

Verification and certification report for
GS4GG Voluntary Project Activity



BASIC INFORMATION

Title and GS ID of the Voluntary Project Activity (VPA)	"African Biogas Programme (ABC) – Kenya – VPA006" (GS5801) PoA: African Biogas Carbon Programme (ABC) (GS2747)	
Version number(s) of the VPA-DD to which this report applies	2.3	
Version number of the verification and certification report	2.0 / Project No: 8003061170 - 23/077	
Completion date of the verification and certification report	10/07/2024	
Monitoring period number and duration of this monitoring period	5 th (within the 1 st crediting period / or certification renewal cycle) 01/05/2022 – 31/03/2023 (both dates inclusive)	
Version number of the monitoring report, to which this report applies	1.6	
Project Representative	African Biogas Programme Limited (ABPL) VPA Implementer: Kenya Biogas Programme (KBP)	
Host Parties	Host Parties of the PoA	Is this a host Party to a VPA covered in this report? (yes/no)
	The Republic of Kenya	Yes
Applied methodologies and standardized baselines	GS methodology: "Technologies and Practices to Displace Decentralized Thermal Energy Consumption", v1.0 Standardized baselines: N/A	
Mandatory sectoral scopes linked to the applied methodologies	13 / Technical Area - 13.2	
Conditional sectoral scopes, if applicable	-	
Estimated amount of ex-ante GHG emission reductions or GHG removals for this monitoring period in the included VPAs covered in this report	26,310 tCO ₂ e	
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included VPAs covered in this report	14,525 tCO ₂ e	
UNFCCC reference-nr. and name of the responsible GS-VVB	E-0022: TÜV NORD CERT GmbH	
Name, position and signature of the approver of the verification and certification report	 Digital unterschrieben i. A. von Kröger Anna Anna Kröger Deputy Head of TÜV NORD "JI/CDM" Certification Program	

SECTION A. Executive summary

African Biogas Programme Limited (ABPL) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5th periodic verification of the first crediting period (CPI) of the Voluntary Project Activity:

“African Biogas Programme (ABC) – Kenya – VPA006” (GS 5801)

The PoA was registered on 11/06/2015 while the VPA was registered with GS on 14/03/2019, registration GS 5801 with the 1st crediting period from 14/03/2017 to 13/03/2024 (including both dates) according to the GS registration review.

The VPA is reducing GHG emissions by encouraging the switch from traditional non-renewable biomass (NRB) fuels to renewable biogas. Further, the VPA contributes to the achievement of the UN's Sustainable Development Goals (SDGs) through the dissemination of domestic biogas systems as a local, sustainable energy source, as well as the development of a commercially viable, market-oriented biogas sector. In line with the PoA stated objective, the small-scale voluntary project activity involves the distribution of domestic biogas system of between 2 m³ to 100 m³.

This verification report covers the monitoring period from 01/05/2022 – 31/03/2023 (including both days).

Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions and the contribution to sustainable development. It includes the verification of the:

- implementation and operation of the project activity as given in the most recent version of VPA-PDD and Transition Annex
- compliance of the actual monitoring system and procedures with the provisions of the monitoring plan as a part of registered VPA-PDD, the GS SDG monitoring matrix and the applied approved monitoring methodology,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

Scope

The verification of this GS registered project is based on the validated GS project design document ^{/PDD/}, the carbon monitoring and sustainability monitoring report ^{/MR/}, corresponding previously issued verification reports, and the registered GS validation report ^{/VAL/}, supporting documents made available to the verifier and information collected through performing interviews and during site visit assessment.

Furthermore, publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Gold Standard for Global Goals ^{/GS4GG/} requirements
- Other relevant rules, including the host country legislation,
- GS4GG Validation and Verification Standard ^{/VVS/},
- monitoring plan as given in the registered VPA-DD ^{/PDD/} and Transition Annex ^{/TA/}
- Approved GS methodology ^{/TPDDTEC/}

Details of the VPA location in table A-1 below:

Table A-1: Project Location

No.	Project Location
Host Country	Kenya
GPS coordinates of host country:	
Latitude:	1 00 N
Longitude:	38 00 E
VPA Region:	Kenya

As a result, of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the approved PoA-DD, VPA-DD, and Transition Annex (TA).
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., “Technologies and Practices to Displace Decentralized Thermal Energy Consumption”, version 1.0.
- the monitoring system is in place and functional. The VPA has generated GHG emission reductions.

As the result of the 5th periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

Emission reductions: **14,525 tCO₂e**

SECTION B. Verification team, technical reviewer and approver

Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report / workplan
- A desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents with the use of verification protocol^{/CPM/} according to the GS Validation and Verification Standard^{/VVS/} and additional GS4GG requirements^{/GS/},
- Verification planning,
- Remote assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting,
- Resolution of corrective actions (if any),
- Final verification reporting,
- Technical review,
- Final approval of the verification.

Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM and GS accreditation requirements

a contract review was carried out before the contract was signed.

Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader and one team member was appointed. The list of involved personnel, the tasks assigned, and the qualification status are summarized below.

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GS-VVB or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	IR	Rami	Kunal	TUV USA	x	x	x	x
2.	Team member	EI	Wesonga	Bonface	-	x	x	x	x

B.2. Technical reviewer(s) of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GS-VVB or outsourced entity)
1.	Technical reviewer	IR	Winter	Stefan	TÜV NORD CERT GmbH
2.	Observer (in technical review)	IR	Vargas Madrid	Sina	TÜV NORD CERT GmbH

SECTION C. Means of verification

C.1. Desk/document review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the approved monitoring plan;
- the approved version of the VPA-DD;
- the GS approved version of the VPA verification report;
- the GS VPA Inclusion review;
- approved Transition Annex
- the monitoring report, including the claimed emission reductions for the VPA,
- the emission reduction calculation spreadsheet.

Other supporting documents, such as any publicly available information and background information were reviewed.

On-site assessment / using other Means of Verification

As most essential part of the verification exercise, it is indispensable to carry out a remote audit in order to verify that the project is implemented in accordance with the applicable criteria and applied methodology, registered VPA-DD, and approved Transition Annex, where applicable.

A physical site visit inspection was conducted by the verifying VVB (Carbon Check) from 26/07/2022 – 28/07/2022 as part of the fourth performance certification (verification). Therefore, in line with the GS4GG Site Visit and Remote-Audit-Requirements, v2.0, and the GS Validation and Verification Standard, v1.0, a physical site visit was not required for this 5th performance certification. A remote site visit was therefore deemed necessary and sufficient. The remote audit was done by means of electronic media (MS Teams and telephone interviews with end users) and document sharing where an indepth analysis of the MR and the provided supporting documentation was analysed and findings raised.

The remote audit was conducted to check the implementation status of the project and the monitoring procedures/data applied in the calculation of emission reductions. Changes to the key SDG Impact indicators and the achievement and implementation of mitigation / compensation measures are other integral parts of the remote inspection assessment. Further,

The main tasks covered during the remote audit include, but are not limited to:

- ^a an investigation of whether all relevant equipment is installed and works as anticipated.
- ^b The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- ^c Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- ^d The monitoring processes, routines and documentations were audited to check their proper application.
- ^e The monitoring data and monitoring/usage survey data were checked.
- ^f The data aggregation trails were checked via spot sample down to the level of the data generation.
- ^g Competency check of the ground personnel who conducts the Usage/monitoring survey.
- ^h Appropriateness of the data collection, sampling and reliability test for the monitored sampling parameters.
- ⁱ Possibility of leakage emissions were also checked.

During the remote audit, the Verification Team (VT) performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of the ABPL, KBP and Ecofrontier staff including the operational staff of the project, monitoring and evaluation team, leadership team of KBP and end-users were interviewed. The main topics of the interviews are summarized in section C.2 that follows.

C.2. On-site inspection

Duration of on-site inspection: 29/09/2023, 18/10/2023, 31/10/2023 (by means of remote audit techniques)				
No.	Activity performed on-site	Site location	Date	Team member
1.	Introductory meeting, confidentiality, audit scope, organizational and management structure, qualifications, implementation status, roles and responsibilities, QA/QC procedures, status of pervious performance review, drawing samples, and schedule.	Online	29/09/2023 and 18/10/2023	Mr. Kunal Rami Mr. Bonface Wesonga
2.	Interviews	Remote	18/10/2023	
3.	Closing meeting	Online	31/10/2023	

Interviews /IM01/

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Wahome	Salome	ABPL-Carbon Project Manager	18/10/2023	Introductions, confidentiality, audit scope, organizational and management structure, qualifications, implementation status, roles and responsibilities, QA/QC procedures, status of pervious performance review, drawing samples, and schedule.	Mr. Kunal Rami Mr. Bonface Wesonga
2.	Kamwana	Veronica	ABPL- Community Outreach Officer			
3.	Wasonga	Michael	ABPL- Chief Operations Officer			
4.	Kinusu	Kevine	ABPL- Managing Director			

Interviews /IM02/

List of randomly selected households				
No.	HH Unique ID	Name	Village, County	Category
1	KE-NAI-1601-16384	Kariuki Simon	Dagoetti Waithaka, Nairobi County	Usage survey
2	KE-KIA-1512-27727	Muchiri Phrisila Nyambura	Gatei, Kiambu County	Usage survey
3	KE-KIT-1702-17448	Kula Mulewa Japheth	Maungu, Kitui County	Usage survey
4	KE-NYE-2202-30042	Gitare Wanjiku Lucy	Kahurura Village, Nyeri County	Usage survey
5	KE-KAJ-2201-29095	Njau Samwel Richard	Bookland, Kajiado County	Usage survey
6	KE-KIA-2001-28653	Kamau Christopher	Ting'ang'a, Kiambu County	Usage survey
7	KE-UAS-2006-28742	Misoi Ann	Chebarus, Uasin Gishu County	Usage survey
8	KE-TAI-2106-29758	Mwasi Iveta Shigare	Msindunyi, Taita Taveta County	Usage survey
9	KE-BAR-2203-27707	Korir Stanley Kosgei	Chekorongos, Baringo County	Usage survey
10	KE-KIS-2204-29014	Omare Barongo Patrick	Masongo, Kisii County	Usage survey

11	KE-MER-2101-28471	Gakii Kinyuru Faith	Rugumo, Meru County	Usage survey
12	KE-KAJ-2105-29082	Motong'o Elizabeth	Emanyatta, Kajiado County	Usage survey
13	KE-THA-2001-28483	Mbaya Kirika Duncan	Thigaa, Tharaka Nithi County	Usage survey
14	KE-NAK-1905-26649	Wangui Macharia Jane	Aremi, Nakuru County	Usage survey
15	KE-MAK-1904-27533	Kyule Eunice Ngwili	Kiatine, Makueni County	Usage survey
16	KE-KIS-1803-27120	Onyando Odhong Elly	Nyamasaria, Kisumu County	Usage survey
17	KE-KER-1803-26238	Bett Sally C	Korosyot, Kericho County	Usage survey
18	KE-NAN-1701-17054	Tanui Joseph	Irimis, Nandi County	Usage survey
19	KE-BAR-2206-29528	Songol Emmanuel	Kaptigen, Baringo County	Monitoring survey
20	KE-NYE-2203-30034	Ndiritu Muthoni Monica/Wambugu Moses Ndiritu	Kahurura, Nyeri County	Monitoring survey
21	KE-NYA-1512-15111	Njihia Mwihaki Margaret	Chuma, Nyandarua County	Monitoring survey
22	KE-NAK-1701-17563	Ngwinyi Wangui Nelly	Gonjiri, Nakuru County	Monitoring survey

C.3. Sampling approach

The verification team followed the CDM “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities”^{/SSS/} v9.0, para 29 to 32 for taking sample out of the PP’s sample.

Due to the large number of installations, the verification team has adopted the acceptance sampling approach (AS) in accordance with paragraphs 29, 30, 31 to 32 of the CDM Standard: Sampling and surveys for CDM project activities and programmes of activities^{/SSS/} version 09. The verification team invoked provisions of the para 32 of the applied standard to apply the producer risk and consumer risk as below:

AQL	0.5%
UQL	20%
Producer risk	5%
Consumer risk	10%
Sample size	18
Acceptance Number	0
Total samples covered	22

The verification team considered an AQL 0.5% and UQL 20%, Producer risk of 5% and consumer risk of 10% for determination of the sample size for site assessment. Considering the above paragraph under applied sampling standard, the VVB is required to verify 18 samples under this approach with acceptance (c) number 1. The verification team has verified total of 22 sampled end users from the PP’s samples which consist 4 farmers for monitoring survey and 18 farmers for usage survey (4 farmers age 1, 3 farmers for age 2, 3 farmers for age 3, 2 farmers

for age 4, 2 farmers for age 5, 2 farmers for age 6, and 2 farmers for age 7) which were over and above the minimum required sample size to further verify the project implementation on ground for the entire vintage under crediting during current monitoring period. The acceptance sample for the two categories were randomly selected from respective PP samples (Survey A and survey B) using Excel randomizer. The list of the end users verified through physical site inspections is presented under section C.2.

From the observations / results from 22 verified biodigester owners, the following could be confirmed:

1. Biodigester owner follow up information: location (village and county), mobile of respondent and biodigester owner and date of installation (year)
2. The usage rate of the technologies in households;
3. The pre-project scenario: baseline technology and fuels, continued use of baseline fuels and frequency of their use
4. Project technology and fuel use: estimated frequency of use of biogas
5. Animal Waste Management: type and average number of animals at site and animal waste used in the biodigesters

No PP sampling-based monitoring records/data results were found discrepant during the VVB verification remote audit. 18 verified samples visited and interviewed were found to be in good working order. Based on the assessment of the randomly selected samples, it could be confirmed that the result presented for continuous use of baseline technologies and fuels and usage survey, are reproducible and thus, sampling result is deemed acceptable. Further, the verification team reviewed all the primary monitoring records during the remote audit assessment to assess the consistency of information with ER calculation spreadsheet and found the monitoring data to be correctly transcribed into the ER sheet and MR. Based on that, verification team concludes that sampling results and values presented by CME in the MR and ER calculation spread sheet and results of monitoring survey and usage survey are consistent with the remote observations and interview with the end users.

