



**Verified Carbon
Standard**

VERIFICATION REPORT

BYZ GLOBAL ENERGY BIOGAS PLANT



South Asia

Document Prepared By
TÜV SÜD South Asia Pvt Ltd

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Summary:

TÜV SÜD South Asia Pvt. Ltd. has performed the first verification of the VCS project activity. The verification is based on the currently valid documentation of VCS and United Nations Framework Convention on Climate Change (UNFCCC).

The Verification has been conducted for the monitoring period 30.07.2019 to 31.07.2022 (start and end dates included).

The verification process includes three phases:

- Desk review of documents.
- On-site audit and follow-up interviews with the relevant personnel.
- Resolution of outstanding issues and the issuance of final verification report and opinion.

The main purpose of this project activity is to generate renewable energy by capturing biogas from animal manure -via anaerobic digestion- and utilizing it to produce thermal and electric energy through cogeneration systems. The project activity has one cogeneration engine installed at the biogas power plant, with the capacity of 1.501 MWe. The annual feed-in electricity is estimated to be 10,507,000 kWh. The project is being implemented by BYZ GLOBAL ENERJİ VE GÜBRE ÜRETİMİ TİCARET SANAYİ ANONİM ŞİRKETİ, located in Kocasinan district, Kayseri province, in Turkey.

The implementation status of the plant has been cross verified with the commissioning certificates.

During the current monitoring period i.e., from 30.07.2019 to 31.07.2022 (inclusive of both the days), the project activity has contributed to GHG reductions to the tune of 168,813 tCO₂e.

03 Clarification Requests (CLs) and 04 Corrective Action Request (CAR) have been raised during verification process and have been successfully closed. In addition, 02 Forward Action Request (FAR) was raised and remained open.

VVB confirms that the project is implemented in accordance with the registered VCS-PD. The monitoring plan complies with the applied methodologies AMS-III.D. version 21.0 and AMS-I.D. version 18.0, and the monitoring has been carried out in accordance with the monitoring plan in the registered PDD. The monitoring system is in place and the emission reductions are calculated without material misstatements. The level of assurance of the verification is reasonable. Our opinion relates to the projects GHG emissions, and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated, VVB confirms that the implementation of the project has resulted in 168,813 tCO₂e emission reductions during period 30.07.2019 to 31.07.2022, start and end dates included.

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1 INTRODUCTION

1.1 Objective

TÜV SÜD has been commissioned by the client to perform an independent verification assessment.

The objective of the verification work is to comply with the requirements of Verified Carbon Standards requirements. According to this assessment, TÜV SÜD shall:

- ✓ Ensure that the project activity has been implemented and operated as per the registered PD, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ✓ Ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable VCS and CDM VVS requirements,
- ✓ Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- ✓ Evaluate the data recorded and stored as per the applicable requirements.
- ✓ Assess the sustainability monitoring parameters as per the VCS requirements.

1.2 Scope and Criteria

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of VCS project activities, the scope is set by:

- ✓ VCS Standard v4.4 requirements.
- ✓ Clean Development Mechanism Validation and Verification Standard (VVS) for Project Activities v3.0.
- ✓ Baselines and monitoring methodologies (including GHG inventories).
- ✓ Environmental issues relevant to the applicable sectoral scope 13: Waste handling and disposal.
- ✓ Current technical and operational knowledge of the specific sectoral scope and information on best practice.
- ✓ Stakeholder consultation and feedback.

The verification process is not meant to provide any form of consulting for the Project Participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for the improvement of the project design.

1.3 Level of Assurance

The verification has been carried out through the review of the monitoring report, PD documents, the supporting documents, and other relevant documents provided to the verification team; please refer to Appendix 1. Based on the mentioned documents and the site visits, the verification team has concluded that the level of assurance is reasonable. The errors identified in the project are below the threshold limit of materiality and hence not material. Therefore, the GHG emission reductions are calculated without material misstatements.

The VVB confirms that a reasonable level of assurance has been achieved during the verification process.

1.4 Summary Description of the Project

The project activity introduces a new animal waste management system to treat animal manure collected from neighbouring farms and utilize the biogas captured from the collected manure for electricity generation. The technology that is applied in the facility involves anaerobic digestion in continuously stirred tank reactors (CSTR) and cogeneration in a gas engine. The project is located at Kocasinan district, Kayseri province in Turkey.

The project activity has one cogeneration engine installed at the biogas power plant, with the capacity of 1.501 MWe. Whilst heat generated at the plant is used at the facility to warm the digesters, the electricity generated is directly fed to the national grid.

This project adopts the fixed crediting period of 10 years.

The current monitoring period is from 30.07.2019 to 31.07.2022 (start and end dates included). The total GHG emission reductions or removals generated in this monitoring period are 168,813 tCO₂.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The information provided by the project participants is assessed by applying the means of verification specified in the VCS Standard v4.4, VCS Validation and Verification Manual Version 3.2, Toolkit and the VVS.

A competent assessment team is selected prior to the start of the verification. The team is selected to cover the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the VCS project activity. Additionally, a competent Technical Reviewer or Technical Reviewer Team is appointed to conduct checks on quality and completeness.

The verification team performs first a desk review, followed by a site visit, which results in the formation of a draft report and a list of findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB “Environment and energy” before submission to the VCS.

The kick-off meeting for this verification was conducted after the verification agreement was signed between two parties. Desk review was started on March 2022 followed by the site visit conducted between 7th to 9th of March 2022.

2.2 Document Review

Documents provided by the PP including the monitoring plan, monitoring report, project design document, monitoring methodology, and the supporting documents have been reviewed to verify the materiality and suitability of the project. The documents referred to during this verification period are provided in Appendix 1.

