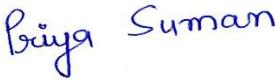


<b>Verification and certification report form for programme of activities</b>	
<b>BASIC INFORMATION</b>	
<b>Title and GS reference number of the programme of activities (PoA)</b>	Clean Impact Bond (GS 10785)
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	Version 5; 16/11/2023
<b>Title and GS reference number of the voluntary project activities (VPA)</b>	Clean Impact Bond Sistema Biogas Kenya (GS7587)
<b>Version number(s) of the VPA-DD(s) to which this report applies</b>	Version 5; Dated 16/11/2023
<b>Version number of the verification and certification report</b>	2.0
<b>Completion date of the verification and certification report</b>	05/12/2023
<b>Monitoring period number and duration of this morning period</b>	First Monitoring Period 30/09/2019 -31/12/2022
<b>Version number of the monitoring report to which this report applies</b>	version 02 dated Dated 16/11/2023
<b>Activity Requirements applied</b>	Community Services Activities
<b>Product Requirements applied</b>	-
<b>Coordinating/managing entity (CME)</b>	Frontier Finance Solutions, South Pole, and Sistema. Bio
<b>Host Country</b>	Republic of Kenya
<b>Applied methodologies and standardized baselines</b>	<p>Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17.01.2017.</p> <p>Gold Standard Gender Equality Requirements &amp; Guidelines v.1.1 - 1.03.2018.</p> <p>(Not claimed under this MR – already verified 2x)            TPDDTEC V3.1. - Gold Standard Methodology            “Technologies and practices to displace decentralized thermal energy consumption.</p>
<b>Mandatory sectoral scopes</b>	01/1.2: Energy Industries 03/3.1: Energy Demand 13/13.2: Waste handling and disposal

<b>Name and UNFCCC reference number of the VVB</b>	E-0052: Carbon Check (India) Private Ltd.
<b>Name, position, and signature of the approver of the verification and certification report</b>	 Priya Suman, Compliance Officer

## **SECTION A. Executive summary**

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### **Introduction:**

The Co-ordinating Managing Entity/Project Participant i.e., Frontier Finance Solutions has appointed the VVB, Carbon Check (India) Private Ltd. (CC IPL) to perform independent verification of the GS Programme of Activities, “Clean Impact Bond Sistema Biogas Kenya (GS7587)” in Republic of Kenya (hereafter referred to as “Programme of Activities or PoA”) for the VPAs titled “Clean Impact Bond Sistema Biogas Kenya (GS7587)”.

PoA aims to fight climate change along with achieving sustainable development goals by introducing modern cooking solutions and fuels which help to achieve the following Sustainable Development goals.

Reduction in Indoor Air Pollution more specifically through particulate matter exposure reduction and therefore reduction of health risks for the household members (SDG 3).

- Adding quality hours to the day of the main cook, predominantly women (SDG 5);
- Provide the household with long-term access to modern energy (SDG 7);
- Creating jobs in the value chain of the modern cooking solution introduced (SDG 8); and
- Contributing to climate action due to emission reductions through the replacement of unsustainably harvested solid biomass combustion in the baseline (SDG 13).

The Methodology for Emission Reductions and Sustainable development Goals being claimed are as follows:

SDG 3: Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0

SDG 5: Gold Standard Gender Equality Requirements & Guidelines. v1.1

SDG 13: TPDDTEC v3.1.- Gold Standard Methodology “Technologies and practices to displace decentralized thermal energy consumption /B02/

The VPA is designed to introducing modern cooking solutions and fuels which help to achieve the above-mentioned Sustainable Development goals. The CME and VPA implementer are responsible for the collection of data in accordance with the monitoring plan and the reporting of sustainable development goals from the component project activities.

This report summarises the verification findings of the project, performed on the basis of Procedures, and GS4GG methodology requirements, as well as on the basis of given criteria for consistent project operations, monitoring, reporting, and the subsequent decisions by the Gold Standard Secretariat. Verification is required for all registered GS project activities intending to confirm their achieved sustainable development goals and proceed with a request for issuance of sustainable development goals. This report contains the findings and resolutions from the verification along with a certification statement for the certified sustainable development goals.

This is to be noted that the report only gives verification opinion for SDG 3 and SDG 5 only, as issuance for SDG 13 is already done with other report.

### **Objective:**

Verification is the process of periodic independent review and ex-post determination of both quantitative and qualitative information by a VVB. In verification, the monitored sustainable development goals that have occurred because of the registered GS project activity during a defined monitoring period are to be verified.

Certification is the written assurance by a VVB that, during a specific period in time, a project activity achieved the sustainable development goals as verified. The duration of this monitoring period is

30/09/2019 -31/12/2022 (inclusive of both dates). The objective of this verification is to verify and certify SDG benefits being claimed for the period of 30/09/2019 -31/12/2022 (inclusive of both the dates) reported for the “Clean Impact Bond Sistema Biogas Kenya (GS7587)”.

The purpose of verification is to review the monitoring results and verify that the monitoring was implemented according to the monitoring methodology and the monitoring plan given in the PoA/ VPAs and to confirm that the achieved sustainable development goals, are sufficient, definitive, and presented in a concise and transparent manner. CCIPL’s objective is to perform a thorough, independent assessment of the implementation in line with registered VPA-DD.

In particular, the monitoring plan, monitoring report, and the project’s compliance with relevant GS, and host Party criteria are verified to confirm that the component project/s has/have been implemented in accordance with the previously registered/included component project design with conservative assumptions, as documented. Also, it is confirmed that if the monitoring plan is following the registered/included VPA-DD and the approved monitoring methodology.

**Scope:**

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered/included VPA-DD.
- To verify the implemented monitoring plan with the registered/included VPA-DD or approved revised VPA-DD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the sustainable development goals data and express a conclusion with a **reasonable level of assurance** about whether the reported sustainable development goals data are free from material misstatement.
- To verify that reported sustainable development goals data are sufficiently supported by evidence.

The verification shall ensure that the reported sustainable development goals are complete and accurate, in order, to be certified.

The verification comprises a review of the monitoring report covering the monitoring period from 30/09/2019 - 31/12/2022 (Inclusive of both dates) and based on the registered VPA-DD including the monitoring plan, impact quantification spreadsheet, SDG tool, monitoring methodology and all related evidence provided by a project participant.

The verification team assigned by the VVB concludes that during verification requirements of the PoA Clean Impact Bond (GS 10785) and the VPA “Clean Impact Bond Sistema Biogas Kenya (GS7587)” and all relevant GS4GG requirements has be considered, verification is done in accordance with validation and verification standard v1.0.

The voluntary project activities were correctly implemented according to the selected monitoring methodology, monitoring plan, and the approved revised VPA-DD/s. The monitoring system was implemented, and maintained in a proper manner, while collected monitoring data allowed for the verification of the achieved sustainable development goals. Through the review of documents and information shared by the CME, CME, the verification team confirms that the VPA has achieved sustainable development goals during the first monitoring period as follows:

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
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SDG 3	aDALYs	501 <sup>1</sup>	aDALYs
SDG 5	Gender equality	2,405,376	Quality Hours (meaning time shifted away from drudgery to income generation and education) on SDG 5 Impact Statement

CC IPL, as a VVB, is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

## SECTION B. Verification team

### B.1. Verification team, technical reviewer, and approver<sup>3</sup>

Carbon Check (India) Private Ltd. has appointed a competent team as per the GS4GG requirements, and CC IPL's internal procedures. Further details regarding team competence can be found in Appendix 2. The team is outlined below:

No.	Role	Type of resource	Last name	First name	Affiliation	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader/ Technical Expert	IR	Sharma	Harish	CC IPL	X	X	X	X
3.	Trainee Assessor	IR	Bankar	Siddhant	CC IPL	X	X	X	X
4.	Gender Expert/ Team Member	ER	Pincha	Chaman	CC IPL	X			X
5.	Health Expert	ER	S.	Sankar	CC IPL	X			X
5.	Local Expert	ER	Muriuki	Job	CC IPL		X		

### B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation
1.	Technical reviewer	IR	C.	Indumathi	CC IPL

<sup>1</sup> 0.058 operational system/year (around 3 weeks per year).

<sup>2</sup> 47 minutes/ operational system/ day (between one and two working months per year).

<sup>3</sup> Confirming to the GS requirements of paragraph 2.2 of RU 2020 PR - PR, V1.2 (validation and verification by same VVB), VVB confirms that it was not involved in any kind of validation activity of the project.