The details of the sampled users assessed to confirm the project implementation and other monitoring aspects are presented in this report.

A summary of interview questions and feedback received are presented in the below table:

Questions for households on site	Summary of feedback
Date of acquisition (mainly year)	As per biodigester ownership certificate
Telephone contact	Varied
Cost of the Biodigester	Varied
Family Size	Varies
Usage rate	About 77.3% (adjusted)
Monitoring survey	Only 1 farmer admitted they did not participate in monitoring survey.
Usage survey	All farmers confirmed to have participate in the usage survey.
Baseline fuels	Firewood, charcoal, LPG
Project fuel	Biogas with occasional use of baseline fuel
Whether surveys were conducted (if applicable – part of the sample)	Confirmed accordingly
Animals types present	Dairy cattle, other cattle, poultry, pigs, goats, and sheep
Benefits of the use of biodigesters	Reduction in costs of firewood, reduction or elimination of respiratory diseases and breathing problems, saved time, and economic benefits (such as as from bio-slurry sales), improved agricultural productions (bio-slurry farm application)
Overall impression	Pleased and advocate for expansion to reach non-users through financial support for biodigester installations.

Draft verification reporting

On the basis of the desk review, remote audit, follow-up interviews and further background investigation, the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is be issued if:

- information is insufficient or not clear enough to determine whether the applicable GS4GG requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued if the monitoring and reporting require attention and/or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification, refer appendix 4.

Final reporting

Upon successful closure of all raised CARs and CLs, the final verification report including a positive verification opinion is issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision-making process up to the technical review.

As a result of the technical review process, the verification opinion and the topic specific assessments, as prepared by the verification team leader, may be confirmed or revised. Furthermore, reporting improvements might be achieved.

Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification is carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the verification team submits the verification report including the verification opinion to the client via e-mail and to Gold Standard via the GS registry.

SECTION D. Verification findings

D.1. Description of Project

D.1.1 General Description of Project

Means of verification	An in-depth review of the MR section A was carried out during desk review to confirm whether the project purpose, description, location, applied methodology and crediting period are consistent with the approved GS4GG registered PoA-DD, and VPA-DD, and Transition Annex (TA).
	Purpose and general description of project

	VPA006 is part of the African Biogas Carbon Programme (ABC) and is the second VPA that is implemented in Kenya. The overall objective of the VPA is to contribute to the achievement of the Sustainable Development Goals (SDGs) through the dissemination of domestic biogas systems as a local, sustainable energy source, as well as the development of a commercially viable, market-oriented biogas sector. By encouraging the switch from traditional non-renewable biomass (NRB) fuels to renewable biogas the VPA is reducing greenhouse gas (GHG) emissions. The Kenya Biogas Programme provides biodigesters to individual households. The programme was founded by the Africa Biogas Partnership Programme (ABPP), a partnership between the Dutch government, Hivos and SNV Netherlands Development Organization. ABPP has supported national programmes in Kenya, Tanzania, Uganda, Ethiopia and Burkina Faso, with Hivos as fund and programme manager. The Kenya Biogas Programme (KBP), is the lead implementing entity in Kenya with the responsibility of coordinating, facilitating, and monitoring sector functions and supporting the technical, financial and institutional architecture necessary for development of the domestic biogas sector in Kenya. The VPA is implemented based on private sector market-oriented principles, but also develops governmental support for a favorable regulatory and policy environment, as well as general buy-in promotion and extension. The VPA stimulates the installation of domestic biogas systems of between 2 m³ to 100 m³ capacities. This VPA was retroactively included in the ABC PoA and includes biogas systems of which the construction started since 23/10/2015. VT reviewed section A.1 of MR and cross-checked project purpose and description information against information in GS approved VPA-DD and approved TA for misstatements. VT confirmed that the project has been correctly described in line with approved VPA-DD and approved Transition Annex without misstatements. Location of Project: The location of the VPA is the entire territory of the Republic of Kenya represented approximately by the coordinates 1 00 N, 38 00 E. VT crosschecked information in section A.2 of MR against that in Approved VPA-DD and Transition Annex and confirmed that the location of the project is correct and consistent in both approved documents. Reference of applied methodology GS Methodology: <i>Technologies and Practices to Displace Decentralized Thermal Energy Consumption, version 1.0.</i> VT reviewed section A.3 of MR and crosschecked the information against that in approved VPA-DD and TA and confirms the methodology and version reported in MR are correct. Crediting period of project: This is the 1st crediting period which is a 7-year renewable from 14/03/2017 – 13/03/2024 inclusive of both dates. VT reviewed section A.4 of MR and crosschecked the information against that in approved VPA-DD and Transition Annex for misstatements, and correctness. VT confirmed that the crediting period and renewability are correctly reported in MR and are consistent in both MR and VPA-DD without any misstatements and misspellings in dates. The following sources of information have been used in this context: • /PoA-DD/ • /VPA-DD/ • /MR/ • /TA/	
Findings	☒	The project has been implemented as described in the latest version of the VPA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	☐	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4):
	☒	In this context the following CARs, CLs have been raised: CAR02

Conclusion	☐	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	The review of project documentation including the distribution database it can be confirmed that w.r.t. the realized project location, monitoring period and crediting period, the VPA is described in accordance to the registered VPA-DD and Transition Annex after the minor corrections.	

D.2. Implementation of Project

D.2.1. Description of implemented project

Means of verification	The verification team conducted an in-depth review of the draft monitoring report (version 1.0) and compared against the registered VPA-DD and TA related to information of the project technology and implementation status.	
	Description of implemented project: The Kenya Biogas Programme (KBP), the lead implementing entity in Kenya, with the responsibility of coordinating, facilitating and monitoring sector functions and supporting the technical, financial and institutional architecture necessary for development of the domestic biogas sector in Kenya. The VPA is implemented based on private sector market-oriented principles, but also develops governmental support for a favorable regulatory and policy environment, as well as general buy-in promotion and extension. The VPA stimulates the installation of domestic biogas systems of between 2 m ³ to 100 m ³ capacities. This VPA was retroactively included in the ABC PoA and includes biogas systems of which the construction started since 23/10/2015.	
	Installed technology The Verification Team reviewed section B.1 of MR and croschecked information about biodigester model against that in the technical data shared by PP, approved VPA-DD, TA and ER spreadsheet and confirmed that the following models are correctly reported in MR and no mistatments are observed. Models with included in under this VPA their lifespan are:	
	Type	Model
	Fixed dome	Modified Kenbim Model
		KENBIM
		AKUT
		Modified Camartec
	Plastic digester types	Flexi biodigesters
		Home Biogas
		Kentainer
		Takamoto
	Forward Action Requests VT reviewed GS approved performance review and verification report from previous monitoring period and confirm a FAR was raised and the FAR has been appropriately addressed. For details, please refer to appendix 4 of this report.	
	Implementation status The following units with models have been installed, as confiemd by CME during interviews with VT.	
	Row Labels	Number installed
	AKUT	122
	BlueFlame BioSlurriGaz	58
	FLEXI	340
	Home Biogas	66
	KENBIM	1749
	MKD	1902

			Modified Camartec Digester	41
			Topflame	167
			Grand Total	4,445
Findings	☐	The project has been implemented as described in the latest version of the VPA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.		
	☒	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4):		
	☒	In this context the following CARs, CLs have been raised:		
		CL01		
Conclusion	☐	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.		
	☒	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.		
				The VPA has been implemented and operated as described in the registered VPA-DD and TA after the raised carification has been appropriately addressed.

D.2.2. Post-registration changes

D.2.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology of applied standardise baseline

VT has checked the GS registry and interviewed CME in online meeting during remote audit to confirm whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below, as confirmed by VT:

☒	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM).have been submitted to the GS prior to the current monitoring period.		
☐	The following TDfrMP or TDfMM have been approved or are under approval by GS.		
	1	Title	
		Status	☐ under approval; ☐ approved (approval No.:)
		Appr.date	N/A
		Ref. No.	N/A
☒	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the VPA		
☐	An approval of the following TDfrMP or TDfMM is to be requested from GS for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		
	1	Issue:	
	2	Issue:	
☐	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		

	1	Issue:	
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D.2.2.2. Corrections

VT has checked the GS registry and interviewed CME in online meeting during remote audit to confirm whether any corrections to VPA information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below, as confirmed by VT:

☒	During the verification of the current MP no need for corrections has been identified.		
☐	The following corrections have been applied:		
	1.	Issue:	
	2.	Issue:	
	The VPA-DD has been revised accordingly: (New) version No.:		
	It is confirmed that the updated / corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.		
	☐ A related post registration change has been submitted prior to the issuance request. No related approval numbers and dates are mentioned on the corresponding subpages of the PoA submitted to GS. The related documentation is accessible via:		
	☐ A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

D.2.2.3. Changes to start date of crediting period

☒	N/A - as this is not the first verification within the crediting period
☐	The PPs do not intend to change the start date of the crediting period.
☐	The approval to change the start date of the crediting period on DD/MM/YYYY

D.2.2.4. Permanent changes from registered monitoring plan, applied methodology, or applied standardized baseline

VT has checked the GS registry and interviewed CME in online meeting during remote audit to confirm whether whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below, as confirmed by VT:

☐	No PCfrMP, PCfMM or PCfSB have been submitted to GS prior to the current monitoring period		
☒	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by GS		
	1	Title	African Biogas Carbon Programme (ABC)
		Status	☐ under approval; ☒ approved
		Appr.date	23/07/2019
		Ref. No.	GS2747
☒	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with GS4GG requirements and applied methodology.		
☐	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from GS for the current MP as per GS4GG Annex 1.		
	1	Issue:	
	2	Issue:	

D.2.2.5. Changes to design of approved project

VT has checked the GS registry and interviewed CME in online meeting during remote audit and checked the GS approved PoA Transition Annex to confirm whether there are any changes to the VPA design (CoPD) and to confirm whether these changes have been approved prior or during this monitoring period or submitted with this MP’s monitoring report. VT reviewed responses from interview and crosschecked the information against information in approved VPA-DD and Transition Annex and confirmed that the information resported in MR is correct and without deviations and material misstatements. These are summarized in the table below:

☒	No CoPD has been submitted to the GS to the current monitoring period		
☐	The following CoPD have been approved or are under approval by GS		
	1	Title	
		Status	☐ under approval; ☐ approved
		Appr. Date	
		Ref. No.	
	2	Title	
		Status	☐ under approval; ☐ approved
		Appr. Date	
Ref. No.			
☒	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
☐	An approval of the following CoPD is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
☐	The following CoPD for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

D.3. Description of monitoring system applied by the project

Means of verification	Section C of the MR presents the organization's management, manpower, task and responsibilities, competency assessment and a table describing the data flow for collecting, recording, quality check, calculations and reporting. The verification team has checked the approved monitoring system in the approved VPA-DD and TA as described to determine whether it complies with the related requirements by means of comparison of the MR with applied methodology^{/TPDDTEC/}, approved VPA-DD, anfd Transition Annex. VT also interviewed project representatives and participants to confirm whether there are any changes in the management structure of the organization and to confirm the information reported in MR is correct and consistent. The following sources of information have been used in this context: • /MR/ • /VPA-DD/ • /TPDDTEC/ • /TA/ • /IM/		
Findings	☒	The monitoring system is in accordance with the approved project monitoring plan and the applied methodology of the registered version of the VPA-DD.	
	☐	In this context the following CARs, CLs, FARs have been raised:	

Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CL / FARs has been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	The PP confirmed that the management structure roles, tasks and responsibilities are in line with the approved VPA-DD and Transition Annex. Upon crosscheck of interview results against approved monitoring plan, VT concludes that the monitoring system complies with the approved project monitoring plan in the registered VPA-DD, TA and the applied methodology.	

D.4. Data and Parameters

D.4.1. Data and parameters fixed ex-ante or at renewal of crediting period

Means of verification

The verification team has crosschecked the ex-ante parameters and values stated in Section D.1 of MR against data in section B.4.2 of approved VPA-DD and applied methodology to determine whether all parameters fixed ex-ante for the crediting period have been correctly indicated without any misstatements. VT confirmed that all parameters validated ex-ante and fixed for CP1 are correctly indicated with correct values without deviations.

The following parameters have been fixed at validation or at renewal of crediting period:

No.	SDG	Parameter	Value	Unit		
1	13	$f_{NRB,y}$	89.48	%		
2	13	$EF_{b, bio}$	112	tCO ₂ /TJ		
3	13	$EF_{p, bio}$	112	tCO ₂ /TJ		
4	13	$EF_{p, fuel}$	Kerosene = 71.9 LPG = 63.1	tCO ₂ /TJ		
5	13	NCV_{bio}	0.015	TJ/tonne		
6	13	$EF_{b, fuel}$	Kerosene = 71.9 LPG = 63.1	tCO ₂ /TJ		
7	13	NCV_{fuel}	Kerosene = 0.0438 LPG = 0.0473	TJ/tonne		
8	13	VS_T	Dairy cows = 1.90 Other cattle = 1.50 Market Swine = 0.30 Breeding swine = 0.30 Goats = 0.35 Sheep = 0.32 Poultry = 0.02	kg/head/day		
9	13	Bo_T	Dairy cows = 0.13 Other cattle = 0.10 Market swine = 0.29 Breeding swine = 0.29 Goats = 0.13 Sheep = 0.13 Poultry = 0.24	m ³ CH ₄ /kg		
10	13	$\eta_{biogas\ stove}$	99.4	%		
11	13	$MCF_{x,k}$	3.39	%		
12	13	$BB_{b1,bio}$	3.66	Tonnes/year		
13	13	$BB_{b2,bio}$	7.48	Tonnes/year		
14	13	$BB_{b3,bio}$	7.06	Tonnes/year		
15	13	$EF_{awms,T}$	<table><tr><th>Animal T</th><th>Value</th></tr></table>	Animal T	Value	m ³ CH ₄ /kg
Animal T	Value					

					Dairy cow	1	
					Goat	0.017	
					Other cattle	1	
					Sheep	0.015	
					Market swine	1	
					Poultry	0.02	
					Breeding swine	1	
	16	13	PL	10	%		
	The following sources of information have been used in this context: • /MR/ • /VPA-DD/ • /IPCC/ • /IM/ • /TA/ • /MRTG/						
	Findings	☒	The MR and the ER calculation have considered the parameters fixed ex-ante for the crediting period correctly, no deviations have been observed.				
☐		The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification:					
☐		In this context the following CARs, CLs, FARs have been raised:					
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.					
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.					
	The data and parameters listed in the section D.1 of the MR were crosschecked with the applied methodology, VPA-DD and are consistent. The section is filled according to the MR v1.1 template guidelines ^{/MRTG/} .						