2.3 Interviews

The VVB has conducted on-site inspection for this current monitoring period between 7th to 9th of March, 2022. The objective of the interview process was to solicit important information from personnel related to project and relevant to the verification process. The VVB has conducted interviews with the site manager to understand and confirm the general aspects of the project, the personnel and their assigned responsibilities, monitoring method and equipment applied within the project boundary, animal manure collection and treatment system as well as the biogas and electricity generation. The site manager also provided information on the QA/QC procedures and emergency preparedness of the facility. The key personnel interviewed are summarized in the table below.

The main topics covered during the interview are as follows:

- ✓ General Aspects of the project
- ✓ Project Implementation
- ✓ Equipment and operation
- ✓ Staff Training procedures
- ✓ Calibration procedures
- ✓ Monitoring & Measuring System

✓ Data collection, recording and archiving procedure

✓ QA/QC procedures

✓ VCS documentation

✓ Emission reduction calculations

N o.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Pak	Gökhan	Site Manager / Mechanical Engineer	07.03.2022	Plant technology and monitoring, general aspects of the project, data collection procedure.	Shailendra Kewat
2	Örsan	Emre	Technician-Laboratory	08.03.2022	Monitoring of the lab operations, technologies, measurement / sampling procedures.	Shailendra Kewat
3	Adıgüzel	Mehmet	Operational Chief / Electrical Maintenance	08.03.2022	Monitoring of the operational parameters, calibration procedures, knowledge about the equipment and instruments in the plant.	Shailendra Kewat
4	Başyazıcıoğlu	E. Şükrü	Farm Owner of Kayseri Yem (Birlik) Çiftliği	09.03.2022	Agreement with owner, Monitoring procedure, knowledge about project and the baseline scenario at the farm to the project's implementation.	Shailendra Kewat
5	Atalay	Berkay	Farm Owner of Atalay Besi Çiftliği	09.03.2022	Agreement with owner, Monitoring procedure, knowledge about project and the baseline scenario at the farm to the project's implementation.	Shailendra Kewat
6	Önder	Umut	Consultant (Climate Solutions LLC.)	07.03.2022	Eligibility Criteria, Baseline and Additionality, Applicability Conditions, Emission reductions calculations, additionality and investment analysis, starting date and crediting period. Social & Environmental impacts.	Shailendra Kewat

2.4 Site Visits

Please, see the details of the interviews with the site manager, laboratory staff, technical staff, and farm owners in Section 2.3 above. These interviews were conducted to confirm the provided details of the project design, information given about the project, and results reported in the MR.

Part of the site inspections involved on-site inspections of each of the farms within the project boundary where the project activity is implemented for the verification period. The list of animal farms taken into consideration for ER calculations during the current monitoring period was cross-checked with the farms included at the validation stage. Such cross-check resulted that 16 of farms included at the validation stage has been removed from the farm list during the verification period. PP has added 10 new farms in the ER calculations. Consequently, 21 farms (given in table below) are included in the project boundary for the monitoring period. Farms that were included at the validation stage and new farms that are added during monitoring period are listed as follows;

Farms Declared at Time of Validation	Manure Supplier Farms at the Current Monitoring Period
Admar Besi (Muhsin Seyitoğlu)	Admar Besi Çiftliği
Ahmet Seyitoğlu Besi	Ahmet Seyitoğlu Besi Çiftliği
Atalay Besi	Atalay Besi Çiftliği
Ateş Besi (Al Ateş Besi)	Al Ateş Besi Çiftliği
Başyazıcıoğlu Besi	Başyazıcıoğlu Besi Çiftliği
Birlik Yumurta	Kayseri Yem (Birlik Yumurta)
Ercüment Aslan (Aslan Besi)	Aslan Besi Çiftliği
Genç Seyitoğlu	Genç Seyitoğlu Besi Çiftliği
Gülbüz Besi	Gülbüz Besi
İsmail Seyitoğlu Besi (Site Tarım)	Site Tarım Besi Çiftliği
Recep Yıldırım Besi (Ry Besi)	Ry Besi Çiftliği

Bulut Besi ¹	Adem Seyitoğlu Besi Çiftliği ²
Cabbar Kaya Besi ¹	Çetinoğlu Besi Çiftliği ²
Fatih Acar Besi ¹	Emin Besi Çiftliği ²
Halit Taştan Besi ¹	Erciyes Besi Çiftliği ²
İbrahim Mazmaloğlu Besi ¹	Erciyes Tavukçuluk ²
Kalender Besi ¹	İhsan Seyitoğlu Besi Çiftliği ²
Karakaş Besi ¹	Kayalar Besi Çiftliği ²
Mehmet Seyitoğlu Besi ¹	M. Kudbettin Seyitoğlu Besi Çiftliği ²
Nizamettin Şen Besi ¹	Mehmet Bellek Besi Çiftliği ²
Ömer Yalçın Besi ¹	Yeşilbaş Besi Çiftliği ²
Selahattin Aras ¹	
Serkan Seyitoğlu Besi ¹	
Site Besi ¹	
Süleyman Seyitoğlu Besi ¹	
Şimsek Besi ¹	
Yalinoğlu Yumurta ¹	

As per the para 35 of applied Methodology AMS-III.D, the monitoring plan should include on-site inspections for each individual farm included in the project boundary where the project activity is implemented for each verification period. Thus, VVB has performed on-site inspections to each farm within project boundary. This includes both new farms and farms that were included at the validation stage.

The locations of these visited farms are given in the following table.

¹ Removed from the manure supplier farm list at the current monitoring period.

² Included to the manure supplier farm list at the current monitoring period.