2.	Approver	IR	Suman	Priya	CC IPL
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## SECTION C. Application of materiality in conducting the verification

### C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error: Recording and reporting of the information in the ER spreadsheet.	Medium	<i>All the input data in the ER spreadsheet including the sales database, determination of parameters for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the.</i>	<i>The risk was mitigated by training the personnel involved in the data capture, and calculation and by following the monitoring responsibilities. The training records were reviewed. The verification team, based on the above, confirms that the risk is appropriately mitigated.</i>
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	<i>The data is recorded in spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database, and Stove efficiency testing records is controlled.</i>	<i>The identified risk was mitigated by managing access to the records. It was confirmed by the CME that the raw data is collected by the field personnel and then transmitted and stored electronically to the CME's office. The organogram of the organization for the data collection and record-keeping was reviewed and found satisfactory. The data quality control is maintained by the CME.</i>
3.	<i>Accuracy of the measuring equipment</i>	Low	<i>Check the calibration records for the measurement equipment used for the efficiency test.</i>	<i>The risk due to the accuracy of the measuring equipment was ensured by planning to check the calibration certificates of the measuring equipment used for stove efficiency.</i>
4.	<i>Competence of personnel involved in conducting standardized tests.</i>	Low	<i>Interview of the personnel involved and check the training records/accreditation certificates (applicable in case of institutions) involved in conducting such tests.</i>	<i>The risk was mitigated by reviewing the training records of the personnel involved in conducting such tests and by following the monitoring responsibilities. For institutions involved in conducting such tests, their accreditation certificates were checked to establish their competence for conducting such tests. The</i>

				<i>training records and certificates were reviewed which were also confirmed during the verification.</i>
5.	Sample	Medium	<i>The sample size is not suitable or the surveyed stoves at the VPA level are not random.</i>	<i>Cross-check the procedure to identify the sample size against the sampling guideline and standard and confirm the sample size is calculated correctly.</i>

## C.2. Consideration of materiality in conducting the verification

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The project is a Large-scale, as project activity is not claiming any emission reductions under this MR and no materiality is defined for verification of sustainable development goals by standard being claimed by CME, the verification team has selected samples of data and information to be verified with reasonable level of assurance as defined in ISO 14064:3 (2006) and to meet the materiality criteria.

Qualitative materiality is applied that the verification determines whether a project conforms to program rules, methodological criteria and criteria set out by PoA and VPA. In qualitative scenarios, professional judgment will be used to determine whether non-compliances with the program rules or methodological criteria is material.

Based on the above information, a risk analysis is carried out in the following activities:

1. Monitoring system including the data input procedure (including relevant personnel and applicable template forms used)
2. Copy of the agreement between household and Project Participant (s) (origin of data)
3. Stove unique ID system
4. Sustainable goal calculation worksheet (application of data)
5. Data flow
6. Data control procedures
7. Monitoring survey records

In conducting the verification, VVB took cognizance of reasonable level of assurance as defined in ISO 14064:3 (2006) and to meet the materiality criteria and based on the input of data from different sources checked through a sampling of records. Data flow was checked through a comparison of data in hand-written forms, electronic database, and Sustainable goal calculation worksheet /2/. The competence of the personnel involved in conducting the stove efficiency testing, recording of data, and calculation of the sustainable development co-benefits data has been checked by the verification team by means of a review of the training documents.

The risks identified can be mitigated through cross check with all sets of documents. The verification team performed the following checks to mitigate the effects of the above-identified sources of error:

Mitigation of Human error risks: The verification team mitigated the risk by checking the training records of the personnel and assessing their competencies, skills, monitoring/testing procedure followed, understanding of the monitoring survey forms, protocol and testing procedure, etc. Further, data was crosschecked with the Sustainable goal calculation worksheet /2/ and the sample raw data.

Mitigation due to error in the Information system: Verification team by conducting interviews with the personnel responsible for such activities mitigated the risk due to errors in an information system. It was confirmed through interviews that the raw data is collected by the field personnel and then transmitted and stored electronically at CME's office. The data quality control is maintained by the CME.

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing the calibration certificates of all the project equipment.

Competence of personnel involved in conducting standardized tests: Verification team has reviewed the abilities, qualifications, and recognition of involved personnel and institutions of the measuring team. The tests/procedures have been carried out by well-trained personnel. The training certificate of the personnel has been provided to the verification team in this respect.

Mitigation due to an error in Sampling: The verification team mitigated the risk by checking the list of random samples generated for monitoring surveys for VPAs, and the sample size calculation sheet.

Based on the assessment carried out, CCIPL confirms with a reasonable level of assurance that the claimed sustainable development co-benefits are free from material errors, omissions, or misstatements.

## **SECTION D. Means of verification**

### **D.1. Desk/document review**

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

### **D.2. On-site inspection**

On-site inspection has been conducted for the verification of the VPA:

The on-site audit was performed by the validation team of CCIPL from 19/12/2022 to 21/12/2022 and the following activities were performed:

- i. A review of the data and information presented to verify completeness and consistency in accordance with GS Principals and requirements and VPA-DD.
- ii. A review of the project description and monitoring methodology, paying particular attention to the applicability conditions of the methodology and baseline and additionality-related requirements set out by VPA-DD.
- iii. A review of the monitoring plan and the project's compliance with relevant GS criteria.
- iv. A review of calculations and assumptions made in determining the Sustainable development goal calculation.
- v. Cross-check a sample of a project (Questionnaire, operation surveys/interviews)

Furthermore, VVB has considered the Site Visit and Remote Audit Requirements and Procedures, version 2.0 for conducting the audit. In accordance with the requirements provided in §3.1.1(b) of the Site Visit and Remote Audit Requirements and Procedures, version 2.0, VVB determined that a physical site visit is required for the given project. It was determined based on §4.1.1 of the Site Visit and Remote Audit Requirements and Procedures, version 2.0 that a physical site visit is mandatory. VVB carried out the risk assessment in accordance with Annex 1 of the Site Visit and Remote Audit Requirements and Procedures, version 2.0/B07/

The verification team applied a sampling approach for onsite interviews as part of verification in accordance with paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. In accordance with paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team, and accordingly, steps listed in paragraph 29 of the sampling standard were followed. So, in accordance with paragraph 39 (c) of the sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 10 %, and consumer risk of 10 % in determining the VVB's sample size for which the sample size (n) is 11 with acceptance number (c) 0.

### **D.3. Interviews**

Interviews with bio gasifier user was taken by a Verification team. All surveys were conducted in person and photos of end users with photo IDs and GPS coordinates were taken as records. Submitted photos, snapshots, and ER sheets maintained of the site survey were checked by the verification team to confirm.

The VV plan has been shared with the CME on dated 06/12/2022. In line with the VV plan, the VVB team has interviewed the CME team members involved in the survey and the end users.

No.	Name	Organization	Date	Topic	Team member
/1/	Maaike Veen	Cardano development (Project Manager)	19/12/2022 to 21/12/2022	<ul style="list-style-type: none"> <li>•Discussion on Programme Design and eligibility criteria including those related to the potential VPA/VPA implementer and agreements/roles and responsibilities with the VPA implementer</li> <li>•Proposed Technology to be used in the generic VPAs of the PoA</li> <li>•CME Management System Manual</li> <li>• Discussion on programme funding and involvement of any ODA</li> <li>• Letter of approval and authorization.</li> <li>•EIA exemption for the VPAs of the PoA</li> <li>•Sustainability aspects of the PoA</li> <li>•SDG impacts</li> </ul>	Harish Sharma, Siddhant Bankar
/2/	Gideon Gitari	Sistema Bio (Technical coordinator)	19/12/2022 to 21/12/2022	<ul style="list-style-type: none"> <li>•Discussion on Programme Design and eligibility criteria including those related to the potential VPA/VPA implementer and agreements/roles and responsibility with the VPA implementer</li> <li>•Proposed Technology to be used in the generic VPAs of the PoA</li> <li>•CME Management System Manual</li> <li>• Discussion on programme funding and involvement of any ODA</li> <li>• Letter of approval and authorization.</li> <li>•EIA exemption for the VPAs of the PoA</li> <li>•Sustainability aspects of the PoA</li> <li>•SDG impacts</li> </ul>	Harish Sharma, Siddhant Bankar
/3/	Maryanne Waruguru	Eco Research (Project manager)	19/12/2022 to 21/12/2022	<ul style="list-style-type: none"> <li>•Discussion on Programme Design and eligibility criteria including those related to the</li> </ul>	Harish Sharma, Siddhant Bankar