D.4.2. Data and parameters monitored

Means of verification	During the verification all relevant monitoring parameters listed in section D.2 of the MR and Section B.5.1 of approved VPA-DD have been verified with regard to the (i) appropriateness of the applied measurement / determination method, (ii) the correctness and accuracy of the values applied for ER calculation, (iii) applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5). The following sources of information have been used in this context: • /MR/ • /VPA-DD/ • /SDG_ER/ • /TA/ • /RU/	
Findings	See CL02	
Conclusion	☐	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	☒	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 5.
		After appropriate corrections were carried out by the VPA Implementer, it could be concluded that all monitoring parameters have been measured / determined without material misstatements and in line with VPA-DD, TA and applied methodology.

D.4.3. Comparison of monitored parameters with last monitoring period

Means of verification	Section D.3 of monitoring report describes the comparison of monitored parameters with the last monitoring period according to the GS4GG and approved VPA-DD, and Transition Annex.				
	VT checked evidences for data and information and crosschecked the information and data in the evidences against approved VPA-DD, approved monitoring plan, TA, applied methodology and other sources of information including information from independent research, for correctness, accuracy, and deviations and compared the values for each monitored parameter to those in section D.3 of MPIV MR.				
	Data / Parameter	Value obtained in this monitoring period		Value obtained last monitoring period	
	Percentage of biogas users who use slurry as a fertilizer	99		97	
	Perceived improvement in health by the user (incidence of eye problems and respiratory illness)	98.9%		93.1%	
	Time savings	Yes, more time available than before having biogas	94.2%	Yes, more time available than before having biogas	95.7%
		No, just the same as before (between before and after having Biogas)	5.8%	No, just the same as before (between before and after having Biogas)	4.3%
		Yes, less time available than before having biogas	0.0%	Yes, less time available than before having biogas	0.0%
	Usage of saved time	Income generating including farming	73%	Income generating including farming	30%
		Farming	0%	Farming	24%
		Recreation	11%	Recreation	13%
		Helping my husband	19%	Helping my husband	6%
		Social Activity	8%	Other	26%
		Other	17%		
	Number of biogas plants installed	4,455		4,189	
	Number of masons and biogas enterprise staff attending training programmes	80		19	
	GS-10 Technology transfer and technological self-reliance	75,946		60,558	
	U _{p1,y}	78.63%		82.40%	
	N _{p1,y}	1,149,098		1,290,382	
	O _{p1,y}	263.40		308.04	
	LE _{p1,y}	0		0	
	N _{T,h}	Number of animals	#/hh	Number of animals	#/hh
		Number of dairy cattle	4.38	Number of dairy cattle	3.87
		Number of other cattle	0.36	Number of other cattle	0.76
		Number of pigs (for market)	0.89	Number of pigs (for market)	0.48
		Number of pigs (for breeding)	1.19	Number of pigs (for breeding)	0.12
		Number of poultry	50.38	Number of poultry	27.06
		Number of sheep	2.01	Number of sheep	1.65
		Number of goats	1.21	Number of goats	2.37

	BB _b ratio	Baseline scenario		Percent age	Baseline scenario	
		B1: Firewood used to meet (more than 50%) of my cooking needs		76.4%	B1: Firewood used to meet (more than 50%) of my cooking needs	
		B2: Charcoal used to meet (more than 50%) of my cooking needs		7.9%	B2: Charcoal used to meet (more than 50%) of my cooking needs	
		B3: Firewood & charcoal used to meet (more than 50%) of my cooking		1.0%	B3: Firewood & charcoal used to meet (more than 50%) of my cooking	
		B4: Other fuels		14.7%	B4: Other fuels	
	BB _{b4, fuel}		0.24 LPG and 0.44 biomass		N/A	
	BB _{b1,2,3, fuel}		0		0	
	BB _{p1, bio}		0.612		0.612	
	BB _{p1, fuel}		0.04		0.04	
	MS _{P,S,K}	Animal T		Fraction	Animal T	
		Dairy cattle		9.30%	Dairy cattle	
		Other cattle		38.00%	Other cattle	
		Market swine		76.43%	Market swine	
		Breeding swine		60.91%	Breeding swine	
Poultry		94.31%	Poultry			
Sheep		96.59%	Sheep			
Goat		100.00%	Goat			
MS _{T,S,k}	Animal T		Fraction	Animal T		
	Dairy cattle		90.7%	Dairy cattle		
	Other cattle		62.0%	Other cattle		
	Market swine		23.6%	Market swine		
	Breeding swine		39.1%	Breeding swine		
	Poultry		5.7%	Poultry		
	Sheep		3.4%	Sheep		
	Goat		0.0%	Goat		
GWP _{CH4}		28		28		
Bio	How do you apply bio-slurry		% of farmers	How do you apply bio-slurry		
	Use directly for various purposes		31%	Use directly for various purposes		
	Store it first		68%	Store it first		
	I don't use it / discarded		1%	I don't use it / discarded		
N _{op1,y}		4,451		4,189		
The following sources of information have been used in this context:						
• /MR/ • /SDG_ER/ • /TA/ • /VPA-DD/ • /MRTG/						
Findings	☒	No errors, omissions, misstatements or incomplete information has been identified.				
	☐	There are identified mistakes.				
	☐	In this context the following CARs, CLs, FARs have been raised:				

		-
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	VT confirms that the information is correctly filled and is sufficient as per MR template guide, and all requirements of the monitoring plan have been fully met.	

D.4.4. Implementation of sampling plan

Means of verification	The verification Team croschecked data in information reported in section D.4 of MR against the approved sampling design in the approved VPA-DD, TA, and applied methodology. VT further interviewed CME, VPA implementer and other project participants and confirmed that the sampling was done as per the approved VPA-DD, TA and applied methodology. Sampling Approach and methodology The sampling approach used adheres to the monitoring requirements of the applied methodology '<i>Technologies and Practices to Displace Decentralized Thermal Energy Consumption</i>' (version 1.1). The VPA implementer applied a multistage sampling approach for selection of the households in an appropriate proportionate representation of different counties for the entire project boundary. Survey A (User Survey): VT reviewed user survey record and confirmed that the sample size used as 191 meets minimum sampling requirement of 100 and is representative of the project boundary. A larger sample of 105 was reached which meets the minimum sample size requirements prescribed by the methodology. Survey B (Usage Survey): VT reviewed user survey record and confirmed that the sample size used as 245 consisting of 35 HHs per age (7 ages in total) meets the minimum sampling requirement of a total of 30 HHs per age and is representative of all the HHs within the project boundary. PFT: Monitoring period IV results are valid for this monitoring period and VT has reviewed monitoring period IV MR and confirmed that data and information applied in this monitoring period is correctly reported in the MR. During remote audit interviews via online meeting, CME, VPA implementer and project participants and representatives confirmed that data is appropriately collected, analysed and archived as per approved monitoring plan and approved sampling design. VT reviewed analysis results in survey analysis sheet for correctness and accuracy of calculation and can confirm that all calculations involved in demonstrating reliability requirements are correct, accurate and fully met. VT can thus confirm that the VPA implementer/CME has correctly applied the implemented sampling plan including - description of the implemented sampling design - collected data - analysis of collected data - demonstration on whether the required confidence / precision has been met. The following sources of information have been used in this context: /MR/ /SDG_ER/ /PoA-DD/ /VPA-DD/ /TA/ /US/ /IM/	
Findings	☐	The CME has not applied sampling approaches for the survey
	☒	The CME has applied sampling approaches for the survey.
	☒	In this context the following CARs, CLs, FARs have been raised:
		CL03

Conclusion	☐	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs / CLs / FARs have been addressed appropriately. For details, refer to Appendix 4.
	After appropriate corrections, it could be concluded that the sampling method is plausible.	

D.5. Calculation of SDG Outcomes

D.5.1 Calculation of baseline value or estimation of baseline situation of each SDG Impact

Means of verification	During the verification, VT crosschecked data and information in section E of MR against data and information in approved VPA-DD, TA, approved monitoring plan, and applied methodology. VT also reviewed SDG/ER spreadsheet for correct application of formulas and calculations as per approved approved VPA-DD, TA, and applied meth. Baseline Emissions 1. Baseline emissions from fuel use: The following equation is applied: $BE_{b,CO2,y} = \sum_b BB_{b,fuel} * NCV_{fuel} * EF_{b,fuel} + (BB_{b,bio} * NCV_{bio} * EF_{b,bio} * f_{NRE})$ 2. Accounting for baseline emissions from manure handling The following equation is applied: $BE_{b,CH4,h,y} = \frac{(VS_T * 365) * (B_{0,T} * 0.67 kg/m^3 * MCF_{x,k} * MST_{x,k} * GWP_{CH4} * NT_{h})}{1000}$ Baseline emission calculated is 18,239 tCO₂e. The following sources of information have been used in this context: • /MR/ • /SDG_ER/ • /PoA-DD/ • /VPA-DD/ • /TA/ • /TPDDTEC/	
Findings	☐	The baseline situation found compliant with the VPA-DD No errors, omissions, misstatements, or incomplete information has been identified.
	☒	The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.
	☒	In this context the following CARs, CLs, FARs have been raised: CL04; CL05
Conclusion	☐	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☒	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	It could have concluded the baselines values have been estimated in accordance with SDG requirements as correct and the emissions are conservatively determined. The equations applied in the calculations have been compared with the approved VPA-DD and the applied methodology. All equations, respective values have been assessed and the supporting documentation cross-checked.	

D.5.2 Calculation of project value or estimation of project situation of each SDG impact

Means of verification	During the verification, VT crosschecked data and information in section E of MR against data and information in approved VPA-DD, TA, approved monitoring plan, and applied methodology. VT also reviewed SDG/ER spreadsheet for correct application of formulas and calculations as per approved approved VPA-DD, TA, and applied meth.		
	Source 1: Accounting for project emissions due to the continued use of fossil fuels and non-renewable biomass		
	The following equation has been applied:		
	$PE_{p,CO2,y} = \sum (BB_{p,fuel} * NCV_{fuel} * EF_{p,fuel}) + (BB_{p,bio} * NCV_{bio} * EF_{p,bio} * f_{NRB})$		
	Where:		
	PE _{p,CO2,y}	1.030	Cumulative project CO2 emissions from the use non-renewable biomass and fossil fuels (tCO2/hh/year)
	BB _{p,fuel}	0.04	The quantity of fossil fuel consumed in the project scenario p, in tonnes/year
	NCV _{fuel}	0.0473	Net calorific value of fossil fuel, in TJ/tonne
	EF _{p,fuel}	63.1	CO2 emission factor of fossil fuel in project scenario <i>p</i> , in tonnes/TJ
	BB _{p,bio}	0.612	The quantity of biomass consumed in the project scenario p, in tonnes/year
NCV _{bio}	0.015	Net calorific value of biomass, in TJ/tonne	
EF _{p,bio}	112	CO2 emission factor of biomass in project scenario <i>p</i> , in tonnes/TJ	
f _{NRB}	89.48%	Fraction of non-renewable biomass, in percentage	
Source 2: Accounting for project emissions due to the methane emissions from manure handling			
The following equation has been applied:			
$PE_{p,CH4,y} = GWP_{CH4} * \sum (N_{T,h,y} * EF_{awms,T}) * PL_y + \sum (N_{T,h,y} * EF_{awms,T}) * (1 - \eta_{new\ stove}) * (1 - PL_y)$			
Where:			
PE _{p,CH4,y}	0.026	Project emissions from manure handling during the year <i>y</i> in tCO ₂ /year/hh	
GWP _{CH4}	28	Global Warming Potential of methane	
N _{T,h}	See section D.2 for the values	Number of livestock category T in premise h	
EF _{awms, T}	See calculations below this table	Emission factor for the defined livestock population category T	
PL _y	10%	Physical leakage of the biodigester (through measurement or application of 10% default)	
η _{new stove}	99.4%	Combustion efficiency of the used type of biogas stove	
In the above equation, EF _{awms, T} is further defined as:			
$EF_{awms,h} = \frac{(VS_T * 365) * (B_{0,T} * 0.67kg/m^3 * MCF_{x,k} * MS_{T,x,k})}{1000}$			
Source 3: Accounting for project emissions due to bio-slurry			
The following equation is applied:			
PE _{p1 bio-slurry} = (total VS in biodigesters * 365) * Bo _{,dig} * ΣDMS * MCF *(D _{CH4} /1000) * GWP _{CH4}			
$PE = PE_{p1,CO2,y} + PE_{p1,CH4,y} + PE_{p1,bio-slurry}$			
PE emissions are calculated as 1.180 tCO₂e/yr/hh			
The following sources of information have been used in this context:			
• /MR/			

	• /PoA-DD/ • /VPA-DD/ • /SDG_ER/ • /TA/	
Findings	☒	The baseline situation found compliant with the approved VPA-DD No errors, omissions, misstatements or incomplete information has been identified.
	☐	The verification team has identified several mistakes in the project situation.
	☐	In this context the following CARs, CLs, FARs have been raised:
		-
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	The calculations of project GHG emissions and SDG outcome are in accordance with the applied methodology and registered VPA-DD and TA.	