#	Farm Name	LATITUDE	LONGITUDE	Distance Between Itineraries (km)
1	ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	+38.81706	+35.55132	0.5
2	ADMAR BESİ ÇİFTLİĞİ	+38.81701	+35.61332	15
3	AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	+38.81473	+35.61021	16
4	AL ATEŞ BESİ ÇİFTLİĞİ	+38.81469	+35.54837	1
5	ASLAN BESİ ÇİFTLİĞİ	+38.80182	+35.49908	7
6	ATALAY BESİ ÇİFTLİĞİ	+38.80346	+35.50088	7
7	BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	+38.80222	+35.50009	7
8	ÇETİNOĞLU BESİCİLİK	+38.77188	+35.52750	8
9	EMİN BESİ ÇİFTLİĞİ	+38.80394	+35.50074	7
10	ERCİYES BESİ ÇİFTLİĞİ	+38.82092	+35.60548	14
11	GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	+38.80516	+35.50398	8
12	GÜRBÜZ BESİCİLİK	+38.82618	+35.59591	13
13	İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	+38.80678	+35.54332	3
14	KAYALAR BESİ ÇİFTLİĞİ	+38.80214	+35.49980	8
15	KAYSERİ YEM (BİRLİK YUMURTA)	+38.80516	+35.50397	8
16	M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	+38.80208	+35.50407	8
17	MEHMET BELLEK BESİ ÇİFTLİĞİ	+38.80347	+35.50278	8
18	RY BESİ ÇİFTLİĞİ	+38.80209	+35.50407	8
19	SİTE TARIM BESİ ÇİFTLİĞİ	+38.81581	+35.54564	2
20	YEŞİLBAŞ BESİ ÇİFTLİĞİ	+38.82092	+35.19692	38
21	ERCİYES TAVUKÇULUK	+38.83622	+35.51692	9

As a result of on-site inspections for each individual farm included in the project boundary, VVB verifies that all manure supplier farms comply with the AMS-III.D, version 21 applicability requirements upon checking the lagoon depth and retention time.

The site visits for the current monitoring period were conducted between 7th to 9th of March, 2022. During these site visits, VVB has checked the monitoring data to date supplied by the PP, application of methodologies, appropriateness of monitoring plan, and the qualification of animal farms. In addition, as mentioned in Section 4, all the monitoring parameters furnished by the PP have been cross-checked with the electronic records, operational logbooks, and monitoring surveys for the entire monitoring period. Section 3.3.1.1 of the VCS Validation and Verification Manual v.3.2 classifies the types of evidence in order of decreasing reliability as physical, documentary and testimonial³. Accordingly, VVB has ensured a reasonable level of assurance through examination of documentary evidence and testimonials from responsible personnel throughout the monitoring period. Thus, VVB has concluded that a reasonable level of assurance was provided for the current monitoring period.

2.5 Resolution of Findings

As an outcome of the verification process, the team can raise different types of findings. Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR).

A CAR is issued, where:

- a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- b) Modifications to the implementation, operation and monitoring of the project activity has not been sufficiently documented by the project participants;
- c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

There are 03 CLs, 04 CARs, and 02 FARs raised during the verification process. Please see Appendix-2 for the details.

³ https://verra.org/wp-content/uploads/2018/03/VCS_Validation_Verification_Manual_v3.2.pdf (Accessed on 30/01/2023)

2.5.1 Forward Action Requests

During the verification period, 02 FARs are raised.

2.6 Eligibility for Validation Activities

Project is not a validation activity.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The VVB confirms that the project is registered only under VCS and not registered in any other GHG program, such as CDM, JI, the Climate Action Reserve, Biocarbon Registry, International Carbon Registry, Gold Standard for Global Goals (GS4GG), and Global Carbon Council (GCC).

3.2 Methodology Deviations

No deviation has been sought from the methodology during current monitoring.

3.3 Project Description Deviations

One deviation has been sought from the project description during current monitoring related to the animal manure suppliers. The list of animal manure suppliers has been revised by the PP due to the changes occurred after the validation period. Related changes have been provided in detail in Section 2.4 of this verification report. Within this deviation 16 farms were eliminated from the suppliers list whilst 10 new farms were included to the project boundary during this monitoring period. The VVB has checked the VCS-MR and confirms that applied project description deviation is appropriately described and justified in Section 3.2.2 of the VCS-MR.

The VVB has assessed the deviation as described in Section 3.2.2 of the VCS-MR against the criteria set out in the VCS Standard v4.4 and CDM Guidelines on assessment of different types of changes from the project activity as described in the registered PDD. Impacts on the applicability of the methodology, additionality or the appropriateness of the baseline scenario has been checked upon applied deviation.

The VVB has concluded that the applied deviation does not impact additionality of the project activity as the changes does not impact validity of investment analysis or barrier analysis established at the time of project registration.

The applicability conditions of each animal manure suppliers were verified during site visits and the VVB confirms that;

- (a) The livestock population in the farms are managed under confined conditions;
- (b) Manure or the streams obtained after treatment are not discharged into natural water resources (e.g. river or estuaries)
- (c) The annual average temperature of baseline site where anaerobic manure treatment facility is located is higher than 5°C;
- (d) In the baseline scenario the retention time of manure waste in the anaerobic treatment system is greater than one month, and depth of anaerobic lagoons used in the baseline are at least 1 m;
- (e) No methane recovery and destruction by flaring or combustion for gainful use takes place in the baseline scenario.

The baseline scenario for newly included farms were checked and confirmed as anaerobic decay of animal manure and emission of resulting methane to the atmosphere which complies with the applied Methodology.

Based on the assessment, the VVB confirms that project description deviation is applied in line with the VCS Standard v4.4 and no project description deviation is required.