				<p>potential VPA/VPA implementer and agreements/roles and responsibility with the VPA implementer</p> <ul style="list-style-type: none"> <li>•Proposed Technology to be used in the generic VPAs of the PoA</li> <li>•CME Management System Manual</li> <li>• Discussion on programme funding and involvement of any ODA</li> <li>•Letter of approval and authorization.</li> <li>•EIA exemption for the VPAs of the PoA</li> <li>•Sustainability aspects of the PoA</li> <li>•SDG impacts</li> <li>•Discussion on Percentage of project, population using polluting fuel, Usage rate, Number of targeted households, Useful intervention lifetime, Baseline PM2.5 exposure, Project PM2.5 exposure, Baseline Quality Hours spent &amp; Project Quality Hours spent</li> </ul>	
/4/		Eco Research (Director)	19/12/2022 to 21/12/2022	<ul style="list-style-type: none"> <li>•Discussion on Programme Design and eligibility criteria including those related to the potential VPA/VPA implementer and agreements/roles and responsibility with the VPA implementer</li> <li>•Proposed Technology to be used in the generic VPAs of the PoA</li> <li>•CME Management System Manual</li> <li>•Discussion on programme funding and involvement of any ODA</li> <li>•Letter of approval and authorization.</li> <li>•EIA exemption for the VPAs of the PoA</li> <li>•Sustainability aspects of the PoA</li> <li>•SDG impacts</li> <li>•Discussion on Percentage of project, population using polluting fuel, Usage rate, Number of targeted households, Useful intervention lifetime, Baseline PM2.5 exposure,</li> </ul>	Harish Sharma, Siddhant Bankar
	Francis Waweru				

				Project PM2.5 exposure, Baseline Quality Hours spent & Project Quality Hours spent	
/5/	Catherine Nyaroka	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
/6/	Jennifer Ngutiku	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
/7/	Lucyline Mwendwa Kamau	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
/8/	Catherine Kaindi Muirugi	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
/9/	Juliet M. Mbaabu	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
10/	Catherine Kaindi Muirugi	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
11/	Jesca Nkirate	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
12/	Loise Muthani Julius	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
13/	Gertrude Njeri	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
14/	Martha Wanja john	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar
15/	Doline Kagendo Kutere	End User	19/12/2022 to 21/12/2022	•SDG 3 ADALYs •SDG 5 Gender	Harish Sharma, Siddhant Bankar

## SECTION E. Verification findings

### E.1. General

#### E.1.1. Compliance of the monitoring report with the monitoring report form

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	CME has used the GS4GG template Monitoring Report, version 1.1. The verification team confirms that the latest available version of the monitoring report template has been used by the CME and the MR is in compliance with the monitoring report form and related template guide Monitoring Report, version 1.1.  This confirms compliance with the §4.1.2 GS VVS v1.0 requirements.

#### E.1.2. Remaining forward action requests from validation and/or previous verifications

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Not Applicable

## E.2. Programme of activities

### E.2.1. Compliance of the program implementation with the registered program design document

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>CC IPL by means of on-site interview and document provided by the CME confirms that all physical features (technology, project equipment, and monitoring equipment) of the included VPAs in the PoA are in place and that the coordinating/managing entity has operated the PoA and the VPAs as per the PoA-DD and the VPA-DD.</p> <p>The verification team confirms the actual operation of the VPA and PoA implementation and operation in compliance with the PoA-DD / VPA-DD in order to confirm compliance with the §4.1.2 GS VVS v1.0 requirements.</p>

### E.2.2. Implementation and operation of the management system

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>The PoA management system including the record-keeping system has been explained in the PoA. During verification, the verification team based on a review of provided documents and discussion on video conferencing has assessed this management system. The verification team evaluated the management systems in place to implement the monitoring of the project activity. This included the roles and responsibilities of the monitoring staff, data collection, transfer and aggregation procedures, data storage, and archiving procedure for the monitoring system.</p> <p>Monitoring surveys were conducted by the implementation partner of Sistema Bio.</p> <p>To ensure the completeness and accuracy of monitoring information, an electronic database is operated and maintained by the VPA implementer. This information is further maintained by the CME. The data is further periodically checked by the CME to ensure there is no double counting. This provision for the avoidance of double counting as outlined in the PoA management system has been verified by means of review records of the sales database and on-site interviews during the course of verification.</p> <p>The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan provided in VPA-DD. The details about the monitoring system have been provided in the Monitoring report.</p> <p>The verification team confirms that the monitoring management system of the GS4GG PoA is in place, with the responsibilities properly identified and in place. This confirms the compliance of § 17.4.8 of GS VVS v1.0 requirements.</p>

## E.3. Voluntary project activities

### E.3.1. Compliance of the VPA implementation with the included VPA design document

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	The implementation status of the PoA and the voluntary project activities is:

<b>Project Participants:</b>	Frontier Finance Solutions, South Pole and Sistema. Bio
<b>Title of PoA:</b>	Clean Impact Bond (GS 10785)
<b>GS Reference No:</b>	PoA – GS10785 VPA: GS7587
<b>Applied Baseline and monitoring methodology:</b>	<p>-Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17/01/2017</p> <p>-Gold Standard Gender Equality Requirements &amp; Guidelines v.1.1 – 01/03/2018</p> <p>-(Not claimed under this MR – already verified 2x) TPDDTEC V3.1. - Gold Standard Methodology “Technologies and practices to displace decentralized thermal energy consumption.</p>
<b>Project Scale:</b>	Largescale
<b>Location of the project activity:</b>	Republic of Kenya
<b>Reported monitoring Period verified in this verification:</b>	30/09/2019 -31/12/2022 (Both days inclusive)

The VPA is designed to introducing modern cooking solutions and fuels which help to achieve the above-mentioned Sustainable Development goals. In VPA bio gasifier at incentivised price is being sold.

It was confirmed that is Frontier Finance Solutions, South Pole the Coordinating/Managing Entity for the PoA. The actual voluntary project activity/ies are in line with the VPAs. Sistema Bio. is the VPA implementer for the VPA.

The information (including data and variables) provided in the MR /01/ is in line with the details provided in the VPA-DD.

CC IPL’s verification team considers the project description of the project contained in the PoA and the VPAs to be complete and accurate. The VPAs comply with the relevant methodology, tools, forms, and guidance.

In accordance with §17.4.10 (c) of GS VVS v1.0, the verification team confirms that there is no information (data and variables) in the current monitoring period that are different from that stated in the approved revised VPA-DD which has caused an increase in the estimates of sustainable development co-benefits.

The verification team has assessed the project to check any proposed or actual changes to the project design, In the opinion of CC IPL, there is no change to the project design. After reviewing the data shared by CME, CC IPL’s verification team confirms that the VPAs are implemented within the boundary of the PoA as described in the PoA-DD.

CC IPL’s verification team confirms that the VPAs are implemented within the boundary of the PoA as described in the PoA and the implementation and operation of the project activity have been conducted in accordance with the description contained in the PoA-DD and VPA-DD.

### E.3.2. Compliance with the registered monitoring plan with applied methodologies and standardized baselines

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>The verification team can confirm that the monitoring plan contained in the VPAs is in accordance with the approved methodology applied by the project activity, i.e.,</p> <p>SDG 3: Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17.01.2017.</p> <p>SDG 5: Gold Standard Gender Equality Requirements &amp; Guidelines v.1.1 - 1.03.2018.</p> <p>SDG 13: (Not claimed under this MR – already verified) TPDDTEC V3.1. - Gold Standard Methodology “Technologies and practices to displace decentralized thermal energy consumption.</p> <p>The monitoring plan is in accordance with the approved methodology and is applied by the component project activities and as provided in the VPA. The verification took cognizance of § 17.4.7 to § 17.4.12 of GS VVS, Version 1.0 and GS4GG requirements.</p>

### E.3.3. Compliance of monitoring activities with the registered monitoring plan

The monitoring has been carried out in accordance with the monitoring plan contained in the VPA-DD. This conclusion has been made based on the assessment below.