D.5.3 Calculation of leakage

Means of verification	VT crosschecked the information reported in section E.3 of the MR for the leakage emissions in project scenario, against approved monitoring period IV MR and confirmed that leakage emmissions are very low and the value applied as 0 is correct and appropriate. VT also interviewed CME via online meeting and made phone calls to biodigester end-users who confirmed the same results. The following sources of information have been used in this context: • /MR/ • /ER/ • /VPA-DD/ • /TPDDTEC/ • /TA/	
Findings	☒	Potential for any leakage emissions are considered to be too low (LE = 0).
	☐	Mistakes are identified
	☐	In this context the following CARs, CLs, FARs have been raised:
		-
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	Potential for leakage is considered very low, according to the registered VPA-DD, TA, and applied meth.	

D.5.4 Calculation of net benefits or direct calculation for each SDG Impact

Means of verification	The VT crossechecked data and infomation in section E.4 of MR against information and data in project database, monitoring survey results, usage rate survey, SDG Impact Quantification and ER calculation spreadsheet, registered VPA DD, approved TA, applied methodology, GS Rule Update requirements, and interviews with CME, VPA implementer and biodigester end-users. VT confirmed that section E.4 of MR is correctly filled as per MR template guide version 1.1 without misstatements and deviations, as follows:				
	SDG	SDG Impact	Baseline Estimate	Project Estimate	Net Benefit
	2	GS-3 Soil condition (Percentage of biogas users who use slurry as a fertilizer)	0	99.0	99.0

	3	GS-1 Air Quality (Perceived improvement in health by the user (incidence of eye problems and respiratory illness)	0	98.9	98.9
	5	Achieve gender equality and empower all women and girls	0	94.2	94.2
		Usage of saved time			
		Income generating including farming	0	56%	Income generating including farming
		Farming	0	0%	Farming
		Recreation	0	8%	Recreation
		Helping my husband	0	14%	Helping my husband
		Other	0	19%	Other
	7	GS-08 Access to affordable and clean energy services (Number)	0	4,445	4,445
		GS-12 Technology transfer and technological self-reliance (Number of masons and biogas enterprise staff attending training programmes)	0	80	80
	8	GS-10 Technology transfer and technological self-reliance (man-days)	0	75,946	75,946
	13	Verified emission reductions	18,239	3,714	14,525
	The following sources of information have been used in this context: • /MR/ • /ER/ • /VPA-DD/ • /PoA-DD/ • /RU/ • /TA/ • /MRTG/ • /RU/				
Findings	☒	The determination of the SDG outcomes are compliant with the Approved VPA-DD The calculations of emissions reductions have been carried out in accordance with the formulae and methods described in the registered monitoring plan and the applied methodology. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information have been identified.			
	☐	During the verification, issues with impact on the ER calculation have been identified.			
	☐	The following are identified in the course of this verification: -			
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.			
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.			
	The SDG benefits and emissions reductions are considered correct.				

D.5.5 Comparison of actual SDG Impacts with estimates in approved PDD

Means of verification	The verification team reviewed registered VPA-DD and approved Transtion Annex and confirmed that section E.5 of the MR has been correctly filled as per MR template guide version 1.1, to include a comparison of actual values of the monitoring period with the estimations in the registered VPA-DD and TAfor the respective SDG indicators as follows:			
	SDG	SDG Impact	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values achieved during this monitoring period

	2	GS-3 Soil condition (Percentage of biogas users who use slurry as a fertilizer)	Not estimated	99.0	
	3	GS-1 Air Quality (Perceived improvement in health by the user (incidence of eye problems and respiratory illness)	Not estimated	98.9%	
	5	Achieve gender equality and empower all women and girls	Not estimated	94.2%	
	7	GS-08 Access to affordable and clean energy services (Number)	5,030	4,445	
		GS-12 Technology transfer and technological self-reliance (Number of masons and biogas enterprise staff attending training programmes)	Not estimated	80	
	8	GS-10 Technology transfer and technological self-reliance (man-days)	Not estimated	75,947	
	13	Verified emission reductions (tCO2)	26,310	14,525	
	The following sources of information have been used in this context: /MR/ /VPA-DD/ /SDG_ER/ /TA/				
	Findings	☒	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.		
		☐	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.		
☐		Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.			
☐		In this context the following CARs, CLs, FARs have been raised:			
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.			
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.			
	VT confirmed that the estimated is proportionally higher than the ex-post determined value. Hence, no further action is deemed required.				

D.5.6.1 Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

Means of verification	Section E.5.1 describes the estimated ex-ante calculation in accordance with the approved VPA-DD and Transition Annex. The following sources of information have been used in this context: • /MR/ • /SDG_ER/ • /VPA-DD/ • /TA/			
Findings	☒	The ex-ante estimated value in accordance to registered VPA-DD		
	☐	In this context the following CARs, CLs, FARs have been raised:		
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		

	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		The approach to the calculation ex-ante SDG contributions was appropriately conducted, and the ex-ante estimated value is in line with the registered VPA-DD and TA.

D.5.7 Remarks on increase in achieved SDG 13 Impacts from estimated value in approved PDD

Means of verification		Section E.5 of MR describes the increase in ex-post ERs for the monitoring period as compared to ex-ante ERs in the approved VPA-DD and Transition Annex. VT checked the approved VPA-DD section B.4.3 for ex-ante ER value and confirmed that the value is correctly applied in ER spreadsheet. VT confirmed that ex-ante ERs is 26,310 tCO₂e, higher than the ex-post ER value for this monitoring period reported as 14,525 tCO₂e.
Findings	☒	No further justification or explanation is deemed required as actual emissions of this MP do not exceed the ex-ante calculated emission reductions
	☐	A related justification in the MR for the higher ex-post as compared to ex-ante.
	☐	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		VT confirmed htat ex-ante estimated emission reductions are higher than the ex-post monitored value and not justification is required.

D.6. Safeguards Reporting

Means of validation	☒	VT made phone calls with end suers and interviewd PP via online meeting and both PP and biodigester end-users confirmed that there are not safeguards that require monitoring during this monitoring period. VT also reviewed section D of the approved and confirmed that information reported in section F of MR is correct and consistent both with the interview results and information in the approved VPA-DD and TA. The following sources of information have been used in this context: • /MR/ • /PoADD/ • /VPA-DD/ • /TA/ • /IM/
Findings	☒	Information is sufficient and appropriate.
	☐	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	☒	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	☐	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, refer to Appendix 4.
		The verification team concludes that the section is filled appropriately and no safeguards identified which require monitoing.

D.7. Stakeholder Inputs and Legal Disputes

Means of validation	☒	VT interviewed PP in an online meeting and interviewed biodigester users remotely via phone calls to crosscheck results against the approved monitoring plan and approved Continuous Input and Grievance Mechanism (CIGM) in the approved VPA-DD and TA. During the interviews, PP confirmed that all disputes, inputs, comments, and grievances are received, documented and acted upon appropriately on a case-by-case approach by clarifying those wich have been fully addressed and those which require follow up action.
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		End users confirmed that their grievances and comments are addressed appropriately through contact means and mechanism provided by VPA implementer and CME, no adverse comments were received. VT thus crosschecked the MPV VPA006 grievances sheet PVT spreadsheet information against the PP- and end-users' responses and confirmed that the information is correct and consistent and thus verified. VT further confirms that this information is correctly reported in section G of MR without misstatements and deviation and fully meeting MR template guide version 1.1 requirements, as follows: Section G.1 <table><tr><th>Grievances</th><th>Number</th></tr><tr><td>Closed</td><td>268</td></tr><tr><td>Dropped</td><td>7</td></tr><tr><td>Escalated</td><td>19</td></tr><tr><td>On Hold</td><td>26</td></tr><tr><td>Ongoing</td><td>133</td></tr><tr><td>Grand Total</td><td>453</td></tr></table> Section G.2: There are no mitigations were proposed for this monitoring period. Section G.3: There are no legal contest or dispute that has arisen with the project during the monitoring period. The following sources of information have been used in this context: • /MR/ • /TA/ • /VPA-DD/ • /GT/ • /IM/ • /MRTG/	Grievances	Number	Closed	268	Dropped	7	Escalated	19	On Hold	26	Ongoing	133	Grand Total	453
Grievances	Number															
Closed	268															
Dropped	7															
Escalated	19															
On Hold	26															
Ongoing	133															
Grand Total	453															
Findings	☐	Information is sufficient and appropriate.														
	☒	In this context the following CARs, CLs, FARs have been raised: CL06														
Conclusion	☐	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.														
	☒	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, refer to Appendix 4.														
		The verification team concludes the section is filled with appropriate information as per MR template guide version 1.1, no mitigations were proposed for this monitoring period, and no legal contest or dispute that has arisen with the project during the monitoring period. Upon addressing the raised finding, it can be concluded that the information is now sufficient and appropriate.														

SECTION E. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision-making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore, reporting improvements might have been achieved.

After the successful technical review, an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD CERT GmbH.

After this step the submission for requesting for issuance is conducted.

SECTION F. Verification opinion

ABPL has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5th periodic verification of CPI of VPA006 “African Biogas Programme (ABC) – Kenya – VPA006” (GS 5801) with regard to the relevant requirements for GS4GG voluntary project activities.

This verification covers the period from 01/05/2022 – 31/03/2023 (including both days).

As a result of this verification, the verifier confirms that:

- all operations of the VPA are implemented and installed as planned and described in the validated VPA-DD.
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., “*Technologies and Practices to Displace Decentralized Thermal Energy Consumption*” Version 1.0.”
- the monitoring system is in place, functional and have generated GHG emission reductions.

As the result of this periodic verification, the verifier confirms that the GHG emission reductions have been calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above-mentioned reporting period as follows:

Emission reductions: **14,525 tCO₂e**

SECTION G. Certification statement

As a duly accredited VVB, TÜV NORD CERT confirms that the VPA

“African Biogas Programme (ABC) – Kenya – VPA006”

registered under

GS ID.: 5801

has achieved emission reductions in accordance with all applicable requirements for registered GS project activities during the current monitoring period

MP-No.: 5th (CPI)

from: 01/05/2022

to: 31/03/2023

(including both days) as follows:

Emission reductions: **14,525 tCO₂e**

Salem (NH/USA), 10/07/2024



Kunal Rami
Verification Team Leader

Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CL	Clarification
VPA	Voluntary Project Activity
VPA-DD	Voluntary Project Activity Design Document
CME	Coordinating Managing Entity
CO ₂ eq	Carbon dioxide equivalent
CPO	Construction Partner Organisation
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
IM	Interview Memo
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
VPA-DD	Voluntary Project Activity Design Document
PRC	Post Registration Changes
PS	CDM project standard for project activities
QA/QC	Quality Assurance / Quality Control
TA	Transition Annex
UNFCCC	United Nations Framework Convention on Climate Change
VVS	(Gold Standard) Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers



Statement of Competence

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Mr. Rami Kunal

SCHEME	STATUS					VALID UNTIL
	Assessor	Lead Assessor	Senior Assessor	Host Country Expert	Technical Reviewer	
	Validation, Verification					
ISO 14064-2			X			2026-03-26
VCS			X			2026-03-26
UER			X			2026-03-26
Gold Standard			X			2026-03-26
CDM			X			2026-03-26

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater
13.2	Manure
2.1	Energy distribution
3.1	Energy demand
6.1	Construction
7.1	Transport
1.1	Thermal energy generation

224 - Rev. 14, Date: 2024-02-28

Valid without signature

This document has been approved according to CERT-401-VA-007. Details are available from the QM-Department.

S01-VA060-F20

Rev. 04/02.23

Page 1 from 1



Statement of Competence

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Mr. Wesonga Bonface

SCHEME	STATUS					VALID UNTIL
	Assessor	Lead Assessor	Senior Assessor	Host Country Expert	Technical Reviewer	
	Validation, Verification					
ISO 14064-2				Kenya, Tanzania, Uganda,		2026.09.28
VCS				Rwanda, Burundi,		2026.09.28
UER				South Sudan,		2026.09.28
Gold Standard				Democratic Republic of Congo (DRC)		2026.09.28
CDM						2026.09.28

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA

424 - Rev. 00, Date: 2023-11-06

Valid without signature

This document has been approved according to CERT-401-VA-007. Details are available from the QM-Department.

S01-VA060-F20

Rev. 04/02.23

Page 1 from 1

Statement of Competence

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Mr. Winter Stefan

SCHEME	STATUS					VALID UNTIL
	Assessor	Lead Assessor	Senior Assessor	Host Country Expert	Technical Reviewer	
	Validation, Verification					
ISO 14064-2			X		X	2026.07.27
VCS			X		X	2026.07.27
UER			X		X	2026.07.27
Gold Standard			X		X	2026.07.27
CDM			X		X	2026.07.27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
10.1	Fugitive emissions from oil and gas
13.1	Solid waste and wastewater
13.2	Manure
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitric and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production

163 - Rev. 09, Date: 2024-04-24

This document has been approved according to CERT-401-VA-007. Details are available from the QM-Department.

Statement of Competence

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Ms. Vargas Madrid Sina

SCHEME	STATUS					VALID UNTIL
	Assessor	Lead Assessor	Senior Assessor	Host Country Expert	Technical Reviewer	
	Validation, Verification					
ISO 14064-2				Chile		2027-02-26
VCS						2027-02-26
UER						2027-02-26
Gold Standard						2027-02-26
CDM						2027-02-26

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA

435 - Rev. 00, Date: 2024-02-26

Valid without signature

This document has been approved according to CERT-401-VA-007. Details are available from the QM-Department.

Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1.	GS	/TPDDTEC/	Technologies and Practices to Displace Decentralized Thermal Energy Consumption, version 1.0		GS4GG
2.	GS	/GS4GG/	Gold Standard for the Global Goals Principles & Requirements version 1.2	https://globalgoals.goldstandard.org/101-par-principles-requirements/	GS4GG
3	CME/VPA Representative	/MPIV-MR/	Verified VPA06 MPIV MR '10Jan23_KBP_VPA06_MR_MPIV_v1.5'		CME/VPA Representative
4	GS	/UR/	Requirements and guidelines: usage rate monitoring v2.0		GS
5	VVB	/FVR/	Approved VPA06 MPIV Final Verification Report 'CC IPL 1359 VPA06 FVR clean'		CME/VPA Representative
6	CDM	/SSSI/	CDM Standard: Sampling and surveys for CDM project activities and programmes of activities	https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf	CDM
7	GS	/VVS/	GS Validation and Verification Standard version 1.0	https://globalgoals.goldstandard.org/113-par-validation-and-verification-standard/	GS
8	UNFCCC	/GT/	Glossary "CDM terms" (version 10.0)	https://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf	UNFCCC
9	IPCC	/IPCC/	2006 IPCC Guidelines for National Greenhouse Gas Inventories, volume 2	https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf	IPCC
10	VVB	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		VVB
11	CME	/PoA-DD/	Registered PoA Design Document for GS PoA		CME
12	CME	/VPA-DD/	Registered VPA-Design Document for VPA001: GS5801 African Biogas Carbon Programme (ABC) Kenya – VPA006 version 2.3		CME/GS
13	CME/VPA Representative	/MR/	Monitoring Report: - African Biogas Programme (ABC) – Kenya – VPA006 version 1.0 - African Biogas Programme (ABC) – Kenya – VPA006 version 1.1 - African Biogas Programme (ABC) – Kenya – VPA006 version 1.2		CME/VPA Representative

			- African Biogas Programme (ABC) – Kenya – VPA006 vesion 1.3 - African Biogas Programme (ABC) – Kenya – VPA006 vesion 1.4 - African Biogas Programme (ABC) – Kenya – VPA006 vesion 1.5 - African Biogas Programme (ABC) – Kenya – VPA006 vesion 1.6		
14	CME/VPA Representative	/SDG_ER/	VPA SDG_ER spreadsheet 29aug23 VPA06_MPV survey_SDG_ER v1.0 23Nov23 VPA06_MPV survey_SDG_ER v1.1 06MAR24VPA06_MPV survey_SDG_ER v1.3 06MAR24VPA06_MPV survey_SDG_ER v1.4		VPA Representative
15	GS	/MRTG/	GS MR template guide version 1: 'TGuide-PerfCert_V1.1-Monitoring-Report'		GS
16	CME Respresentative	/TA/	GS4GG Transition Annex: 'GS2747_12July19 ABC PoA- VPA transition Annex v1.6 (clean)'	file:///C:/Users/Mapesa/Downloads/GS2747_12July19%20ABC%20PoA-%20VPA%20transition%20Annex%20v1.6%20(clean).pdf	GS Registry
17	GS	/IR/	GS approved performance Review dated 04/11/2022: 'GS5801_GS4GG Performance Review_Round 1_EB 30012023_EB'		CME/VPA Representative
18	GS	/RU/	Rule Update: Applicability of Global Warming Potential for Gold Standard for the Global Goals Projects dated 03/06/2021.	https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf	GS
19	CME/VPA Representative	/TL/	29Aug23 VPA01 and VPA06 training list since 2016 - Expanded ABPL KPT SURVEY 2023 Training Presentation.pptx - ABPL CM BUS AND SDG SURVEY 2022 Inception report JUNE 2023 FINAL		CME/VPA Representative
20	CME/VPA Representative		'survey B 2023 QC check VPA01 VPA06'		CME/VPA Representative
21	CME/VPA Representative		Grrievances: 'MPV VPA006 Grievances' '2023 VPA01 and VPA03 RMT master sheet'		CME/VPA Representative
22	CME/VPA Representative		Survey forms		CME/VPA Representative
Websites					
22		/gs/	http://www.goldstandard.org/		Other
23		/ipcc/	www.ipcc-nggip.iges.or.jp		Other
24		/gpl/	https://www.graphpad.com/quickcalcs/randomselect1/		Other

25		/gel/	Google earth		Other
26		/ged/	https://www.geodatos.net/en/coordinates/kenya/nairobi		Other

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

Table 1: Clarification requests, corrective action requests and forward action requests raised

Verification Topics	No. of CAR	No. of CL	No. of FAR
A: Description of project activity A.1. General description of project A.2. Location of project A.3. Reference of applied methodology A.4. Crediting period of project	0	0	0
B: Project Implementation B.1: Description of implemented project B.1.1. Forward Action Requests B.2: Post-Design changes B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline B.2.2. Corrections B.2.3. Changes to start date of crediting period B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline B.2.5. Changes to project design of approved project	0	1	1
C: Description of monitoring system applied by the project (a) project survey (PS) of end-user characteristics and SDG impacts (b) Water Consumption Field Test (WCFT) (c) Water Quality Testing (d) Usage Survey (e) Leakage Assessment	0	0	0
D: Data and parameters D.1. Data and parameters fixed ex ante or at renewal of crediting period D.2. Data and parameters monitored D.3. Comparison of monitored parameters with last monitoring period D.4. Implementation of sampling plan	0	1 1	0

Verification Topics	No. of CAR	No. of CL	No. of FAR
E: Calculation of SDG outcomes E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact E.2. Calculation of project value or estimation of project situation of each SDG impact E.3. Calculation of leakage E.4. Calculation of net benefits or direct calculation for each SDG Impact E.5. Comparison of actual SDG Impacts with estimates in approved PDD E.5.1.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD	1	2	0
F: Safeguards Reporting	0	0	0
G. Stakeholder Inputs and Legal Disputes G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses / mitigations G.2. Report on any stakeholder mitigations that were agreed to be monitored G.3. Provide details of any legal contest that has arisen with the project during the monitoring period	0	0 1	0
FAR from previous verification	0	0	1
FAR from this verification	0	0	0
SUM	1	6	1

Table 2. Remaining FARs from previous verification

FAR ID	01	Section No.	B.1.1 & G.1	Date:	17/10/2022
Description of FAR					
The following FAR was raised by the verifying VVB during MPIV verification: - 1. The status of 1 ongoing and 31 plants which are removed from the database from Pre MPIII grievances as mentioned in section B.1.1 of the MR should be followed up in next MP. 2. The status of 10 on going, 1 escalated and 16 plants which are excluded from the database from MPIII grievances as mentioned in the section B.1.1 of the MR should be followed up in the next MP 3. The status of 3 escalated, 1 on hold and 9 ongoing grievances from this MP as mentioned in the section G.1 of the MR should be followed up in the next MP.					
CME response (1st round)				Date:	29/11/2023
The outcome is now included in section B.1.1. The database was also updated based on the latest findings and a number of plants were removed. The SDG values in the MR are updated as a consequence.					
Documentation provided by project participant (1st round)					
☒	Changes in MR	Section(s):B.1.1	☒		
☐	Changes in XLS	Worksheet(s):	☐		
☐	Other:				
VVB assessment (1st round)				Date:	21/01/2024
VT checked MPIV FAR1 grievance follow up outcome spreadsheet and crosschecked its data against MPVI SDG_ER spreadsheet and confirms that ER are claimed for case(s) only included and operational. 1. 2 cases are closed (1 included and 1 excluded from MPVI database), 22 cases are dropped, 7 cases in progress and 1 escalated. 2. 9 cases are dropped, 7 are closed, 3 escalated, 4 ongoing and 4 on hold CME has sufficiently addressed 1 and 2. 3. Initially there were 13 cases to be addressed. However, in the MR section B.1.1, a total of 21 cases are reported which is at odd with the total cases in the FAR1 grievance follow up outcome spreadsheet, recorded as 18 cases. A clarification is requested.					
CME response (2nd round)				Date:	DD/MM/YYYY

A copy past error. The original FAR mentioned 21cases which is consistent with the FAR sheet

Table 1. FARs from this verification

FAR ID	01	Section no.	B.1.1 & G.1	Date: 17/10/2022
Description of FAR				
1. The status of 1 on going and 31 plants which are removed from the database from Pre MPIII grievances as mentioned in the section B.1.1 of the MR should be followed up in next MP.				
2. The status of 10 on going, 1 escalated and 16 plants which are excluded from the database from MPIII grievances as mentioned in the section B.1.1 of the MR should be followed up in the next MP				
3. The status of 3 escalated, 4 on hold and 14 ongoing grievances from this MP as mentioned in the section G.1 of the MR should be followed up in the next MP. = 21				
PP response				Date:
Documentation provided by the CME				
DOE assessment				Date:

And

P29								
=SUM(P25:P28)								
	A	B	O	P	Q	R	S	T
3	KE-KER-1705-18150	04/05/2017	Closed	Included				
4	Kenya Field Workers	10/01/2019	Closed	Excluded				
5	Kenya Field Workers	10/06/2019	Closed	Excluded				
6	KE-KIS-2003-28868	12/03/2020	Closed	excluded				
7	KE-KER-1309-08520	20/09/2013	Closed	excluded, this is a VPA01 plant				
8	KE-BOM-1508-13848	01/08/2015	Closed	excluded, this is a VPA01 plant				
9	KE-UAS-1303-07693	26/03/2013	Closed	excluded, this is a VPA01 plant				
10	KE-THA-1304-09668	04/04/2013	Closed	excluded, this is a VPA01 plant				
11	KE-KIA-1402-07103	15/02/2014	Closed	excluded, this is a VPA01 plant				
12	KE-UAS-1402-11966	01/02/2014	Closed	excluded, this is a VPA01 plant				
13	KE-KIA-1308-10400	16/08/2013	Closed	excluded, this is a VPA01 plant				
14	KE-KWA-1602-14926	21/02/2016	Dropped	Excluded				
15	KE-MAC-1901-25230	03/01/2019	Dropped	Excluded				
16	KE-KIA-2012-25095	30/12/2020	Dropped	Excluded				
17	KE-KAJ-1908-26704	08/08/2019	Dropped	excluded				
18	KE-KIA-1209-3453	29/09/2012	Dropped	excluded, this is a VPA01 plant				
19	KE-UAS-1405-24281	10/05/2014	Escalated	Excluded				
20	KE-KAK-1312-09313	23/12/2013	Escalated	Excluded				
21	KE-TAI-1412-13806	01/12/2014	On hold	Excluded				
22	KE-KAJ-2006-28580	23/06/2020	On hold	Excluded				
23								
24								
25			closed					12
26			dropped					5
27			escalated					2
28			on hold					2
29			sum					21
30								
31								
32								

A new version of the FAR outcome sheet is shared with the correct calculation of 21 cases.

Documentation provided by project participant (2 nd round)			
☒	Changes in MR	Section(s):B.1.1, G.1	☒
☐	Changes in XLS	Worksheet(s):	☐
☒	Other: MPIV FAR1 grievances follow up outcome for MPV VPA06 _corrected		
VVB assessment (2 nd round)			Date: 01/03/2024
FAR01 #3 in the approved FVeR version 05 dated 30/01/2023 in Table 1 states, “The status of 3 escalated, 1 on hold and 9 ongoing grievances from this MP as mentioned in the section G.1 of the MR should be followed up in the next MP.”			
Please clarify how this is a copy paste error. Or update the FAR outcome sheet and MR accordingly.			
CME response (3 rd round)			Date: 06/03/2024
This is because of grievances were at the time not recorded VPA agnostic. The total grievances is 21 of which 8 are VPA01 as indicted in the previous response. 21-8= 13 that belong to VPA06. 13 is the sum of 3 escalated, 1 on hold and 9 ongoing grievances.			
The status of those grievances are:			
VPA06 only			
Current status 13 grievances (3 escalated, 1 on hold and 9 ongoing grievances)	Status	of those included	of those excluded
closed	5	2	3
dropped	4	0	4
escalated	2	0	2
on hold	2	0	2
sum	13	2	11
Thus, out of the 5 that are now closed, 3 are excluded and 2 included Etc,. See MR v1.3			
Documentation provided by project participant (1 st round)			
☒	Changes in MR	Section(s):B.1.1	☒ 1.3
☐	Changes in XLS	Worksheet(s):	☐
☐	Other:		
VVB assessment (3 rd round)			Date: 06/03/2024
Sufficiently clarified and no further action is required			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

Table 3. CLs from this verification

CL ID	01	Section no.	B.1.1	Date:	22/09/2023
Description of CL					
MR version 1.0, Section B.1.1:					
A FAR was raised by the VVB during the last verification (MPIV). The PP is required to include in this section and explain how it has been addressed, in line with the requirements of the GS MR template v1.1					
Project participant response (1 st round)					Date: 24/11/2023
The outcome is now included in section B1.1. The database was also updated based on the latest findings and a number of plants were removed. The SDG values in the MR are updated as a consequence.					
Documentation provided by project participant (1 st round)					
☒	Changes in the MR	Section(s): B.1.1	New version No.: 1.0		
☐	Changes in XLS	Worksheet(s):	New version No.:		
☐	Other:				
VVB assessment (1 st round)					Date: 22/01/2024

The FAR has been included in section B.1.1 of the MR. However, a clarification of how FAR 1.3 has been addressed is requested.