3.4 Grouped Project

The project is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The VVB confirms that based on the official records and provided documentation, the project is being implemented by BYZ GLOBAL ENERJİ VE GÜBRE ÜRETİMİ TİCARET SANAYİ ANONİM ŞİRKETİ in Kocasinan district, Kayseri province, in Turkey.

Project start date has been confirmed as 30.07.2019 by checking the construction and provisional acceptance to generate electricity given by the Ministry of Energy and Natural Resources.

The avoidance of methane emission generated in the baseline using anaerobic lagoons installed in cattle and chicken farms was confirmed through the site inspections and supporting documents provided by the PP. The project collects animal manure to use as raw material in the biogas utilization project.

The project activity has one cogeneration engine installed at the biogas power plant, with the capacity of 1.501 MWe. Whilst heat generated at the plant is used at the facility to warm the digesters, the electricity generated is fed to the national grid, after utilizing as auxiliary electricity consumption for the activities in the plant.

The VVB confirms that the project implementation involves the installation of manure reception area; weighbridge; manure preparation and mixing tanks; digestion reactors, final fermentation reactor and biogas storage; biogas production and anaerobic digesters; gas storage unit; gas cleaning unit (desulphurization); cogeneration unit; flaring unit; separator unit; hygienization unit; solid fermented product storage unit; liquid fermented product storage (lagoon) unit. The technical description and flow chart of the project activity was confirmed via checking the MR and interviews with the project authorities. It is confirmed that the monitoring plan describing the implemented monitoring system is suitable to the requirements of the monitoring methodology. The interviews and the site inspections reveal that the required monitoring procedures has been set in place for the relevant monitoring parameters and data.

The current monitoring period is from 30.07.2019 to 31.07.2022 (start and end dates included). The total GHG emission reductions or removals generated in this monitoring period are 168,813 tCO₂. The Project Proponent plans to avail the VCS benefits for the project.

The audit team has checked the commissioning certificates to confirm the location and the implementation status of the project.

PP has included the CS CLIMATE SOLUTIONS DANIŞMANLIK ANONİM ŞİRKETİ, as one of the PP in the revised monitoring report. VVB has cross verified the accession letter issued by the project owner dated 04.02.2022 for the CS CLIMATE SOLUTIONS DANIŞMANLIK ANONİM ŞİRKETİ. Same has been communicated to the VCS board as well. Hence, inclusion of CS CLIMATE SOLUTIONS DANIŞMANLIK ANONİM ŞİRKETİ is found to be appropriate by the VVB.

Parameters Available at Validation and Data Fixed Ex-ante:

Data/ parameter	Unit	Value applied	Assessment
D _{CH₄}	t/m ³	0.00067	Confirmed as per the approved Small-Scale Methodology of AMS-III.D.: Methane recovery in animal manure management systems, Version 21.0 ⁴
GWP _{CH₄}	tCO ₂ e/t CH ₄	28	Value is confirmed from IPCC Fifth Assessment Report as per the applied methodology and as per Version 4.4 of the VCS Standard ⁵
UF _b	Fraction	0.94	Confirmed as per the approved Small-Scale Methodology of AMS-

⁴ <https://cdm.unfccc.int/UserManagement/FileStorage/1AWXEKHVTYF423LCN56Z9GIMQOS8JR> (Accessed on 30/01/2023)

⁵ <https://verra.org/wp-content/uploads/2022/12/VCS-Standard-v4.4-FINAL.pdf> (page 28) (Accessed on 30/01/2023)

			III.D.: Methane recovery in animal manure management systems, Version 21.0 ⁶
$B_{0,LT}$	$m^3CH_4/kg\text{-}dm$	For Other Region – High Productivity Systems (PS), Non-Dairy Cattle: 0.18; Chicken Layer (Hens): 0.39	Confirmed from 2019 Refinement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2019), Volume 4, Chapter 10, Table 10.16, page 10.66 ⁷
$EF_{CH_4,default}$	Fraction (t CH_4 leaked / t CH_4 produced)	0.028	Confirmed as per the Methodological Tool 14: Project and leakage emissions from anaerobic digesters, Version 02.0
$SPEC_{flare}$	Temperature - °C Flow rate or heat flux - kg/h or m3/h Maintenance schedule - number of days	Temperature – 30-800°C Flow rate or heat flux – 250-750 m3/h	VVB has cross verified the Manufacturer's flare operating specifications for temperature, flow rate and maintenance schedule
$EF_{CO_2,transport}$	$kgCO_2/km$	0.245	Methodological tool: Project and leakage emissions from transportation of freight
$EF_{EF,j,y} = EF_{grid,y}$	tCO_2e/MWh	0.5403	VVB has cross verified the registered PD and supporting document obtained from the official national grid emission factor data published by the Ministry of the Energy and Natural Resources in Turkey ⁸ .

The VVB has checked that all ex-ante parameters were fixed in accordance with the VCS Standard 4.4 and the applied methodology and the registered PD. The consistency of the ex-ante values throughout the ER was also checked and confirmed.