#### E.3.3.1. Data and parameters fixed ex-ante or at the renewal of crediting period

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>The verification team confirms that the Data and parameters fixed ex-ante are in compliance with the VPAs and the monitoring plan. Please refer to Appendix 5 for a detailed analysis of the ex-ante parameters.</p> <p>The verification took cognizance of § 17.4.12 of GS VVS v1.0 and GS4GG requirements.</p>

#### E.3.3.2. Data and parameters monitored.

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>The Verification team confirms that the Data and parameters monitored are in compliance with the VPA-DD and the monitoring plan. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of this report. The grievance mechanism is in line with VPA DD. No grievances have been expressed during this monitoring period.</p> <p>The verification took cognizance of § 17.4.12 of GS VVS v1.0 and GS4GG requirements.</p>

#### E.3.3.3. Implementation of sampling plan

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>Monitoring surveys were conducted during the current monitoring period. The total population of the Bio Gasifier stoves under VPA considered for the monitoring period. The monitoring parameters required to be monitored</p>

	<p>through the sampling plan to assess the results for sustainable development goals are:</p> <ol style="list-style-type: none"> <li>1. ADALYs_SDG 3</li> <li>2. Quality Hours (meaning time shifted away from drudgery to income generation and education) on SDG 5 Impact Statement</li> </ol> <p>Applying the random number generator, the Bio gasifier user picked from the defined population up to the required sample size as calculated by the CME. The verification team confirms that the applied method for sample size calculation is in accordance with the PoA-DD / VPA-DD.</p> <p>The sampling plan implemented by the CME is in accordance with the applied approved monitoring methodology and the PoA/ VPA-DD. The CME has appropriately performed the Random Sampling procedure in line with the applied methodology and is best suited for this type of project. The sampling strategy, sample sizes and data collection for the baseline assessment for SDG 3 and 5 are in accordance with IFC Learning Brief Clean Impact Bond titled Mobilizing Impact-linked Finance to Accelerate Modern Clean Cooking. As the PoA mentions the option for a random Sampling procedure, it is acceptable to the verification team.</p> <p>The verification team applied a sampling approach for remote interviews as part of verification in accordance with paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. In accordance with paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team, and accordingly, steps listed in paragraph 29 of the sampling standard were followed. So, in accordance with paragraph 39 (c) of the sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 10 %, and consumer risk of 10 % in determining the VVB's</p> <p>sample size for which the sample size (n) is 11 with acceptance number (c) 0.</p> <p>The verification took cognizance of "SDG 3: Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17/01/2017.</p> <p>SDG 5: Gold Standard Gender Equality Requirements &amp; Guidelines v.1.1 – 01/03/2018.</p>
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#### E.3.4. Compliance with the calibration frequency requirements for measuring instruments.

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	Not applicable.

#### E.3.4.1. Calculation of baseline situation for sustainable development goals

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	For SDG 3: 'Baseline PM2.5 exposure' is the main parameter of indoor air pollution in the baseline. The full explanation of how the HAPIT model is run based on this parameter (and the other parameters presented for the project scenario) is reported in the report: 'Quantifying Health and Gender Co-Benefits from Biogas-AN ASSESSMENT FOR CLEAN IMPACT BOND INITIATIVE' by Berkeley Air Monitoring Group from July 2022. The parameter value is referenced on page 13, chapter <i>Personal exposure and health</i> figure 5.

Data/Parameter	Value obtained in this monitoring period
Baseline PM2.5 exposure (µg/m3)	113

For SDG 5 : 'Quality hours', is presented in the table below. The equation representing the outcome metric "Quality Hours" is as follows:  
**QH<sub>b</sub> = [QH<sub>(biogas adopters)</sub> - QH<sub>(biogas non-adopters)</sub>]**

Where,

QH<sub>b</sub> is the average difference in Quality Hours per day between adopters and non-adopters of the biogas system.

For this study, QH represents time spent on non-cooking-related productive tasks, defined as income generating activities, educational activity, production of materials that would otherwise have been purchased, rest, and leisure. In the report: 'Quantifying Health and Gender Co-Benefits from Biogas-AN ASSESSMENT FOR CLEAN IMPACT BOND INITIATIVE' by Berkeley Air Monitoring Group from July 2022, the parameter value is referenced on page 14, in chapter *Time use and gender* table 3.

Data/Parameter	Value obtained in this monitoring period
Quality hours baseline (min)	365

Verification team confirmed the calculation method used to calculate the quality hours is in line with registered VPA-DD and methodology, survey questionnaire used, and survey results were crosschecked by verification team during and on-site interviews with end used this is conformance with cognizance with §17.4.12 GS VVS v1.0

**Calculation of project value or estimation of project situation of each SDG Impact >>**

<b>Means verification</b>	of Document Review, Interview				
<b>Conclusion</b>	SDG 3:				
	<table border="1"> <thead> <tr> <th>Data/Parameter</th> <th>Value obtained in this monitoring period</th> </tr> </thead> <tbody> <tr> <td>Baseline PM2.5 exposure (µg/m3)</td> <td>113</td> </tr> </tbody> </table>	Data/Parameter	Value obtained in this monitoring period	Baseline PM2.5 exposure (µg/m3)	113
	Data/Parameter	Value obtained in this monitoring period			
	Baseline PM2.5 exposure (µg/m3)	113			
	SDG 5:				
<table border="1"> <thead> <tr> <th>Data/Parameter</th> <th>Value obtained in this monitoring period</th> </tr> </thead> <tbody> <tr> <td>Quality hours baseline (min/day)</td> <td>365</td> </tr> </tbody> </table>	Data/Parameter	Value obtained in this monitoring period	Quality hours baseline (min/day)	365	
Data/Parameter	Value obtained in this monitoring period				
Quality hours baseline (min/day)	365				
CME has calculated project estimates for SDG 3 & 5 impacts under section E.2 of the MR/01/.					
Furthermore, verification team has confirmed the procedure used to calculate the SDG impact is in line with validated VPA-DD & § 7.9.1 of GS Validation and verification standard, version 1.0/B01/.					

N/A as no emission reduction are being claimed under this MR.

#### E.3.4.2. Calculation of leakage GHG emissions

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	NA as there where no emission reduction being claimed.

#### E.3.4.3. Summary of calculation of sustainable development goals achieved.

<b>Means of verification</b>	Document Review, Interview
<b>Conclusion</b>	<p>The verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence, and calculations are done in accordance with the pre-defined formulae/method from VPA-DD. The total number of SDG achieved is listed below.</p> <p>VVB confirmed that the baseline calculation used is found to be in line with registered VPA-DD, which is in cognizance with §17.4.12 GS VVS v1.0.</p>

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 3	aDALYs	501 <sup>4</sup>	aDALYs
SDG 5	Gender equality	2,405,376	Quality Hours (meaning time shifted away from drudgery to income generation and education) on SDG 5 Impact Statement

#### E.3.4.4. Comparison of actual sustainable development co-benefits with estimates in included VPA

<b>Means of verification</b>	Document Review
<b>Conclusion</b>	A comparison of the actual sustainable development co-benefits with the estimates in the included specific VPA is given in the below table. VVB confirmed that the baseline calculation used is found to be in line with registered VPA-DD, which is in cognizance with §17.4.12 GS VVS v1.0

<sup>4</sup> 0.058 operational system/year (around 3 weeks per year).

<sup>5</sup> 47 minutes/ operational system/ day (between one and two working months per year).

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values <sup>6</sup> achieved during this monitoring period
3	0.058 ADALY/ year/ system	0.058 ADALY/ year/ system
5	285 Quality Hours/ year /system	285 Quality Hours/ year /system

#### E.3.4.5. Remarks on difference from estimated value in included VPA

<b>Means verification</b>	<b>of</b>	Document review
<b>Conclusion</b>		Not Applicable

#### E.3.5. Assessment of reported sustainable development co-benefits.

<b>Means verification</b>	<b>of</b>	Document Review, Interview
<b>Conclusion</b>		<p>The Verification team confirms that the data and parameters monitored related to sustainable development co-benefits are in compliance with the VPAs and the monitoring plan. A complete assessment of each of the monitored parameters has been provided in Appendix 6 of the verification report.</p> <p>VVB confirmed that the baseline calculation used is found to be in line with registered VPA-DD, which is in cognizance with §17.4.12 GS VVS v1.0</p>

## SECTION F. Internal quality control

>>

The final verification report passed a technical review. A technical reviewer qualified in accordance with the CCIPL's qualification scheme for CDM validation and verification has performed the technical review.

## SECTION G. Verification opinion

>>

Carbon Check (India) Private Ltd. has performed the third verification of the GS Programme of Activities" Clean Impact Bond (GS 10785)" (hereafter referred to as "Programme of Activities or PoA") for the Clean Impact Bond Sistema Biogas Kenya (GS7587) (hereafter referred to as "voluntary project activity or VPA").