Project participant response (2nd round)

Date: 20/02/2024

This is clearly described in the table: 12 closed of which 2 are re-included in the database as functionality is restored and 10 excluded (non-functional), 5 dropped and excluded, 2 escalated for mayor repair and excluded from the database and 2 on hold and excluded

It is the narrative of this:

O	P	Q	R	S	T
Status end of Mil	Plant include/excluded				
Closed	Included				
Closed	Included				
Closed	Excluded				
Closed	Excluded				
Closed	excluded				
Closed	excluded, this is a VPA01 plant				
Closed	excluded, this is a VPA01 plant				
Closed	excluded, this is a VPA01 plant				
Closed	excluded, this is a VPA01 plant				
Closed	excluded, this is a VPA01 plant				
Closed	excluded, this is a VPA01 plant				
Dropped	Excluded				
Dropped	Excluded				
Dropped	Excluded				
Dropped	excluded				
Dropped	excluded, this is a VPA01 plant				
Escalated	Excluded				
Escalated	Excluded				
On hold	Excluded				
On hold	Excluded				
closed		12			
dropped		5			
escalated		2			
on hold		2			
sum		21			

Documentation provided by project participant (2nd round)

☒ Changes in the MR

Section(s): B.1.1

New version No.: 1.3

☐ Changes in XLS

Worksheet(s):

New version No.:

☐ Other:

VVB assessment (2nd round)

Date: 01/03/2024

Clarification is requested as per FAR01 #3 of this report.

Project participant response (3rd round)

Date: 06/03/2024

That was because it included VPA01 plants, the copy included those plants and that was the error. It should have been VPA06 only. See FAR ID 01 in this report for the complete response.

Documentation provided by project participant (2nd round)

☒ Changes in the MR

Section(s): B.1.1

New version No.: 1.3

☐ Changes in XLS

Worksheet(s):

New version No.:

☐ Other:

VVB assessment (3rd round)

Date: 06/03/2024

The error is corrected to reflect only the VPA06 grievance values.

Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed
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CL ID	02	Section no.	D.2	Date:	22/09/2023
Description of CL					
MR version 1.0, Section D.2, Parameter Usage of saved time: The value for the parameter for 'Other' is not in line with the survey results presented in the spreadsheet. Corrections are requested throughout the monitoring report					
Project participant response				Date:	24/11/2023
Other is a merged category. However, recognizing that one of the categories merged, social activity, is an important category on its own, it has now been disentangled. Moreover, the impact has been recalculated to reflect spent saved time can be spent on multiple categories. The MR has been updated throughout.					
Documentation provided by project participant					
☒ Changes in the MR		Section(s): various		New version No.:1,1	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					
VVB assessment				Date:	
The parameter values have been correctly updated both in SDG_ER spreadsheet and MR.					
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed				

CL ID	03	Section no.	D.4	Date:	22/09/2023
Description of CL					
MR version 1.0, Section D.4, The sample survey for Survey A is given as 105. However, in the spreadsheet, it is observed as 191 A clarification is required					
Project participant response				Date:	24/11/2023
There is a difference between sampling and the actual number of hh reached. This is explained in footnote 16 in the MR. The survey consultant employed oversampling and for that reason the sample size is larger than we, the PD, instructed to the consultant.					
Documentation provided by project participant					
☐ Changes in the MR		Section(s):		New version No.:	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					
VVB assessment				Date:	21/01/2024
It is confirmed from SDGE_ER database that oversampling was applied to both surveys A and B and sample size has been fully met, as clarified in footnotes 15 and 16 of MR.					
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed				

CL ID	04	Section no.	E.1	Date:	22/09/2023
Description of CL					
MR version 1.0, Section E.1, The value of of the The quantity of fossil fuel consumed in the baseline scenario ($BB_{b,fuel}$) is given as 0.00 tonnes/year. The value of $BB_{b4,fuel}$ and by extension $BB_{b,1,2,3,4}$ is reported as 0.24 tonnes/year/hh from BFT (LPG) Clarification is required					
Project participant response				Date:	
This is now updated to 0.24. Moreover table 9 is deleted and instead included in the calculation example					
Documentation provided by project participant					
☒ Changes in the MR		Section(s): E.1		New version No.:1.1	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					

VVB assessment		Date:	
The value of BB _{b4,fuel} has been updated to 0.24.			
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CL ID	05	Section no.	E.1	Date:	22/09/2023
Description of CL					
MR version 1.0, Section E.1,					
The Baseline emissions from manure handling during the year y was reported as 0.332 tonnes/hh/year. The value for this monitoring period is estimated as 0.394 tonnes/hh/year.					
The project proponent is required to explain the observed increase of 18.67% for the 5th monitoring period					
Project participant response				Date:	24/11/2023
Please refer to section D.3 on the difference in input parameters. As you can see, the average animal population is different and since the emissions are expressed per hh, the emission per hh will be different. This is a normal situation as simply because number of animals held varies over the years.					
Documentation provided by project participant					
☐ Changes in the MR		Section(s): E.1		New version No.: 1.0	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					
VVB assessment				Date:	
The increase in baseline emissions reported in this MP is justified owing to the fact that values of parameter used to calculate these emissions vary due change in average animal population at HHS over time.					
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CL ID	06	Section no.	G.1	Date:	01/11/2023
Description of CL					
MR version 1.0, Section G.1					
From the remote audit interview with farmers, it was found that Japheth Kula Mulewa (KE-KIT-1702-17448) has his plant broken down 2-3 years ago and he contacted KBP but received no response. This has been confirmed in the survey database. However, this plant is not part of the grievance list shared.					
Similarly, Jane Macharia Wangui (KE-NAK-1905-26649) has plant not operational since 3 years ago and is among the monitoring survey participants. However, she is not part of the grievance list. CME shall clarify how their grievances are fully addressed and how they have effectively implemented their approved Continuous Input and Grievance Mechanism.					
Project participant response				Date:	29/11/2023
The CME contacted both farmers, and this is the outcome:					
- Japheth Kula Mulewa (KE-KIT-1702-17448) reached out to the biogas company but never reached out to ABPL despite having the certificate which includes the contact details of ABPL. This is being followed up from ABPL's end. - Jane Macharia Wangui (KE-NAK-1905-26649) did not contact anyone from the biogas company or ABPL despite having the certificate which includes the contact details of ABPL. This is being followed up from ABPL's end.					
The CME has a grievance mechanism in place and the VVB has received the list of grievances and the status of those. The mechanism is operational and has been verified as such in all verifications					
Documentation provided by project participant					
☒ Changes in the MR		Section(s): G.1		New version No.: 2.0	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					
VVB assessment				Date:	
During remote audit closing meeting and follow ups with CME and consultant, VT confirms that an operational Continuous Input and Grievance Mechanism is in place and the grievances are being followed.					
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

Table 4. CARs from this verification

CAR ID	01	Section no.	E.6	Date:	22/09/2023
Description of CAR					
MR version 1.0, Section E.6:					
- The reported value for the parameter GS-08 is not correct and not consistent with the spreadsheet. - The reported ex-ante value for the parameter SDG 13 is not correct.					
Project participant response					Date:
					23/11/2023
1 and 2: the values have been updated and made consistent					
Documentation provided by project participant					
☒ Changes in MR		Section(s):E.6		New version No.:1.1	
☐ Changes in XLS		Worksheet(s):		New version No.:	
☐ Other:					
VVB assessment					Date:
- GS-08 value has been corrected to 5,030 - The ex-ante value has been corrected to 26,310.					
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

Required Supporting Documentation	Date: 28/09/2023
Required Documents	
- VPA01 and VPA06 training list since 2016 - Ownership certificates	
Project participant response (1st round)	Date: 23/11/2023

1. This is now included in the folder evidences as part of the response package. The value is displayed in VPA01 and VPA06 training list since 2016, sheet PVT, cell C21
2. The ownership certificates of the following installations are included as per VVB request in the response package:

No.	HH Unique ID	Name	Village, County
1	KE-NAI-1601-16384	Kariuki Simon	Dagoetti Waithaka, Nairobi County
2	KE-KIA-1512-27727	Muchiri Phrisila Nyambura	Gatei, Kiambu County
3	KE-KIT-1702-17448	Kula Mulewa Japheth	Maungu, Kitui County
4	KE-NYE-2202-30042	Gitare Wanjiku Lucy	Kahurura Village, Nyeri County
5	KE-KAJ-2201-29095	Njau Samwel Richard	Bookland, Kajiado County
6	KE-KIA-2001-28653	Kamau Christopher	Ting'ang'a, Kiambu County
7	KE-UAS-2006-28742	Misoi Ann	Chebarus, Uasin Gishu County
8	KE-TAI-2106-29758	Mwasi Iveta Shigare	Msindunyi, Taita Taveta County
9	KE-BAR-2203-27707	Korir Stanley Kosgei	Chekorongos, Baringo County
10	KE-KIS-2204-29014	Omare Barongo Patrick	Masongo, Kisii County
11	KE-MER-2101-28471	Gakii Kinyuru Faith	Rugumo, Meru County
12	KE-KAJ-2105-29082	Motong'o Elizabeth	Emanyatta, Kajiado County
13	KE-THA-2001-28483	Mbaya Kirika Duncan	Thigaa, Tharaka Nithi County
14	KE-NAK-1905-26649	Wangui Macharia Jane	Aremi, Nakuru County
15	KE-MAK-1904-27533	Kyule Eunice Ngwili	Kiatine, Makueni County
16	KE-KIS-1803-27120	Onyando Odhong Elly	Nyamasaria, Kisumu County
17	KE-KER-1803-26238	Bett Sally C	Korosyot, Kericho County
18	KE-NAN-1701-17054	Tanui Joseph	Irimis, Nandi County
19	KE-BAR-2206-29528	Songol Emmanuel	Kaptigen, Baringo County
20	KE-NYE-2203-30034	Ndiritu Muthoni Monica/Wambugu Moses Ndiritu	Kahurura, Nyeri County
21	KE-NYA-1512-15111	Njihia Mwihaki Margaret	Chuma, Nyandarua County

22	KE-NAK-1701-17563	Ngwinyi Wangui Nelly	Gonjiri, Nakuru County	
3				
Documentation provided by project participant (1 st round)				
☐	Changes in PDD	Section(s):	New version No.:	
☐	Changes in MR	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
VVB assessment (1 st round)			Date: 22/01/2024	
1 and 2 above have been provided and checked by VT. From audit opening meeting, the following document(s) are requested: 3. Originally completed survey forms (from TaroWorks) for HHs called.				
Project participant response (2 nd round)			Date: 19/02/2024	
This has been shared in a separate email and receipt was confirmed by the VVB on 20 FEB 2024				
Documentation provided by project participant (2 nd round)				
☐	Changes in PDD	Section(s):	New version No.:	
☐	Changes in MR	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
VVB assessment (2 nd round)			Date: 01/03/2024	
3. Requested documents were shared and checked by assessment team.				
Conclusion <i>Tick the appropriate checkbox</i>		☒ Additional action should be taken (finding remains open) ☒ The finding is closed		

Table 4. FARs from this verification

FAR ID	-	Section No.		Date: DD/MM/YYYY
Description of FAR				
No				
Project participant response			Date: DD/MM/YYYY	
-				
Documentation provided by project participant				
☐	Changes in the PDD	Section(s):	New version No.:	
☐	Changes in MR	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment			Date: DD/MM/YYYY	
-				
Conclusion <i>Tick the appropriate checkbox</i>		☐ To be checked during the next periodic verification		

Appendix 5. Monitored Parameters

Table A-5: Periodic Verification Checklist – Monitored Parameters

1. GS-3 Soil condition		Percentage of biogas users who use slurry as a fertilizer		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).	/MR/ /SDG_ER/ /VPA-DD/ /TA/	Description: Percentage of biogas users who use slurry as a fertilizer. The value applied is 99%. It is obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis A, C55 and is determined by interviewing biodigester users during monitoring survey conducted annually.	OK	OK

Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.	/IM/	The value is used to quantify SDG 2 impact (2.4.1: Proportion of agricultural area under productive and sustainable agriculture). <i>Verifier’s action:</i> VT interviewed biodigesters users during remote audit and checked for correct calculation of results in the SDG ER spreadsheet, to determine whether the value applied in SDG ER is appropriate. All farmers with operational biodigersters confirmed that they apply the bio-slurry as fertilizer. VT confirms that the value indicated in SDG ER spreadsheet is correctly calculated and conservative and thus appropriate. <i>Conclusion:</i> The parameter has been monitered in line with the approved monitoring plan. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐			
☐	In this context the following findings have been raised:									
☐										
☐										
2. GS-1 Air Quality		Description: Perceived improvement in health by the user (incidence of eye problems and respiratory illness)								
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.	/MR/ /SDG_ER/ /VPA-DD/ /TA/ /IM/	<i>Description:</i> The parameter is described as perceived improvement in health by the user (incidence of eye problems and respiratory illness). The value applied is 98.9%. It is obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis A, D48. The value is determined by interviewing biodigester users during monitoring survey conducted annually. The value quantifies SDG 3 impact (3.9.1: Mortality rate attributed to household and ambient air pollution). <i>Verifier’s action:</i> VT interviewed biodigesters users during remote audit and checked for correct calculation of results in the SDG ER spreadsheet, to determine whether the value applied in SDG ER is appropriate. All farmers with operational biodigersters, who used firewood and charcoal as baseline fuels, confirmed that they have experienced improved health (reduced incidences of eye itching and respiratory illnesses). VT confirms that the value indicated in SDG ER spreadsheet is correctly calculated and conservative and thus appropriate. <i>Conclusion:</i> The monitoring of the indicator is according to the approved monitoring plan in the registerd VPA-DD and approved Transition Annex. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐		OK	OK
☐	In this context the following findings have been raised:									
☐										
☐										