Monitoring Parameters:

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report	
	Data / Parameter:	$Q_{manure,LT,y}$ (dry basis)
	Data unit:	tonnes-dm/yr

⁶ <https://cdm.unfccc.int/UserManagement/FileStorage/1AWXEKHVTYF423LCN56Z9GIMQOS8JR> (Accessed on 30/01/2023)

⁷ https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf (Accessed on 30/01/2023)

⁸ https://enerjiapi.etkb.gov.tr/Media/Dizin/ETKB/Duyurular/0c6b62ea-bf2f-4fea-b9b3-28bc6f48ddf2_Bilgi_Formu_-_Web_Sitesi.pdf (Accessed on 25/01/2023)

	Description:	Quantity of manure treated from livestock type LT at animal manure management system j																																																						
	Source of data used:	On site measurement, operational and lab logbooks (weighbridge and lab logbook records)																																																						
	Means of verification/Comments:	<table><tr><th>Farm Name</th><th>Q_{manure,LT,y}</th></tr><tr><td colspan="2">2019</td></tr><tr><td>ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>104.53</td></tr><tr><td>ADMAR BESİ ÇİFTLİĞİ</td><td>88.74</td></tr><tr><td>AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>75.82</td></tr><tr><td>AL ATEŞ BESİ ÇİFTLİĞİ</td><td>2141.11</td></tr><tr><td>ASLAN BESİ ÇİFTLİĞİ</td><td>73.54</td></tr><tr><td>ATALAY BESİ ÇİFTLİĞİ</td><td>183.45</td></tr><tr><td>BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ</td><td>2612.85</td></tr><tr><td>ÇETİNOĞLU BESİCİLİK</td><td>71.42</td></tr><tr><td>EMİN BESİ ÇİFTLİĞİ</td><td>170.17</td></tr><tr><td>ERCİYES BESİ ÇİFTLİĞİ</td><td>135.98</td></tr><tr><td>GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ</td><td>209.62</td></tr><tr><td>GÜRBÜZ BESİCİLİK</td><td>243.82</td></tr><tr><td>İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>73.91</td></tr><tr><td>KAYALAR BESİ ÇİFTLİĞİ</td><td>247.12</td></tr><tr><td>M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>144.35</td></tr><tr><td>MEHMET BELLEK BESİ ÇİFTLİĞİ</td><td>167.41</td></tr><tr><td>RY BESİ ÇİFTLİĞİ</td><td>321.74</td></tr><tr><td>SİTE TARIM BESİ ÇİFTLİĞİ</td><td>204.96</td></tr><tr><td>YEŞİLBAŞ BESİ ÇİFTLİĞİ</td><td>365.54</td></tr><tr><td>TOTAL₂₀₁₉</td><td>7,636.08</td></tr><tr><td colspan="2">2020</td></tr><tr><td>ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>179.26</td></tr><tr><td>ADMAR BESİ ÇİFTLİĞİ</td><td>152.47</td></tr><tr><td>AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ</td><td>134.50</td></tr><tr><td>AL ATEŞ BESİ ÇİFTLİĞİ</td><td>3758.60</td></tr></table>		Farm Name	Q _{manure,LT,y}	2019		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	104.53	ADMAR BESİ ÇİFTLİĞİ	88.74	AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	75.82	AL ATEŞ BESİ ÇİFTLİĞİ	2141.11	ASLAN BESİ ÇİFTLİĞİ	73.54	ATALAY BESİ ÇİFTLİĞİ	183.45	BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	2612.85	ÇETİNOĞLU BESİCİLİK	71.42	EMİN BESİ ÇİFTLİĞİ	170.17	ERCİYES BESİ ÇİFTLİĞİ	135.98	GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	209.62	GÜRBÜZ BESİCİLİK	243.82	İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	73.91	KAYALAR BESİ ÇİFTLİĞİ	247.12	M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	144.35	MEHMET BELLEK BESİ ÇİFTLİĞİ	167.41	RY BESİ ÇİFTLİĞİ	321.74	SİTE TARIM BESİ ÇİFTLİĞİ	204.96	YEŞİLBAŞ BESİ ÇİFTLİĞİ	365.54	TOTAL ₂₀₁₉	7,636.08	2020		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	179.26	ADMAR BESİ ÇİFTLİĞİ	152.47	AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	134.50	AL ATEŞ BESİ ÇİFTLİĞİ
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		ASLAN BEŞİ ÇİFTLİĞİ	121.42	
		ATALAY BEŞİ ÇİFTLİĞİ	340.94	
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	4328.61	
		ÇETİNOĞLU BEŞİCİLİK	122.71	
		EMİN BEŞİ ÇİFTLİĞİ	296.53	
		ERCIYES BEŞİ ÇİFTLİĞİ	227.82	
		ERCIYES TAVUKÇULUK	2326.93	
		GENÇ SEYİTOĞLU-1 BEŞİ ÇİFTLİĞİ	366.24	
		GÜRBÜZ BEŞİCİLİK	400.44	
		İHSAN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	133.47	
		KAYALAR BEŞİ ÇİFTLİĞİ	431.04	
		KAYSERİ YEM (BİRLİK YUMURTA)	6555.76	
		M. KUDBETTİN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	252.96	
		MEHMET BELLEK BEŞİ ÇİFTLİĞİ	275.61	
		RY BEŞİ ÇİFTLİĞİ	557.70	
		SİTE TARIM BEŞİ ÇİFTLİĞİ	344.70	
		YEŞİLBAŞ BEŞİ ÇİFTLİĞİ	627.67	
		TOTAL₂₀₂₀	21935.35	
		2021		
		ADEM SEYİTOĞLU BEŞİ ÇİFTLİĞİ	221.52	
		ADMAR BEŞİ ÇİFTLİĞİ	200.19	
		AHMET SEYİTOĞLU BEŞİ ÇİFTLİĞİ	213.51	
		AL ATEŞ BEŞİ ÇİFTLİĞİ	4443.52	
		ASLAN BEŞİ ÇİFTLİĞİ	89.24	
		ATALAY BEŞİ ÇİFTLİĞİ	354.31	
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	5121.96	
		ÇETİNOĞLU BEŞİCİLİK	156.73	
		EMİN BEŞİ ÇİFTLİĞİ	357.51	
		ERCIYES BEŞİ ÇİFTLİĞİ	310.72	
		ERCIYES TAVUKÇULUK	2398.95	
		GENÇ SEYİTOĞLU-1 BEŞİ ÇİFTLİĞİ	434.91	
		GÜRBÜZ BEŞİCİLİK	494.99	