The verification team assigned by the VVB concludes that the PoA (Version 5; 16/11/2023), VPA (Version 7; Dated 16/11/2023) as described in the VPA-DD and the Monitoring report (Version 5, dated 16/11/2023), meet all relevant GS4GG requirements and PoA requirements.

### Verification methodology and process:

The Verification team confirms the contractual relationship signed on 21/07/2022 between the VVB, Carbon Check (India) Private Ltd., and Frontier Finance Solutions the entity authorised by Co-ordinating Managing Entity/ Project Participant, (Frontier Finance Solutions). The team assigned to the verification meets the Carbon Check (India) Private Ltd.'s internal procedures including the GS requirements for the team composition and competence. The verification team has conducted a thorough contract review as per GS4GG and Carbon Check's procedures and requirements.

<sup>6</sup> Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

The verification is being performed as per the requirements described in the GS VVS, v1.0, and GS4GG requirements and constitutes the review and completion of the following steps:

- Reviewing the Clean Impact Bond (GS 10785) (Version 5; 16/11/2023), the VPA for Clean Impact Bond Sistema Biogas Kenya (GS7587) (Version 7; Dated 16/11/2023) to include the monitoring plan and the corresponding verification report.
- Desk review of the validation report, MR, and other relevant documents including documents related to the project activities in sustainable development co-benefits.
- Review of the applied monitoring methodologies SDG 3: Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17/01/2017 & SDG 5: Gold Standard Gender Equality Requirements & Guidelines v.1.1 – 01/03/2018.
- Review of registered VPA-DD.
- Review of any GS decisions, clarifications, and guidance.
- Resolution of CARs and CLs raised during verification.
- Issuance of Verification Report.

The voluntary project activities were correctly implemented according to the selected monitoring methodology, monitoring plan, and VPA/s. The monitoring system was installed, and maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved sustainable development co-benefits. Through the review, the verification team confirms that the PoA has resulted in the achievement of sustainable development goals period 30/09/2019 -31/12/2022 (inclusive of both dates) during the first monitoring period for and achieved SDG benefits as detailed in below table for the period, VVB is therefore pleased to issue a positive verification opinion in the attached Certification statement.

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 3	aDALYs	501 <sup>7</sup>	aDALYs
SDG 5	Gender equality	2,405,376	Quality Hours (meaning time shifted away from drudgery to income generation and education) on SDG 5 Impact Statement

## SECTION H. Certification statement

>>

Carbon Check (India) Private Ltd., the VVB, has performed the verification of the GS Programme of Activities, “Clean Impact Bond (GS 10785)” in “Republic of Kenya”. PoA aims to fight climate change

<sup>7</sup> 0.058 operational system/year (around 3 weeks per year).

8 47 minutes/ operational system/ day (between one and two working months per year).

along with achieving sustainable development goals by introducing modern cooking solutions and fuels which help to achieve the following Sustainable Development goals.

The VPA is designed to introducing modern cooking solutions and fuels which help to achieve the above-mentioned Sustainable Development goals. The CME and VPA implementer are responsible for the collection of data in accordance with the monitoring plan and the reporting of sustainable development goals from the component project activities. It is VVB's responsibility to express an independent verification statement on the reported sustainable development co-benefits from the component project/s. The VVB does not express any opinion on the selected baseline scenario or on the validated and registered PoA-DD/VPA-DD. The verification is carried out in line with the GS VVS and GS4GG requirements.

The verification was performed to identify the compliance of the component project with implementation and monitoring requirements, and to verify the actual amount of sustainable development co-benefits achieved by the project, through obtaining evidence that included.

- i) Checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and
- ii) The collection of evidence supporting the reported data.

The verification is based on:

- PoA, Version 5; 16/11/2023.
- Clean Impact Bond Sistema Biogas Kenya (GS7587) the VPA are included in the PoA and its monitoring plan for the monitoring period is from 30/09/2019 -31/12/2022 (inclusive of both dates).
- Approved GS monitoring methodology SDG 3: Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0 – 17/01/2017 & SDG 5: Gold Standard Gender Equality Requirements & Guidelines v.1.1 – 01/03/2018.
- Validation report for the PoA and the VPA.
- Monitoring report Version 2.0 dated 16/11/2023.

This statement covers the verification period 30/09/2019 -31/12/2022 (inclusive of both dates).

The VVB had raised Zero (0) FAR, seven (7) clarifications, and one (1) Corrective action requests which have been resolved by the CME.

The VVB considers it necessary to give reasonable assurance that reported sustainable development co-benefits were calculated correctly on the basis of the monitoring methodology and that the monitoring plan contained in the VPAs is fairly stated.

The VVB, hereby certifies that the project activity achieved sustainable development co-benefits by project is as detailed in below table for the period of to 30/09/2019 -31/12/2022 (inclusive of both dates) and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 3	aDALYs	501 <sup>9</sup>	aDALYs

<sup>9</sup> 0.058 operational system/year (around 3 weeks per year).

SDG 5	Gender equality	2,405,376	Quality Hours (meaning time shifted away from drudgery to income generation and education) on SDG 5 Impact Statement
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**Appendix 1. Abbreviations**

<b>Abbreviations</b>	<b>Full texts</b>
AQL	Acceptable Quality Limit
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CL	Clarification Request
CME	Co-ordinating and Managing entity
VPA	Voluntary Project Activity
VPA-DD	Voluntary Project Activity Design Document
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DR	Document review
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
EI	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GACC	Global Alliance for Clean Cookstoves
GHG	Greenhouse gas(es)
GS4GG	Gold Standard for the Global Goals
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MP	Monitoring Period
MWh	Mega Watt Hour
MR	Monitoring Report
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
QC/QA	Quality control /Quality assurance
SDG	Sustainable Development Goal
TA	Technical Area
TR	Technical Review
TRF	Transition Request Form
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Limit
VVS	Validation and Verification Standard
VVB	Validation & Verification Body
WBT	Water boiling test
ICS	Improved cook stove
ADALYs	Averted Mortality and Disability Adjusted Life Years

**Appendix 2. Competence of team members and technical reviewers**


**Carbon**  
 CHECK

**Carbon Check (India) Private Limited**

*Certificate of Competency*

**Mr. Harish Sharma**

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

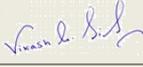
*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

<b>Issue Date</b> <b>1<sup>st</sup> January 2023</b>	<b>Expiry Date</b> <b>31<sup>st</sup> December 2023</b>
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 <hr style="width: 80%; margin: 0 auto;"/> <b>Mr. Vikash Kumar Singh</b> <b>Compliance Officer</b>	 <hr style="width: 80%; margin: 0 auto;"/> <b>Mr. Amit Anand</b> <b>CEO</b>
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CCIPL\_FM 7.9 Certificate of Competency\_V2.1\_012023



## Carbon Check (India) Private Limited

### Certificate of Competency

#### Mr. Siddhant Bankar

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

Issue Date

1<sup>st</sup> January 2023

Expiry Date

31<sup>st</sup> December 2023



**Mr. Vikash Kumar Singh**  
Compliance Officer



**Mr. Amit Anand**  
CEO



## 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:*

- |   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Validator          | <input type="checkbox"/> Verifier                          | <input type="checkbox"/> Team Leader             | <input type="checkbox"/> Technical Expert     |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert                     | <input type="checkbox"/> Gender Expert           | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+               | <input type="checkbox"/> Social no-harm(S+)                | <input type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert           |
| <input type="checkbox"/> Financial Expert   | <input checked="" type="checkbox"/> Local Expert for Kenya |  |   |

*in the following Technical Areas:*

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

Issue Date  
03<sup>rd</sup> May 2023

Expiry Date  
02<sup>nd</sup> May 2024



**Mr. Vikash Kumar Singh**  
Compliance Officer



**Mr. Amit Anand**  
CEO



## Carbon Check (India) Private Limited

### Certificate of Competency

**Ms. Chaman Pincha**

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

*for the following functions and requirements:*

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> Validator          | <input type="checkbox"/> Verifier           | <input type="checkbox"/> Team Leader              | <input type="checkbox"/> Technical Expert     |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert      | <input checked="" type="checkbox"/> Gender Expert | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+               | <input type="checkbox"/> Social no-harm(S+) | <input type="checkbox"/> Environment no-harm(E+)  | <input type="checkbox"/> CCB Expert           |
| <input type="checkbox"/> Financial Expert   | <input type="checkbox"/> Local Expert       |   |   |