3. Time savings		Description: Percentage of women that report time-savings attributed to the installation of a biodigester																	
Measurement / Determination method (VVS, §§ 363-367) <i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i>	/MR/ /TA/ /SDG_ER/ /VPA-DD/ /IM/	Description: Percentage of women that report time-savings attributed to the installation of a biodigester. Values applied are as follows: <table><tr><td>Yes, more time available than before having biogas</td><td>94.2%</td></tr><tr><td>No, just the same as before (between before and after having Biogas)</td><td>5.8%</td></tr><tr><td>Yes, less time available than before having biogas</td><td>0.0%</td></tr></table> Parameter values are obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis A, D58:D60 and are determined through interviewing biodigester users during monitoring survey conducted annually. The values quantify SDG 5 impact. Verifier’s action: VT interviewed biodigesters users during remote audit and checked for correct calculation of results in the SDG ER spreadsheet, to determine whether the value applied in SDG ER is appropriate. Farmers with operational biodigersters confirmed that they have saved time as a result of using biogas. VT also confirmed that the value indicated in SDG ER spreadsheet is correctly calculated and thus appropriate. Conclusion: The parameter has been monitored according to the approved monitoring plan in registered VPA-DD and Transition Annex. <table><tr><td>☐</td><td colspan="2">In this context the following findings have been raised:</td></tr><tr><td>☐</td><td colspan="2"></td></tr><tr><td>☐</td><td colspan="2"></td></tr></table>	Yes, more time available than before having biogas	94.2%	No, just the same as before (between before and after having Biogas)	5.8%	Yes, less time available than before having biogas	0.0%	☐	In this context the following findings have been raised:		☐			☐			OK	OK
Yes, more time available than before having biogas	94.2%																		
No, just the same as before (between before and after having Biogas)	5.8%																		
Yes, less time available than before having biogas	0.0%																		
☐	In this context the following findings have been raised:																		
☐																			
☐																			
4. Usage of saved time		Description: Usage of saved time																	
Measurement / Determination method (VVS, §§ 363-367) <i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i>	/MR/ /VPA-DD/ /SDG_ER/ /TA/ /IM/	Description: The parameter is described as usage of saved time. Values applied are as follows: <table><tr><td>Income generating including farming</td><td>73%</td></tr><tr><td>Farming</td><td>0%</td></tr><tr><td>Recreation</td><td>11%</td></tr><tr><td>Helping my husband</td><td>19%</td></tr><tr><td>Social activity (voluntary work, etc)</td><td>8%</td></tr><tr><td>Other</td><td>17%</td></tr></table> The values are obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis A and they quantify SDG 5 impact and determined through interviewing biodigester users during monitoring survey conducted annually. The values quantify SDG 5 impact. Verifier’s action:	Income generating including farming	73%	Farming	0%	Recreation	11%	Helping my husband	19%	Social activity (voluntary work, etc)	8%	Other	17%	GL02	OK			
Income generating including farming	73%																		
Farming	0%																		
Recreation	11%																		
Helping my husband	19%																		
Social activity (voluntary work, etc)	8%																		
Other	17%																		

		VT interviewed biodigesters users during remote audit and checked for correct calculation of results in the SDG ER spreadsheet, to determine whether the values applied in SDG ER are appropriate. Interviewed female members of the households with operational biodigersters confirmed that they use the saved time to majorly do income-generating farming. VT confirmed that the values indicated in SDG ER spreadsheet are correctly calculated and match results from remote audit and thus appropriate. <i>Conclusion:</i> The monitoring of the indicator is according to the VPA-DD, TA and applied methodology without any deviations. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐			
☐	In this context the following findings have been raised:									
☐										
☐										
5. GS-08 Access to affordable and clean energy services		Description: Number of biogas units installed								
Measurement / Determination method (VVS, §§ 363-367) <i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i>	/MR/ /SDG_ER/ /VPA-DD/ /TA/ /IM/	<i>Description:</i> Number of biogas units installed. The value applied is 4,445. It is obtained from VPA06 MPV_survey_SDG_ER, sheet SDG13 and is determined by calculation using project database data. The parameter value is monitored annually, and it quantifies SDG 7 impact (7.1.2: Proportion of population with primary reliance on clean fuels and technology). <i>Verifier’s action:</i> VT interviewed farmers and confirmed that all interviewed farmers are part of the project database and have biodigesters. VT further checked onwership certificates to confirm this. VT can confirm that the value applied was correctly calculated using data from the project database and thus appropriate. <i>Conclusion:</i> The parameter has been monitored as per approved monitoring plan and registered VPA-DD and approved TA. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐		OK	OK
☐	In this context the following findings have been raised:									
☐										
☐										
6. GS-12 Technology transfer and technological self-reliance		Description: Refers to changes compared to the baseline in activities that build usable and sustainable know-how in a region/country for a technology, where know-how was previously lacking. The number of constructors trained will be monitored.								
Measurement / Determination method (VVS, §§ 363-367)	/MR/ /SDG_ER/	<i>Description:</i> Refers to changes compared to the baseline in activities that build usable and sustainable know-how in a region/country for a	OK	OK						

Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.	/TA/ /NPA-DD/ /IM/ /TL/	technology, where know-how was previously lacking. The number of constructors trained will be monitored. The value of the parameter applied is 80. It is obtained from VPA01 and VPA06 training list since 2016 sheet PVT and is determined from attendance records kept at the vocational training programmes, including general training extended to entities outside of the programme, conducted annually. The value quantifies SDG 7 impact (7.1.2: Proportion of population with primary reliance on clean fuels and technology). Verifier’s action: During remote audit opening meeting, CME and VPA implementer confirm that all staff and masons were trained. VT further checked signed list of attendance records of the training and confirmed that the value applied is correct and appropriate. Conclusion: This parameter has been monitored in line with approved monitoring plan, registered VPA-DD and approved TA. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐			
☐	In this context the following findings have been raised:									
☐										
☐										
7. GS-10 Quantitative employment and income generation		Description: Cumulative number of mason working days								
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /TA /SDG_ER/ /NPA-DD/ /TPDDTEC/ /IM/	Description: Cumulative number of mason working days. The value applied is 75,946. It is obtained from VPA06 MPV_survey_SDG_ER sheet SDG8 and is determined by calculation by multiplying the number of digesters constructed and the default number of days required for the construction (0.25 days for non-masonry plants and 6,7,8,10 and 12 mason working days, respectively, for 4,6,8,10 and 12 m³ masonry plants. The same number of days are spent by casual laborers). Monitoring of this value is done annually, and the value quantifies SDG 8 impact (8.5 By 2030, achieve full and productive employment and decent work for all women and men). Verifier’s action: VT interviewed CME and other project participants who confirmed that values of default working hours of masonry and non-masonry biodigesters for masons and casual laborers are correct. VT thus confirmed that these values are correctly applied in the SDG ER spreadsheet to correctly and accurately calculate the value of the parameter. VT thus confirms that the value of the parameter applied is correct and appropriate. Conclusion: The parameter is monitored in accordance with the registered VPA-DD, applied methodology, and approved monitoring plan in the approved TA. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr></table>	☐	In this context the following findings have been raised:	OK	OK				
☐	In this context the following findings have been raised:									

		☐ ☐		
8. Up _{1,y}		Description: Cumulative usage rate for technologies in project scenario p1 in year y, based on cumulative adoption rate and drop-off rate (fraction)		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/	Description:	OK	OK
	/TA/	Cumulative usage rate for technologies in project scenario p1 in year y, based on cumulative adoption rate and drop-off rate (fraction)		
	/SDG_ER/	The value is applied as 78.63%		
	/NPA-DD/	The data is obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis B and is determined by calculation using interview results from the usage survey conducted annually.		
	/TPDDTEC/	The value is used in the calculation of project emissions.		
	/IM/	Verifier’s action:		
	/US/	VT interviewed PP during remote audit online meeting and made phone calls to randomly selected households to determine whether the usage survey was conducted in line with the requirements and guidelines: usage rate monitoring version 2.0.		
/UR/	VT confirmed in the SDG ER Survey B sheet that the overall sample size of 245 (35 per age) selected meets the minimum sample requirement of 100 with each age meeting a minimum sample size of 30 for all the 7 ages, and was selected randomly following the multistage sampling approach in which randomly selected 35 HHs in each age are resrepresentative of the counties based on the proportional representation of each county.			
		By double-calculation and recalculations, VT also confirmed that the value of usage rate in the SDG ER spreadsheet is correctly calculated on weighted average basis adjusted for operational and plant capacity factors. VT further confirmed that all households interviewed showed similar results as those in the ER Survey B spreadsheet without any deviations. VT thus confirmed the value applied is correct and thus appropriate.		
		Conclusion:		
		The parameter is monitored in accordance with the registered VPA-DD, approved sampling design, approved TA, Usage rate monitoring requirements and guidelines and the applied methodology.		
		☐ In this context the following findings have been raised:		
		☐		
		☐		
9. N _{p1,y}		Description: Cumulative number of project technology-days included in the project database for project scenario p1 against baseline scenario b in year y		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level	/MR/	Description:	OK	OK
	/TA/	Cumulative number of project technology-days included in the project database for project scenario p1 against baseline scenario b in year y		
	/SDG_ER/			

(ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/VPA-DD/ /TPDDTEC/ /IM/	The value is applied as 1,149,098. The data is obtained from VPA06 MPV_survey_SDG_ER, sheet Analysis B and is determined by calculation using data updated continuously in the project database. The value is used in the calculation of project emissions. <i>Verifier’s action:</i> VT crosschecked information in MR against project database and monitoring survey records in VPA06 MPV_survey_SDG_ER survey A sheet. VT further reviewed monitoring survey results in VPA06 MPV_survey_SDG_ER, sheet Analysis B, cell C29 and confirmed that the value is correctly calculated. VT also interview CME and other project participants and confirms that the monitoring was correctly done in line with the monitoring plan for this parameter. <i>Conclusion:</i> The parameter is monitored in accordance with the registered VPA-DD, the applied methodology, approved mponitoring plan, and approved Transition Annex. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐			
☐	In this context the following findings have been raised:									
☐										
☐										
10. Op1,y		Description: Cumulative number of project technology-days included in the project database for project scenario p1 against baseline scenario b in year y								
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /TA/ /ER /VPA-DD/ /IPCC/ /GS4GG/	<i>Description:</i> The average technology-days during which the biodigesters are operational for project scenario p1 against baseline scenario b1 in year y The value applied is 263.40 The value applied is sourced from VPA06 MPV_survey_SDG_ER, sheet Analysis B and is determined by calculation using project database data and operational rate. The parameter vauue is monitored continuously. These values are used in the calculation of baseline and project emissions. <i>Verifier’s action:</i> VT crosschecked information in MR for this parameter against data and information in the project database, monitoring survey and usage survey results. VT further reviewed calculations used in monitoring results analysis sheet and confirmed that the value is correctly calculated using accurate results which are consistent both in MR and Analysis B sheet, and usage survey and thus appropriate. <i>Conclusion:</i> The parameter is monitored in accordance to the registered VPA-DD, applied methodology, TA, and approved monitoring plan. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		OK	OK		
☐	In this context the following findings have been raised:									
☐										

11. LE _{p1,y}		Description: Leakage in project scenario p during year y																		
0) Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /TA/ /SDG_ER/ /NPA-DD/ /TPDDTEC/ /IM/	Description: Leakage in project scenario p during year y. The value applied is 0 and is obtained through the annual Biogas User Survey by interviewing non-biogas digester users, using a formulated questionnaire. This value is updated every two years and is used in the calculation of the project emissions. Verifier’s action: VT cross checked between information in MR reports for this parameter against data from monitoring survey records. Further, VT reviewed calculations used in determining the value applied. VT thus confirms that the value applied is correct. Conclusion: The parameter is monitored according to the registered VPA-DD, applied methodology, approved monitoring and sampling plan, and approved Transition Annex. In this context the following findings have been raised:	OK	OK																
12. N _{T,h}		Description: Number of livestock category T in premise h																		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /SDG_ER/ /TA/ /NPA-DD/ /TPDDTEC/ /IM/	Description: Number of livestock category T in premise h. Values applied are as follows:<table><tr><td>Number of animals</td><td>#/hh</td></tr><tr><td>Number of dairy cattle</td><td>4.38</td></tr><tr><td>Number of other cattle</td><td>0.36</td></tr><tr><td>Number of pigs (for market)</td><td>0.89</td></tr><tr><td>Number of pigs (for breeding)</td><td>1.19</td></tr><tr><td>Number of poultry</td><td>50.38</td></tr><tr><td>Number of sheep</td><td>2.01</td></tr><tr><td>Number of goats</td><td>1.21</td></tr></table> The values are sourced from VPA06 MPV_survey_SDG_ER, sheet analysis A and are determined through interviews with households during monitoring survey conducted annually. The values are used in the calculation of baseline and project emissions. Verifier’s action: VT crosschecked data reported in MR for this parameter, against annual end-user monitoring survey. VT reviewed calculations in Analysis A sheet and confirmed that the value applied is correctly calculated without errors. VT interviewed end-users who also confirmed that they keep the animals of type and same number indicated in the MR and Survey	Number of animals	#/hh	Number of dairy cattle	4.38	Number of other cattle	0.36	Number of pigs (for market)	0.89	Number of pigs (for breeding)	1.19	Number of poultry	50.38	Number of sheep	2.01	Number of goats	1.21	OK	OK
Number of animals	#/hh																			
Number of dairy cattle	4.38																			
Number of other cattle	0.36																			
Number of pigs (for market)	0.89																			
Number of pigs (for breeding)	1.19																			
Number of poultry	50.38																			
Number of sheep	2.01																			
Number of goats	1.21																			