		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	191.80	
		KAYALAR BESİ ÇİFTLİĞİ	485.29	
		KAYSERİ YEM (BİRLİK YUMURTA)	7723.61	
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	355.05	
		MEHMET BELLEK BESİ ÇİFTLİĞİ	335.10	
		RY BESİ ÇİFTLİĞİ	410.45	
		SİTE TARIM BESİ ÇİFTLİĞİ	391.97	
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	851.88	
		TOTAL₂₀₂₁	25543.20	
		2022		
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	104.74	
		ADMAR BESİ ÇİFTLİĞİ	169.84	
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	74.55	
		AL ATEŞ BESİ ÇİFTLİĞİ	2389.21	
		ASLAN BESİ ÇİFTLİĞİ	137.52	
		ATALAY BESİ ÇİFTLİĞİ	108.84	
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	2715.55	
		ÇETİNOĞLU BESİCİLİK	71.87	
		EMİN BESİ ÇİFTLİĞİ	167.81	
		ERCİYES BESİ ÇİFTLİĞİ	137.41	
		ERCİYES TAVUKÇULUK	1493.09	
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	194.02	
		GÜRBÜZ BESİCİLİK	234.18	
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	74.10	
		KAYALAR BESİ ÇİFTLİĞİ	238.17	
		KAYSERİ YEM (BİRLİK YUMURTA)	4111.49	
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	148.63	
		MEHMET BELLEK BESİ ÇİFTLİĞİ	147.35	
		RY BESİ ÇİFTLİĞİ	312.67	
		SİTE TARIM BESİ ÇİFTLİĞİ	196.71	
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	354.52	

			TOTAL ₂₀₂₂	13,582.26		
			TOTAL	68,696.89		
	Cross-check	Monitoring surveys and interviews with the farm owners				
Conclusion	The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. All parameters were monitored and determined as per the registered monitoring plan. Referring to p.360, p.361, p.363 and p.364 of CDM VVS PA, v3.0, VVB confirms through video calls and telephonic interviews and from the document review, that the actual monitoring system complies with the registered monitoring plan. The substantiation of this conformity on information flow for these parameters including the values in the monitoring reports is reported in the above section.					
	This parameter was tracked during the project by using the weighbridge recordings data as well as the dry matter content measured on the facilities lab. The supporting documents regarding these data was provided by the PP, and upon checking them, the VVB confirms the $Q_{\text{manure,LT,y}}$ values. Besides, the calibration details of the weighbridge was provided by the PP as follows:					
	Instrument/Device	Manufacturer	Type	Serial Number	Date of Calibration	Calibration Standard
	Non-Automatic Weighbridge	TUNAYLAR	LOAD LINE	15943	31.05.2019	Turkish legislation titled 'The Weighing Instrument Regulations' ⁹
	Based on the review of the source and nature of available evidence and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.					

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report			
	Data / Parameter:	Q _y		
	Data unit:	Tonnes-wet basis/yr		
	Description:	Quantity of raw manure co-digested in the year y		
	Source of data used:	On site measurement, operational logbooks (weighbridge records)		
	Means of verification/Comments:	Farm Name	Q _y	
		2019		

		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	559	
		ADMAR BESİ ÇİFTLİĞİ	472	
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	417	
		AL ATEŞ BESİ ÇİFTLİĞİ	12,821	
		ASLAN BESİ ÇİFTLİĞİ	872	
		ATALAY BESİ ÇİFTLİĞİ	944	
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	14,489	
		ÇETİNOĞLU BESİCİLİK	414	
		EMİN BESİ ÇİFTLİĞİ	1,002	
		ERCİYES BESİ ÇİFTLİĞİ	820	
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	1,128	
		GÜRBÜZ BESİCİLİK	1,336	
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	389	
		KAYALAR BESİ ÇİFTLİĞİ	1,337	
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	781	
		MEHMET BELLEK BESİ ÇİFTLİĞİ	878	
		RY BESİ ÇİFTLİĞİ	1,747	
		SİTE TARIM BESİ ÇİFTLİĞİ	1,169	

		YEŞİLBAŞ BESI ÇİFTLİĞİ	2,044
		TOTAL ₂₀₁₉	43,619
		2020	
		ADEM SEYİTOĞLU BESI ÇİFTLİĞİ	976
		ADMAR BESI ÇİFTLİĞİ	842
		AHMET SEYİTOĞLU BESI ÇİFTLİĞİ	750
		AL ATEŞ BESI ÇİFTLİĞİ	22,895
		ASLAN BESI ÇİFTLİĞİ	1,499
		ATALAY BESI ÇİFTLİĞİ	1,765
		BAŞYAZICIOĞLU BESI ÇİFTLİĞİ	24,398
		ÇETİNOĞLU BESİCİLİK	725
		EMİN BESI ÇİFTLİĞİ	1,789
		ERCIYES BESI ÇİFTLİĞİ	1,407
		GENÇ SEYİTOĞLU-1 BESI ÇİFTLİĞİ	2,016
		GÜRBÜZ BESİCİLİK	2,235
		İHSAN SEYİTOĞLU BESI ÇİFTLİĞİ	728
		KAYALAR BESI ÇİFTLİĞİ	2,364
		KAYSERİ YEM (BİRLİK YUMURTA)	35,246