*in the following Technical Areas:*

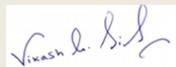
- |                                  |                                  |                                  |                                  |                                  |
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| <input type="checkbox"/> TA 1.1  | <input type="checkbox"/> TA 1.2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

Issue Date

1<sup>st</sup> January 2023

Expiry Date

31<sup>st</sup> December 2023



**Mr. Vikash Kumar Singh**  
Compliance Officer



**Mr. Amit Anand**  
CEO



## Carbon Check (India) Private Limited

### Certificate of Competency

**Mr. Shankar S**

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

*for the following functions and requirements:*

- |   |   |  |   |
|---|---|--|---|
| <input type="checkbox"/> Validator          | <input type="checkbox"/> Verifier                 | <input type="checkbox"/> Team Leader             | <input type="checkbox"/> Technical Expert     |
| <input type="checkbox"/> Technical Reviewer | <input checked="" type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert           | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+               | <input type="checkbox"/> Social no-harm(S+)       | <input type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert           |
| <input type="checkbox"/> Financial Expert   | <input type="checkbox"/> Local Expert             |  |   |

*in the following Technical Areas:*

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

Issue Date  
1<sup>st</sup> January 2023

Expiry Date  
31<sup>st</sup> December 2023



Mr. Vikash Kumar Singh  
Compliance Officer



Mr. Amit Anand  
CEO



## Carbon Check (India) Private Limited

### Certificate of Competency

**Ms. Indumathi C**

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

Issue Date

1<sup>st</sup> January 2023

Expiry Date

31<sup>st</sup> December 2023



**Mr. Vikash Kumar Singh**  
Compliance Officer



**Mr. Amit Anand**  
CEO

**Appendix 3. Documents reviewed or referenced.**

No.	Author	Documents
/01/	CME	220915_CIB POA Monitoring Report_version 02 dated _16/11/2023
/02/	CME	Programme Design Document_neustark-PoA_GS10785, version 05 dated _16/11/2023.
/03/	CME	GS4GG PoA Design Consultation Review GS10785 Round 2 FINAL.pdf
/04/	CME	220603_Request for Clarification_final.pdf (By Cardano)
/05/	CME	T-V5.0-Deviation-Request-Clean Impact Bond 032023.pdf
/06/	CME	20211217_Cover-Letter_POA_signed.pdf
/07/	CME	Cover Letter_VPA_signed_final.pdf
/08/	CME	Sustain Cert confirmation POA Listing.pdf
/09/	CME	Contract_IMPA_signed.pdf
/10/	CME	Memo GS-SC listed_deschan_final.pdf
/11/	CME	Cover-Letter_VPA_GS11627 - signed
/12/	CME	GS4GG PoA design consultation report
/13/	CME	10785_SDG-Impact-tool_filled out
/14/	CME	Tech Spec Rupak Stove.xlsx_Technical Specification
/15/	CME	Design-Change-Memo VPA1_Clean Impact Bond_v01.docx
/16/	CME	Additionality decision tree visual.pdf
/17/	CME	Local Stakeholder Consultation Report
/18/	CME	ODA_signed.pdf
/19/	CME	Training materials - register – photos 1. Gender survey training photos 2. PE training photos 3. BerkeleyAir_VirtualTraining_INTRO_IFC_Systema.pptx 4. IFC_BerkeleyAir_VirtualTraining_COVID_v1.pptx 5. IFC_BerkeleyAir_VirtualTraining_UPAS.pptx 6. IFC_Trained field team.xlsx 7. Training Register_IFC.pdf
/20/	CME	SOP documentation
/21/	CME	Selected consent forms
/22/	CME	HH Survey and PEM Results
/23/	CME	ISO certification Sistema Bio
/24/	CME	Sistema.bio incentives to use biogas
/25/	CME	Sistema.bio Kenya user contract
/26/	CME	Sistema.bio technical specs of biodigester
/27/	CME	VPA-DD ‘Clean Impact Bond Sistema Biogas Kenya” version 08 dated 16/11/2023
/28/	CME	Sales record Health Gender_v02
/29/	CME	Working calculations monitoring_v02
/B01/	GS	1. GS Validation and Verification Standard (Version 1.0). 2. Stakeholder consultation & engagement requirements 2.1 3. GS4GG for Community service activity v.1.2
/B02/	GS	a. Gold Standard Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air v1.0, b. Gold Standard Gender Equality Requirements & Guidelines. v1.1 c. Technologies and practices to displace decentralized thermal energy consumption v3.1
/B03/	UNFCCC & GS	Glossary of CDM Terms, Version 11.0 GS Glossary ( <a href="https://www.goldstandard.org/project-developers/standard-documents">https://www.goldstandard.org/project-developers/standard-documents</a> )

/B04/	UNFCCC	Websites: <a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>
/B05/	GS	GS4GG principles and requirements version 1.2
/B06/	GS	Program of Activities requirements version 2.0
/B07/	GS	Site Visit and Remote Audit Requirements and Procedures, version 2.0

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

### 4.1 Clarifications (CLs)

Table 1 CLs

CL ID	01	Section no.	C	Date: 10/10/2023
<b>Description of CL</b>				
Under section C of the MR description of monitoring system is not consistent with VPA-DD, clarify the same				
<b>Project participant response</b>				Date: 12/10/2023
The CME has ensured that under section C all the information on the monitoring system covered in the VPA-DD is the same in the Monitoring Report.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				Date: 23/10/2023
CME has now added the missing information under section C of the MR which found to be in line with VPA-DD. CL is closed				

CL ID	02	Section no.	D.2	Date: 10/10/2023
<b>Description of CL</b>				
Under section D.2, CME to clarify on the applied value of Data/Parameter Baseline PM2.5 exposure not in line with VPA-DD.				
<b>Project participant response</b>				Date: 12/10/2023
This is adjusted.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				Date: 23/10/2023
CME has now amendments to applied value of Data/Parameter Baseline PM2.5 exposure which is now in line with VPA-DD. <b>CL is closed</b>				

CL ID	03	Section no.	D.2	Date: 10/10/2023
<b>Description of CL</b>				
Under section D.2, Source of data for Data/Parameter "Usage Rate" and "PFU fraction" is not consistent with VPA-DD, CME to clarify the same.				
<b>Project participant response</b>				Date: 12/10/2023
The Usage Rate and PFU fraction in the VPADD were not in line with the extension of the monitoring period. We can adjust the VPA-DD accordingly, but we have not done that yet. Waiting for further instructions.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				Date: XX/XX/XXXX

CL ID	04	Section no.	D.2	Date: 10/10/2023
<b>Description of CL</b>				
Under section D.2, Applied value for Data/Parameter "Number of targeted Households" is missing, CME to clarify the same.				
<b>Project participant response</b>				Date: 12/10/2023
This was added.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				Date: 23/10/2023

Applied value for Data/Parameter "Number of targeted Households" is now added in updated MR which deemed to be appropriate.  
**CL is closed**

<b>CL ID</b>	<b>05</b>	<b>Section no.</b>	<b>D.2</b>	<b>Date: 10/10/2023</b>
<b>Description of CL</b>				
Under section D.2, Data/Parameter SDG indicator 5.4.1 is not consistent with VPA-DD, furthermore, Source of data for the parameter is missing, CME to clarify the same.				
<b>Project participant response</b>				<b>Date: 12/10/2023</b>
This was adjusted				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				<b>Date: 23/10/2023</b>
CME has now updated the Data/parameter table for the SDG indicator 5.4.1 which is found to be in line with VPA-DD.				
<b>CL is closed</b>				

<b>CL ID</b>	<b>06</b>	<b>Section no.</b>	<b>D.2</b>	<b>Date: 10/10/2023</b>
<b>Description of CL</b>				
In line with template filling guide Under section E.6, remark for increase in achieved values than estimated is missing. CME to clarify.				
<b>Project participant response</b>				<b>Date: 12/10/2023</b>
This is adjusted.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				<b>Date: 23/10/2023</b>
<b>CME has added a remark for the difference in achieved sustainable development goals co-benefits which further deemed to be appropriate.</b>				
<b>CL is closed.</b>				