		A analysis sheet without material deviation. The value is thus correct and appropriate. Conclusion: Operational and data collection procedures for this parameter are implemented in accordance with the registered monitoring plan, the registered VPADD, TA, and applied methodology. ☐ In this context the following findings have been raised: ☐ ☐												
13. BB _{b ratio}		Description: Baseline scenario ratios												
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /SDG_ER/ /NPA-DD/ /IM/ /TA/	Description: Baseline scenario ratios. Values applied are as follows:<table><tr><th>Baseline scenario</th><th>Percentage</th></tr><tr><td>B1: Firewood used to meet (more than 50%) of my cooking needs</td><td>76.4%</td></tr><tr><td>B2: Charcoal used to meet (more than 50%) of my cooking needs</td><td>7.9%</td></tr><tr><td>B3: Firewood & charcoal used to meet (more than 50%) of my cooking</td><td>1.0%</td></tr><tr><td>B4: Other fuels</td><td>14.7%</td></tr></table> The vaues are sourced from VPA06 MPV_survey_SDG_ER, sheet analysis and are determined through interviews with households during monitoring survey conducted annually. The values applied are used in the calculation of baseline emissions. Verifier’s action: VT crosschecked data reported in MR for this parameter, against annual end-user monitoring survey. VT reviewed calculations in Analysis A sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR and Analysis A sheet. During phone calls with end-users, they confirmed similar results, and VT confirms that the value applied is suitable. Conclusion: The parameter is monitored in accordance with sampling design in the registered VPA-DD, applied methodology, approved monitoring plan and approved TA. ☒ In this context the following findings have been raised: ☒ FAR 01 ☒ CL02	Baseline scenario	Percentage	B1: Firewood used to meet (more than 50%) of my cooking needs	76.4%	B2: Charcoal used to meet (more than 50%) of my cooking needs	7.9%	B3: Firewood & charcoal used to meet (more than 50%) of my cooking	1.0%	B4: Other fuels	14.7%	OK	OK
Baseline scenario	Percentage													
B1: Firewood used to meet (more than 50%) of my cooking needs	76.4%													
B2: Charcoal used to meet (more than 50%) of my cooking needs	7.9%													
B3: Firewood & charcoal used to meet (more than 50%) of my cooking	1.0%													
B4: Other fuels	14.7%													
14. BB _{b4,fuel}		Description: Amount of fossil fuels used in baseline scenario b4												
Measurement / Determination method (VVS, §§ 363-367)	/MR/ /SDG_ER/	Description: The parameter is described as amount of fossil fuels used in baseline scenario b4.	OK	OK										

Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/NPA-DD/ /TPDDTEC/ /IM/ /TA/	The value applied is 0.24 and is sourced from VPA06 BFT survey and is indicated in VPA06 MPII survey_SDG spreadsheet. The value is determined by calculations from KPT results obtained from BFT survey done once per crediting period. The value is used in the calculation of baseline and project emissions. Verifier’s action: VT crosschecked data reported in MR for this parameter, against annual BFT survey. VT reviewed calculations in VPA06 MPII survey_SDG sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR and the spreadsheet. During remote audit online meeting with CME, VPA implementer and other project participant, VT confirmed that BFT was conducted correctly in line with KPT protocol, following sampling requirements of the applied methodology. VT reviewed BFT results and calucations anf confirmed that the value is correctly calculated and thus appropriate. Conclusion: The parameter is determined in accordance with the registered VPA-DD, applied methodology, and approved TA. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td></tr><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐	In this context the following findings have been raised:	☐		☐			
☐	In this context the following findings have been raised:									
☐										
☐										
15. BB _{b1,2,3, 4}		Description: Amount of fossil fuel used in the baseline scenarios b1, b2, b3 and b4								
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /SDG_ER/ /NPA-DD/ /TPDDTEC/ /MPI_MR/ /IM/ /TA/	Description: The parameter is described as amount of fossil fuel used in the baseline scenarios b1, b2, b3 and b4. The value applied is similar to that applied in BB_{b4,fuel} as no fossil fuels are issued in the other senarios. The values are sourced from VPA06 BFT survey and is indicated in VPA06 MPII survey_SDG spreadsheet. The value is determined by calculations from KPT results obtained from BFT survey done once per crediting period. The value is used in calculation of baseline emissions. Verifier’s action: VT crosschecked data reported in MR for this parameter, against annual BFT survey. VT reviewed calculations in VPA06 MPII survey_SDG sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR and the spreadsheet. During remote audit online meeting with CME, VPA implementer and other project participant, VT confirmed that BFT was conducted correctly in line with KPT protocol, following sampling requirements of the applied methodology. VT reviewed BFT results and calculations anf confirmed that the value is correctly calculated and thus appropriate. Conclusion: The parameter is determined in accordance with the registered VPA-DD, applied methodology, and approved TA.	OK	OK						

		☐ In this context the following findings have been raised: ☐ ☐		
16. BB_{p1, bio}		Description: Amount of woody biomass used in the project scenario p1 (one value)		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /SDG_ER/ /TA/ /GSM/ /VPA-DD/ /IM/ /TPDDTEC/ /MPIV-MR/	Description: Amount of woody biomass used in the project scenario p1 (one value). The value applied is 0.612 and is sourced from VPA06 MRIV. The value is determined by calculations from KPT results obtained from monitoring survey. This value is updated every two years and is used in the calculation of the project emissions. Verifier's action: VT crosschecked information and data reported in MR for this parameter, against the verified monitoring period IV MR, approved monitoring plan, approved VPA-DD, approved TA, and applied methodology. VT confirmed that the value reported in MR matches value in verified monitoring period IV MR. Conclusion: The parameter is monitored in line with the registered VPA-DD, approved TA, approved monitoring plan, and applied methodology. ☐ In this context the following findings have been raised: ☐ ☐	OK	OK
17. BB_{p1, fuel}		Description: Projected amount of fossil fuels used in the project scenario p1		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /SDG_ER/ /VPA-DD/ /TA/ /IM/ /TPDDTEC/	Description: Projected amount of fossil fuels used in the project scenario p1. The value applied is 0.04 and is sourced from VPA06 MRIV. It is determined by calculations from KPT results obtained from monitoring survey. This value is updated every two years and is used in the calculation of the project emissions. Verifier's action: VT crosschecked information and data reported in MR for this parameter, against the verified monitoring period IV MR, approved monitoring plan, approved VPA-DD, approved TA, and applied methodology. VT confirmed that the value reported in MR matches value in verified monitoring period IV MR. Conclusion: The parameter is monitored in line with the registered VPA-DD, approved TA, approved monitoring plan, and applied methodology.	OK	OK

		☐ In this context the following findings have been raised: ☐ ☐																		
18. MS _{P,S,k}		Description: Fraction of livestock category T's manure not treated in bio-digester S, in climate region k																		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /TA/ /TPDDTEC/ /NPA-DD/ /IM/	Description: Fraction of livestock category T's manure not treated in bio-digester S, in climate region k. Value applied are as follows: <table><tr><th>Animal T</th><th>Fraction</th></tr><tr><td>Dairy cattle</td><td>9.30%</td></tr><tr><td>Other cattle</td><td>38.00%</td></tr><tr><td>Market swine</td><td>76.43%</td></tr><tr><td>Breeding swine</td><td>60.91%</td></tr><tr><td>Poultry</td><td>94.31%</td></tr><tr><td>Sheep</td><td>96.59%</td></tr><tr><td>Goat</td><td>100.00%</td></tr></table> The values are sourced from VPA06 MPV_survey_SDG_ER, sheet Analysis A. They are determined by calculations from interview results obtained from monitoring surveys conducted annually. The values are used in the calculation of project emissions. Verifier's action: VT crosschecked data reported in MR for this parameter, against annual end-user monitoring survey. VT reviewed calculations in Analysis A sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR and Analysis A sheet. During phone calls with end-users, they confirmed similar results, and VT confirms that the value applied is suitable. Conclusion: The parameter is monitored in accordance with sampling design in the registered VPA-DD, applied methodology, approved monitoring plan and approved TA. ☐ In this context the following findings have been raised: ☐ ☐	Animal T	Fraction	Dairy cattle	9.30%	Other cattle	38.00%	Market swine	76.43%	Breeding swine	60.91%	Poultry	94.31%	Sheep	96.59%	Goat	100.00%	OK	OK
Animal T	Fraction																			
Dairy cattle	9.30%																			
Other cattle	38.00%																			
Market swine	76.43%																			
Breeding swine	60.91%																			
Poultry	94.31%																			
Sheep	96.59%																			
Goat	100.00%																			
19. MS _{T,S,k}		Description: Fraction of livestock category T's manure fed into the bio-digester S in climate region k																		
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.	/MR/ /SDG_ER/ /NPA-DD/ /TPDDTEC/ /IM/ /TA/	Description: Fraction of livestock category T's manure fed into the bio-digester S in climate region k Values applied are as follows: <table><tr><th>Animal T</th><th>Fraction</th></tr><tr><td>Dairy cattle</td><td>90.7%</td></tr><tr><td>Other cattle</td><td>62.0%</td></tr><tr><td>Market swine</td><td>23.6%</td></tr><tr><td>Breeding swine</td><td>39.1%</td></tr></table>	Animal T	Fraction	Dairy cattle	90.7%	Other cattle	62.0%	Market swine	23.6%	Breeding swine	39.1%	OK	OK						
Animal T	Fraction																			
Dairy cattle	90.7%																			
Other cattle	62.0%																			
Market swine	23.6%																			
Breeding swine	39.1%																			

Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.		<table><tr><td>Poultry</td><td>5.7%</td></tr><tr><td>Sheep</td><td>3.4%</td></tr><tr><td>Goat</td><td>0.0%</td></tr></table>	Poultry	5.7%	Sheep	3.4%	Goat	0.0%				
		Poultry	5.7%									
		Sheep	3.4%									
		Goat	0.0%									
		The values are sourced from VPA06 MPV_survey_SDG_ER, sheet Analysis A. They are determined by calculations from interview results obtained from monitoring surveys conducted annually. The values are used in the calculation of project emissions.										
<i>Verifier’s action:</i> VT crosschecked data reported in MR for this parameter, against annual end-user monitoring survey. VT reviewed calculations in Analysis A sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR and Analysis A sheet. During phone calls with end-users, they confirmed similar results, and VT confirms that the value applied is suitable.												
<i>Conclusion:</i> The parameter is monitored in accordance with sampling design in the registered VPA-DD, applied methodology, approved monitoring plan and approved TA.												
☐	In this context the following findings have been raised: <table><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐		☐								
☐												
☐												
20. GWP _{CH4}		Description: Global Warming Potential of methane										
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /NPA-DD/ /TPDDTEC/ /TA/ /RU/	<i>Description:</i> Global Warming Potential of methane. Value applied is 28 and is sourced from GS RU-2020. The value is used in the calculation of baseline and project emissions.	OK	OK								
		<i>Verifier’s action:</i> VT crosschecked information reported in MR for this parameter, against GS rule 2020 update and confirmed that the value is correct.										
		<i>Conclusion:</i> The parameter value is correctly applied as per registered VPA-DD, Transition Annex, GS RU requirements, and applied methodology.										
		☐			In this context the following findings have been raised: <table><tr><td>☐</td><td></td></tr><tr><td>☐</td><td></td></tr></table>	☐		☐				
		☐										
☐												
21. Bio		Description: Use of bio-slurry										
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).	/MR/ /TA/ /SDG_ER/ /NPA-DD/ /IM/	<i>Description:</i> This parameter is described as the use of bio-slurry The values applied are as follows: <table><tr><td>How do you apply bio-slurry</td><td>% of farmers</td></tr><tr><td>Use directly for various purposes</td><td>31%</td></tr><tr><td>Store it first</td><td>68%</td></tr><tr><td>I don’t use it / discarded</td><td>1%</td></tr></table>	How do you apply bio-slurry	% of farmers	Use directly for various purposes	31%	Store it first	68%	I don’t use it / discarded	1%	OK	OK
		How do you apply bio-slurry	% of farmers									
		Use directly for various purposes	31%									
		Store it first	68%									
		I don’t use it / discarded	1%									

Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.		The values applied are sourced from VPA06 MPV_survey_SDG_ER, sheet bio-slurry and are determined from results obtained from monitoring survey conducted annually. These values are used in the calculation of project emissions.														
		Verifier’s action: VT crosschecked data reported in MR for this parameter, against annual end-user monitoring survey. VT reviewed calculations in SDG_ER spreadsheet bio-slurry sheet and confirmed that the value applied is correctly calculated without errors and is consistent both in MR bio-slurry sheet. During phone calls with end-users, they confirmed similar results, and VT confirms that the value applied is suitable.														
		Conclusion: The parameter is monitored in line with sampling design and monitoring plan in the registered VPA-DD, approved TA, and applied methodology.														
		<table><tr><td>☐</td><td>In this context the following findings have been raised:</td><td></td><td></td></tr><tr><td>☐</td><td></td><td></td><td></td></tr><tr><td>☐</td><td></td><td></td><td></td></tr></table>	☐	In this context the following findings have been raised:			☐				☐					
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22. N _{op1,y}		Description: Cumulative number of project technologies included in the project database for project scenario p1 in year y														
Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /TA/ /SDG_ER/ /NPA-DD/ /TPDDTEC/ /IM/	Description: Cumulative number of project technologies included in the project database for project scenario p1 in year y. Value applied is 4,445. The value is sourced from VPA06 MPV_survey_SDG_ER, sheet Analysis B. It is determined by calculation using user data updated continuously in the project database from sales records. The value is used in the calculation of baseline and project emissions. Verifier’s action: VT crosschecked information and data reported in MR for this parameter against project database and reviewed results from project monitoring survey and confirmed that the value applied is correctly calculated and is consistent in both MR and Analysis B sheet. VT interviewed CME and VPA implementer via online meeting and confirmed that the project database is continuously updated following their QA/QC procedures. VT thus confirmed that the value applied is appropriate. Conclusion: The parameter is monitored according to the registered VPA-DD, approved monitoring plan, approved TA, and applied methodology. <table><tr><td>☐</td><td>In this context the following findings have been raised:</td><td></td><td></td></tr><tr><td>☐</td><td></td><td></td><td></td></tr><tr><td>☐</td><td></td><td></td><td></td></tr></table>	☐	In this context the following findings have been raised:			☐				☐				OK	OK
☐	In this context the following findings have been raised:															
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Appendix 6. Calibration dates and validity of weighing scale

Table A-6: Periodic Verification Checklist – Calibration details

Monitoring equipment	Purpose	Serial number	Manufacturer	Capacity	Calibration date
N/A	N/A	N/A	N/A	N/A	N/A