		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	1,395
		MEHMET BELLEK BESİ ÇİFTLİĞİ	1,504
		RY BESİ ÇİFTLİĞİ	3,120
		SİTE TARIM BESİ ÇİFTLİĞİ	2,007
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	3,651
		ERCİYES TAVUKÇULUK	9,885
		TOTAL ₂₀₂₀	121,197
		2021	
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	1,205
		ADMAR BESİ ÇİFTLİĞİ	1,106
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	1,190
		AL ATEŞ BESİ ÇİFTLİĞİ	27,026
		ASLAN BESİ ÇİFTLİĞİ	1,104
		ATALAY BESİ ÇİFTLİĞİ	1,835
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	28,802
		ÇETİNOĞLU BESİCİLİK	926
		EMİN BESİ ÇİFTLİĞİ	2,158
		ERCİYES BESİ ÇİFTLİĞİ	1,920

		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	2,394
		GÜRBÜZ BESİCİLİK	2,764
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	1,050
		KAYALAR BESİ ÇİFTLİĞİ	2,664
		KAYSERİ YEM (BİRLİK YUMURTA)	42,418
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	1,958
		MEHMET BELLEK BESİ ÇİFTLİĞİ	1,827
		RY BESİ ÇİFTLİĞİ	2,293
		SİTE TARIM BESİ ÇİFTLİĞİ	2,280
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	4,960
		ERCİYES TAVUKÇULUK	10,681
		TOTAL ₂₀₂₁	142,561
		2022	
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	587
		ADMAR BESİ ÇİFTLİĞİ	985
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	426
		AL ATEŞ BESİ ÇİFTLİĞİ	13,401
		ASLAN BESİ ÇİFTLİĞİ	840

		ATALAY BEŞİ ÇİFTLİĞİ	1,024	
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	14,368	
		ÇETİNOĞLU BEŞİCİLİK	408	
		EMİN BEŞİ ÇİFTLİĞİ	998	
		ERCİYES BEŞİ ÇİFTLİĞİ	843	
		GENÇ SEYİTOĞLU-1 BEŞİ ÇİFTLİĞİ	1,204	
		GÜRBÜZ BEŞİCİLİK	1,301	
		İHSAN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	419	
		KAYALAR BEŞİ ÇİFTLİĞİ	1,379	
		KAYSERİ YEM (BİRLİK YUMURTA)	23,154	
		M. KUDBETTİN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	850	
		MEHMET BELLEK BEŞİ ÇİFTLİĞİ	842	
		RY BEŞİ ÇİFTLİĞİ	1,830	
		SİTE TARIM BEŞİ ÇİFTLİĞİ	1,162	
		YEŞİLBAŞ BEŞİ ÇİFTLİĞİ	2,096	
		ERCİYES TAVUKÇULUK	6,458	
		TOTAL ₂₀₂₂	74,575	
		TOTAL	382,952	
		Cross-check	Monitoring surveys and interviews with the farm owners	

Conclusion	The weighbridge that's calibration details have been provided in the Appendix-1 of the monitoring report, as well as in the box above, was used to continuously track the amount of manure supplied to the project site by the farms. The PP provided the logbook regarding the weighbridge records and the values were confirmed by the VVB. Besides, the VVB has also checked the monitoring surveys and conducted telephonic interview with the farm owners. Based on the review of the source and nature of available evidence and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.
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Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report				
	Data / Parameter:	SVS _{j,LT,y}			
	Data unit:	tonnes VS/tonnes-dm			
	Description:	Specific volatile solids content of animal manure from livestock type LT and animal manure management system j in year y			
	Source of data used:	Project proponents, Lab logbook records			
	Means of verification/Comments:		Farm Name	Type of Livestock (L)	SVS _{LT,y} (tonnes VS /tonnes-dm)
			2019		
ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ			Other Cattle	70.38%	
ADMAR BESİ ÇİFTLİĞİ			Other Cattle	74.42%	
AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ			Other Cattle	72.27%	
AL ATEŞ BESİ ÇİFTLİĞİ			Other Cattle	73.15%	
ASLAN BESİ ÇİFTLİĞİ			Other Cattle	74.12%	

		ATALAY BEŞİ ÇİFTLİĞİ	Other Cattle	73.12%
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	72.72%
		ÇETİNOĞLU BEŞİCİLİK	Other Cattle	71.87%
		EMİN BEŞİ ÇİFTLİĞİ	Other Cattle	72.95%
		ERCIYES BEŞİ ÇİFTLİĞİ	Other Cattle	72.32%
		GENÇ SEYİTOĞLU-1 BEŞİ ÇİFTLİĞİ	Other Cattle	74.87%
		GÜRBÜZ BEŞİCİLİK	Other Cattle	75.25%
		İHSAN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	72.22%
		KAYALAR BEŞİ ÇİFTLİĞİ	Other Cattle	74.87%
		M. KUDBETTİN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	73.23%
		MEHMET BELLEK BEŞİ ÇİFTLİĞİ	Other Cattle	72.18%
		RY BEŞİ ÇİFTLİĞİ	Other Cattle	72.63%
		SİTE TARIM BEŞİ ÇİFTLİĞİ	Other Cattle	72.52%
		YEŞİLBAŞ BEŞİ ÇİFTLİĞİ	Other Cattle	74.20%
		2020		
		ADEM SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	66.24%