<b>CL ID</b>	<b>07</b>	<b>Section no.</b>	<b>D.2</b>	<b>Date: 10/10/2023</b>
<b>Description of CL</b>				
Section F of MR is not in line with template filling guide for MR available at GS. CME to clarify.				
<b>Project participant response</b>				<b>Date: 13/10/2023</b>
According to the guidelines the CME has to provide a report on the Safeguarding principles that were added to the monitoring plan. The project didn't need to add any Safeguarding principles because the safeguards report in section D of the VPA DD of GS7587 shows that the project doesn't harm any safeguarding principles. Hence, the project didn't have to include any safeguarding principles in this Monitoring Report. Section F is therefore not applicable.				
<b>Documentation provided by project participant</b>				
<i>New Monitoring Report version 3.0 delivered</i>				
<b>GS VVB assessment</b>				<b>Date: 23/10/2023</b>
CME has given an appropriate clarification, in line with an VPA-DD no safeguarding principals was chosen to monitor during VPA-DD validation hence,				
<b>CL is closed</b>				

#### 4.2. Corrective action required (CARs)

**Table 2 CARs**

<b>CAR ID</b>	<b>01</b>	<b>Section no.</b>	<b>D</b>	<b>Date: 10/10/2023</b>
<b>Description of CAR</b>				
Under section D of the MR tables provided for Data/Parameters are not in line with MR template filling guide available at GS.				
<b>Project participant response</b>				<b>Date: 12/10/2023</b>

This is adjusted, MR tables now in line with MR template filling guide and VPA-DD	
Documentation provided by project participant	
<i>New Monitoring Report version 3.0 delivered</i>	
GS VVB assessment	Date: 23/10/2023
CME has now updated the section D with Data/parameters table in line with MR template filling guide.	
CAR is closed	

#### 4.3 Forward action request

>>

NA

**Appendix 5. Data and parameters fixed ex-ante**

Parameter	<b>Population size of all ages</b>
Data unit:	Million of people
Default values used:	<b>44.5</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	USCB (2015) International programmes. United States Census Bureau. <a href="http://www.census.gov/population/international/">http://www.census.gov/population/international/</a> and UNDESA (2014) Revision of world urbanization prospects. United Nations Department of Economic and Social Affairs. <a href="http://esa.un.org/unpd/wup/">http://esa.un.org/unpd/wup/</a>

<b>PFU</b>	<b>PFU</b>
Data unit:	%
Default values used:	<b>94</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	World Health Organization Global Health Observatory data repository for 2014

Parameter	<b>Average household size</b>
Data unit:	Number of people
Default values used:	<b>5</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	Global Alliance for Clean Cookstoves Data and Statistics website <a href="http://cleancookstoves.org/country-profiles/index.html">http://cleancookstoves.org/country-profiles/index.html</a> Accessed several dates 2013-2014

Parameter	<b>Average household size</b>
Data unit:	Fraction
Default values used:	0.234
Purpose of data	Input into HAPIT model
Source and Verification of the source	VVB has checked the document provided to prove the efficiency of ICS i.e. "tiipaalga_Rapport de tests de performance énergétiques_F3PA_24_07_2015_VF"

Parameter	<b>Population size of children under 5 years of age</b>
Data unit:	Million of people
Default values used:	<b>7.2</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	USCB (2015) International programmes. United States Census Bureau. <a href="http://www.census.gov/population/international/">http://www.census.gov/population/international/</a> and UNDESA (2014) Revision of world urbanization prospects. United Nations Department of Economic and Social Affairs. <a href="http://esa.un.org/unpd/wup/">http://esa.un.org/unpd/wup/</a>

Parameter	<b>Average number of children per household</b>
Data unit:	children
Default values used:	0.8
Purpose of data	Input into HAPIT model

Source and Verification of the source	HAPIT default
---------------------------------------	---------------

Parameter	<b>Average number of adults per household</b>
Data unit:	adults
Default values used:	<b>4.2</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>Mother to child (&lt;5) exposure ratio</b>
Data unit:	fraction
Default values used:	0.85
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>Cook to other adult exposure ratio</b>
Data unit:	fraction
Default values used:	0.6
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>ABint</b>
Data unit:	ADALYs and averted deaths
Default values used:	<b>Calculated in HAPIT</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>Bendpoint</b>
Data unit:	# DALYs or deaths per year
Default values used:	<b>Calculated in HAPIT</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default, Institute for Health Metrics and Evaluation, Global Burden of Disease 2010 Country Databases

Parameter	<b>PAFpre-intervention</b>
Data unit:	%
Default values used:	<b>Calculated in HAPIT</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>PAFpost-intervention</b>
Data unit:	%
Default values used:	<b>Calculated in HAPIT</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>RR</b>
Data unit:	-
Default values used:	<b>Calculated in HAPIT</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

Parameter	<b>zcf</b>
Data unit:	$\mu\text{g}/\text{m}^3$
Default values used:	<b>7.3</b>
Purpose of data	Input into HAPIT model
Source and Verification of the source	HAPIT default

## Appendix 6. Data and parameters monitored

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1, 5.4.1.
<b>Data/ Parameter</b>	<b>PFU fraction</b>
<b>Unit</b>	Percentage
<b>Description</b>	<b>Percentage of project population using polluting fuels</b>
<b>Source of data</b>	Household surveys (Sistema sales records)
<b>Value(s) applied</b>	<b>89.81</b>
<b>Measurement methods and procedure</b>	This survey is undertaken at procurement of a Sistema.bio digester and logged in the Sistema sales records). From the Sistema sales records 4788 users out of 5331 switched away from solid biomass predominantly. This means that in the sales database under the record of: 'Energy source at baseline', all primary electricity and LPG users were deselected in the sales database as well as those users where the energy source at baseline was unknown (blank). $4788/5331 * 100\% = 89,81\%$ .
<b>Monitoring frequency</b>	Entire population of Sistema customers. On a rolling basis, according to verification periods
<b>QA/QC procedures</b>	Internal company procedures
<b>Purpose of data</b>	To establish the baseline fuel of households before switching to biogas
<b>Additional comment</b>	Relevant to SDG indicators 3.4.1, 3.9.1, 5.4.1.
<b>VVB Assessment</b>	VVB has assessed the "Household surveys (Sistema sales records)" against "PFU fraction". which was found in line with the values mentioned same has been checked by VVB during end-user interviews and confirmed that the values mentioned are correct.

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1, 5.4.1
<b>Data/ Parameter</b>	<b>Usage rate (Use<sub>fraction</sub>)</b>
<b>Unit</b>	fraction
<b>Description</b>	Fraction of targeted households using SISTEMA biogas. As per methodology the usage fraction incorporates any household using the biogas at all, regardless of how much the digester is used and how much the baseline technology is used.
<b>Source of data</b>	Household surveys (Sistema sales database)
<b>Value(s) applied</b>	<b>0.997</b>
<b>Measurement methods and procedure</b>	This survey is done continuously through monitoring whether the household is contacting the technical assistance service of Sistema.bio. Out of this entire project population in the continuously updated sales database, systems were under the record 'System status' was reported 'maintenance visit was planned', were deselected, because these systems were not operational. There were 16 incidents of that. $1 - (16/5331) = 0,9970$
<b>Monitoring frequency</b>	Continuous
<b>QA/QC procedures</b>	Internal Sistema.bio procedures

<b>Purpose of data</b>	Establishing the operational fraction of the project population also input into HAPIT model
<b>Additional comment</b>	Relevant to SDG indicators 3.4.1, 3.9.1, 5.4.1.
<b>VVB Assessment</b>	VVB has assessed the “Household surveys (Sistema sales database)” against “ <b>Usage rate (Use<sub>fraction</sub>)</b> ” which was found in line with the values mentioned same has been checked by VVB during interviews with end user and confirmed that the values mentioned are correct.

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1, 5.4.1.
<b>Data/ Parameter</b>	<b>Number of targeted households</b>
<b>Unit</b>	#
<b>Description</b>	Households having bought a Sistema digester
<b>Source of data</b>	Good Farmland Management Kenya Ltd
<b>Value(s) applied</b>	5331
<b>Measurement methods and procedure</b>	Sistema sales records
<b>Monitoring frequency</b>	Continuous
<b>QA/QC procedures</b>	Internal company procedures
<b>Purpose of data</b>	Establishing the size of the project population also input into HAPIT model
<b>Additional comment</b>	Relevant to SDG indicators 3.4.1, 3.9.1, 5.4.1.
<b>VVB Assessment</b>	VVB has assessed the “Good Farmland Management Kenya Ltd” against “ <b>Number of targeted households</b> ” which was found in line with the values mentioned same has been checked by VVB and confirmed that the values mentioned are correct.

