OSV conducted by the validation team.

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA 5 : Expected technical life of project technology
Unit/Value	15 Years
Verified Source of data	Manufacturer specifications
Assessment	As per the manufacturer specification /08/ provided in the supporting documents, the lifetime of the project technology is 15 years and deemed appropriate by the validation team

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA 6 : Baseline scenario survey results
Unit/Value	NA
Verified Source of data	Baseline scenario survey
Assessment	The baseline survey /06/ conducted by PP is in line with the applied methodology /B02/ deemed appropriate by the validation team.

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter - Description	BGTA 7 : GWP_{CH4}
Unit/Value	28 tCO_2e per tCH_4
Verified Source of data	IPCC AR5 report
Assessment	The value used for Global Warming Potential (GWP) of methane applicable to the crediting period is a default value used as per the applied methodology /B02/, the value for BGTA 7 : $GWPCH_4$ is deemed to be appropriate by the validation team.

Relevant SDG Indicator	SDG 13. Climate Action
Data/parameter - Description	BGTA 8 : $MS\%_{Bl,j}$
Unit/Value	100%
Verified Source of data	Default value
Assessment	As per the PDD/02/, default value has been used as according to the applied methodology /B02/. The value for BGTA 8 : $MS\%_{Bl,j}$ is deemed to be appropriate by the validation team.

Relevant SDG Indicator	SDG 13. Climate Action
Data/parameter - Description	BGTA 9: EF_{LT}
Unit/Value	8 kgCH4 per animal per year for livestock type LT

Verified Source of data	Default value
Assessment	The value for the parameter BGTA 9: EF_{LT} is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 9: EF_{LT} deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 10: $VS_{rate,LT}$
Unit/Value	5.10 kgVS/(1000kg animal mass)/ day
Verified Source of data	Default value
Assessment	The value for the parameter BGTA 10: $VS_{rate,LT}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 10: $VS_{rate,LT}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 11: $B_{0,LT}$
Unit/Value	0.13 m^3 CH_4/kg-dm
Verified Source of data	As per IPCC
Assessment	The value for the parameter BGTA 11: $B_{0,LT}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 11: $B_{0,LT}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 12: $MCF_{j,k}$
Unit/Value	1%
Verified Source of data	As per IPCC
Assessment	The value for the parameter BGTA 12: $MCF_{j,k}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 12: $MCF_{j,k}$ deemed to be appropriate by the validation team.

Parameters related to Thermal application

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 13 : $EF_{b,i,CO2}$
Unit/Value	Wood: Methodology default, 112 tCO_2/TJ

Verified Source of data	Default value
Assessment	The value for the parameter BGTA 13 : $EF_{b,i,CO2}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 13 : $EF_{b,i,CO2}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 14 : $EF_{b,i,non-CO2}$
Unit/Value	Wood: Methodology default: - 9.46 tCO_2e/TJ (AR5 GWP)
Verified Source of data	Default value
Assessment	The value for the parameter BGTA 14 : $EF_{b,i,non-CO2}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 14: $EF_{b,i,non-CO2}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 15 : $EF_{p,i,CO2}$
Unit/Value	Wood: Methodology default, 112 tCO2/TJ
Verified Source of data	Default value
Assessment	The value for the parameter BGTA 15 : $EF_{p,i,CO2}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 15 : $EF_{p,i,CO2}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 16 : $EF_{p,i,non-CO2}$
Unit/Value	Wood: Methodology default: - 9.46 tCO2e/TJ (AR5 GWP)
Verified Source of data	Default value
Assessment	The value for the parameter BGTA 15 : $EF_{p,i,CO2}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 15 : $EF_{p,i,CO2}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 17: $NCV_{b,i}$
Unit/Value	Wood: Methodology default, 0.0156 TJ/ton
Verified Source of data	Default value

Assessment	The value for the parameter BGTA 17: $NCV_{b,i}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 17: $NCV_{b,i}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 18: $NCV_{p,i}$
Unit/Value	Wood: Methodology default, 0.0156 TJ/ton
Verified Source of data	Default value
Assessment	The value for the parameter BGTA 18: $NCV_{p,i}$ is a default value which is as per the applied methodology /B02/. The value for the parameter BGTA 18: $NCV_{p,i}$ deemed to be appropriate by the validation team.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 20: $P_{b,l,y}$
Unit/Value	0.00841 Tonnes/household/year
Verified Source of data	KPT value
Assessment	The value of the parameter BGTA 20: $P_{b,l,y}$ is derived from the KPT test result which can be found in the ER sheet /04/.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	BGTA 23: $n_{p,d,y}$
Unit/Value	40.32%
Verified Source of data	manufacture data
Assessment	The value of the parameter BGTA 23: $n_{p,d,y}$ is from the manufacturer specification and can be found in the ER sheet /04/ tab “Plant Details”.

Relevant SDG Indicator	**SDG 13. Climate Action**
Data/parameter - Description	$fNRB_{,i,y}$
Unit/Value	91.2%
Verified Source of data	As per World bank report
Assessment	Assessment can be found in the section D.2.5 of this report.