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1, 5.4.1
<b>Data/ Parameter</b>	<b>Useful intervention lifetime</b>
<b>Unit</b>	years
<b>Description</b>	The number of years the digester is expected to be operational assuming normal use
<b>Source of data</b>	Good Farmland Management Kenya Ltd
<b>Value(s) applied</b>	<b>15</b>
<b>Measurement methods and procedure</b>	Monitoring failure rate by Sistema.bio
<b>Monitoring frequency</b>	On a rolling basis
<b>QA/QC procedures</b>	Internal company procedures
<b>Purpose of data</b>	Establishing the operational fraction of the project population also input into HAPIT model
<b>Additional comment</b>	Relevant to SDG indicators 3.4.1, 3.9.1, 5.4.1.
<b>VVB Assessment</b>	VVB has assessed the “Good Farmland Management Kenya Ltd” against “ <b>Useful intervention lifetime</b> ” which was found in line with the values mentioned same has been checked by VVB and confirmed that the values mentioned are correct.

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1
<b>Data/ Parameter</b>	<b>Baseline PM2.5 exposure</b>
<b>Unit</b>	µg/m <sup>3</sup>
<b>Description</b>	Exposure to PM2.5 by the main cook in the household when cooking in the traditional way

<b>Source of data</b>	PEM, Personal Exposure Measurement, data gathered by Berkeley Air Monitoring Group, reflected in report: 'Quantifying Health and Gender Co-Benefits from Biogas' -An assessment for clean impact bond initiative- August 2022
<b>Value(s) of monitored parameter</b>	113
<b>Monitoring equipment</b>	N/A
<b>Measurement methods and procedures</b>	We use <b>gravimetric monitoring</b> over 48 hours to establish PM2.5.
<b>Measuring/reading/recording frequency</b>	Every five years
<b>Calculation method (if applicable)</b>	See section E.4
<b>QA/QC procedures</b>	According to approved methodology and by reputable experts; see technical baseline and monitoring report
<b>Purpose of data</b>	Main parameter to input in HAPIT
<b>Additional comments</b>	Relevant to SDG indicators 3.4.1, 3.9.1
<b>VVB Assessment</b>	VVB has assessed the "Quantifying Health and Gender Co-Benefits from Biogas' -An assessment for clean impact bond initiative- August 2022" against " <b>Baseline PM2.5 exposure</b> " which was found in line with the values calculated same has been checked by VVB and confirmed that the method used for measurement is inline with methodology.

<b>Relevant SDG Indicator</b>	3.4.1, 3.9.1
<b>Data/ Parameter</b>	<b>Project PM2.5 exposure</b>
<b>Unit</b>	µg/m <sup>3</sup>
<b>Description</b>	Exposure to PM2.5 by the main cook in the household when cooking with biogas
<b>Source of data</b>	PEM, Personal Exposure Measurement, data gathered by Berkeley Air Monitoring Group, reflected in report: 'Quantifying Health and Gender Co-Benefits from Biogas' -An assessment for clean impact bond initiative- August 2022
<b>Value(s) of monitored parameter</b>	36
<b>Monitoring equipment</b>	N/A
<b>Measurement methods and procedures</b>	We use <b>gravimetric monitoring</b> over 48 hours to establish PM2.5.
<b>Measuring/reading/recording frequency</b>	Every two years
<b>Calculation method (if applicable)</b>	See section E.4
<b>QA/QC procedures</b>	According to approved methodology and by reputable experts; see technical baseline and monitoring report; see technical baseline and monitoring report
<b>Purpose of data</b>	Main parameter to input in HAPIT
<b>Additional comments</b>	Relevant to SDG indicators 3.4.1, 3.9.1
<b>VVB Assessment</b>	VVB has assessed the "Quantifying Health and Gender Co-Benefits from Biogas' -An assessment for clean impact bond initiative- August 2022" against " <b>project PM2.5 exposure</b> " which was found in line with the values calculated same has been checked by VVB and confirmed that the method used for measurement is inline with methodology.

<b>Relevant SDG Indicator</b>	5.4.1
<b>Data/ Parameter</b>	<b>Baseline Quality Hours spent</b>
<b>Unit</b>	Minutes
<b>Description</b>	Time spent on fuel acquisition and preparation and stove preparation time when cooking in traditional ways as representative in the pre-project/ baseline scenario
<b>Measured/calculated/default</b>	Measured
<b>Source of data</b>	Household Surveys
<b>Value(s) of monitored parameter</b>	<b>365 minutes</b>
<b>Monitoring equipment</b>	N/A
<b>Measuring/reading/recording frequency</b>	Every five years
<b>Calculation method (if applicable)</b>	See section E.4
<b>QA/QC procedures</b>	According to approved methodology and by reputable experts; see technical baseline and monitoring report; see technical baseline and monitoring report; see technical baseline and monitoring report
<b>Purpose of data</b>	Main parameter in Gender Equality claim
<b>Additional comments</b>	Relevant to SDG indicator: 5.4.1
<b>VVB Assessment</b>	VVB has assessed the “Household Surveys” against “ <b>Baseline Quality Hours spent</b> ” which was found in line with the values calculated same has been checked by VVB during baseline survey interviews with end users and confirmed that the values mentioned are correct.

<b>Relevant SDG Indicator</b>	5.4.1
<b>Data/ Parameter</b>	<b>Project Quality Hours spent</b>
<b>Unit</b>	Minutes
<b>Description</b>	Time spent on managing digester and preparation and stove preparation time when cooking on biogas
<b>Measured/calculated/default</b>	Measured
<b>Source of data</b>	Household Surveys
<b>Value(s) of monitored parameter</b>	<b>412 minutes</b>
<b>Monitoring equipment</b>	N/A
<b>Measuring/reading/recording frequency</b>	Every two years
<b>Calculation method (if applicable)</b>	See section E.4
<b>QA/QC procedures</b>	According to approved methodology and by reputable experts; see technical baseline and monitoring report; see technical baseline and monitoring report; see technical baseline and monitoring report
<b>Purpose of data</b>	Main parameter in Gender Equality claim
<b>Additional comments</b>	Relevant to SDG indicator: 5.4.1
<b>VVB Assessment</b>	VVB has assessed the “Household Surveys” against “ <b>Project Quality Hours spent</b> ” which was found in line with the values calculated same has been checked by VVB during interviews with end users and confirmed that the values mentioned are correct.



## APPENDIX 8: Gold Standard Verification Protocol

CC IPL's Checklist question	Ref.	MoV <sup>11</sup>	Findings, comments, references, data sources	Draft conclusion	Final conclusion
<b>1. Sustainability Monitoring</b>					
1.1 Have all non-neutral indicators been monitored as per the sustainability monitoring plan?	-	DR,	Yes, all the non-neutral indicators have been monitored as per the sustainability monitoring plan.	OK	OK
1.2 Have the methods to monitor data changed? And are they suitable to the project scale and type?	-	DR	Methods to monitor data have not changed as compared with the monitoring plan in the registered passport and monitoring plan.	OK	OK
1.3 Has the way of monitoring been followed? With the inclusion of dates and parameters?	-	I, DR	The sustainability monitoring plan has been followed as described in the Passport.	OK	OK
1.4 Have mitigation measures been put in place to prevent the risk of the violation of the safeguarding principle of the "Do No Harm" assessment or to neutralize a Sustainable Development Indicator that is being monitored?	-	I, DR	The POA is the distribution of efficient cookstoves to the masses and doesn't involve any large set up or organization base that can be qualified as significant for a "Do Not Harm" procedures.	OK	OK
1.5 Has all the data in the Sustainability development matrix been verified and cross-checked against available sources of project data? Has it been described how sustainable development would be affected if a variance occurred?	-	I, DR	Yes, all data in the sustainability development matrix have been verified and cross-checked from the supporting documents/data and during the on-site audit.	OK	OK
2. Other	-				

<sup>11</sup> MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

CC IPL's Checklist question	Ref.	MoV <sup>11</sup>	Findings, comments, references, data sources	Draft conclusion	Final conclusion
2.1 Are there any issues from the previous validation/verification? (ie FARs, requests / approvals for RMP)	-	DR	No	OK	OK
2.2 Has the project ever received any requests for reviews or incompletes from the UNFCCC or GS Secretariat?	-	DR	No there are no requests for reviews or incomplete for the project.	OK	OK
2.3 The evaluation of the status of mitigation and compensation measures has been verified.	-	DR	Yes, the status of mitigation and compensation measures has been verified.	OK	OK