		ADMAR BEŞİ ÇİFTLİĞİ	Other Cattle	74.86%
		AHMET SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	66.25%
		AL ATEŞ BEŞİ ÇİFTLİĞİ	Other Cattle	73.83%
		ASLAN BEŞİ ÇİFTLİĞİ	Other Cattle	73.08%
		ATALAY BEŞİ ÇİFTLİĞİ	Other Cattle	73.64%
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	72.16%
		ÇETİNOĞLU BEŞİCİLİK	Other Cattle	72.66%
		EMİN BEŞİ ÇİFTLİĞİ	Other Cattle	74.98%
		ERCİYES BEŞİ ÇİFTLİĞİ	Other Cattle	72.25%
		GENÇ SEYİTOĞLU-1 BEŞİ ÇİFTLİĞİ	Other Cattle	74.19%
		GÜRBÜZ BEŞİCİLİK	Other Cattle	74.19%
		İHSAN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	73.00%
		KAYALAR BEŞİ ÇİFTLİĞİ	Other Cattle	74.85%
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	81.39%
		M. KUDBETTİN SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	72.61%

		MEHMET BELLEK BEŞİ ÇİFTLİĞİ	Other Cattle	73.74%	
		RY BEŞİ ÇİFTLİĞİ	Other Cattle	73.45%	
		SİTE TARIM BEŞİ ÇİFTLİĞİ	Other Cattle	72.70%	
		YEŞİLBAŞ BEŞİ ÇİFTLİĞİ	Other Cattle	73.31%	
		ERCIYES TAVUKÇULUK	Hens	83.53%	
		2021			
		ADEM SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	71.69%	
		ADMAR BEŞİ ÇİFTLİĞİ	Other Cattle	74.19%	
		AHMET SEYİTOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	70.51%	
		AL ATEŞ BEŞİ ÇİFTLİĞİ	Other Cattle	74.29%	
		ASLAN BEŞİ ÇİFTLİĞİ	Other Cattle	73.94%	
		ATALAY BEŞİ ÇİFTLİĞİ	Other Cattle	71.83%	
		BAŞYAZICIOĞLU BEŞİ ÇİFTLİĞİ	Other Cattle	71.64%	
		ÇETİNOĞLU BEŞİCİLİK	Other Cattle	71.82%	
		EMİN BEŞİ ÇİFTLİĞİ	Other Cattle	75.56%	
		ERCIYES BEŞİ ÇİFTLİĞİ	Other Cattle	73.80%	

		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	77.25%
		GÜRBÜZ BESİCİLİK	Other Cattle	71.42%
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	74.58%
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	74.97%
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	83.44%
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	73.66%
		MEHMET BELLEK BESİ ÇİFTLİĞİ	Other Cattle	72.23%
		RY BESİ ÇİFTLİĞİ	Other Cattle	75.44%
		SİTE TARIM BESİ ÇİFTLİĞİ	Other Cattle	71.99%
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	Other Cattle	74.47%
		ERCİYES TAVUKÇULUK	Hens	82.71%
		2022		
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	72.18%
		ADMAR BESİ ÇİFTLİĞİ	Other Cattle	73.76%
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	72.17%

		AL ATEŞ BESİ ÇİFTLİĞİ	Other Cattle	73.29%
		ASLAN BESİ ÇİFTLİĞİ	Other Cattle	72.25%
		ATALAY BESİ ÇİFTLİĞİ	Other Cattle	71.49%
		BAŞYAZICIOĞ LU BESİ ÇİFTLİĞİ	Other Cattle	71.56%
		ÇETİNOĞLU BESİCİLİK	Other Cattle	73.14%
		EMİN BESİ ÇİFTLİĞİ	Other Cattle	73.13%
		ERCİYES BESİ ÇİFTLİĞİ	Other Cattle	73.43%
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	73.12%
		GÜRBÜZ BESİCİLİK	Other Cattle	72.04%
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	72.32%
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	73.18%
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	72.93%
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	82.88%
		MEHMET BELLEK BESİ ÇİFTLİĞİ	Other Cattle	73.25%
		RY BESİ ÇİFTLİĞİ	Other Cattle	73.42%

		SİTE TARIM BESİ ÇİFTLİĞİ	Other Cattle	73.92%	
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	Other Cattle	73.86%	
		ERCİYES TAVUKÇULUK	Hens	82.21%	
	Cross-check	Latest photographs of the lab equipment and interview with the lab staff.			
Conclusion	The parameter $SVS_{LT,y}$ is required to be determined as per Annex 2: ‘Method for determination for Volatile Solids in animal waste’ and Annex 4: ‘Guidance on sample extraction and statistical procedures’ of the approved baseline and monitoring CDM methodology of AM0073. In line with this requirement the PP has provided the lab logbook records and a detailed calculation sheet as evidence. Furthermore, the VVB has conducted interviews with the laboratory staff about the analysis and calculation procedure. Upon checking the provided monitoring data, the calculation sheet and the conducted interviews, VVB confirms that the applied analysis method is in line with the Methodology. The verification team also confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.				

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report				
	Data Parameter:	CT _y			
	Data unit:	tonnes/truck			
	Description:	Average truck capacity for transportation			
	Source of data used:	On site measurement / vehicle licenses			
	Means of verification/Comments:	Monitoring Period	CT _y (tonnes/truck)		
		(30.07.2019 - 31.12.2019)	15		
		(01.01.2020 - 31.12.2020)	15		
		(01.01.2021 - 31.12.2021)	15		
		(01.01.2022 - 31.07.2022)	15		

	Cross-check	Values are cross-checked with the recordings of the net capacity of the trucks at weighbridge readings and found conservative.	
Conclusion	The PP has consulted vehicle licenses of the special trucks supplying manure to the project, and considered a conservative (low) capacity for the truck. Upon inspecting the provided vehicle licenses, as well as the cross-checked net capacity readings of the weighbridge recordings for trucks, the VVB confirmed the validity of this value. The verification team confirms that the monitoring methods applied for this parameter is in line with the registered MR and quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.		

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report				
	Data / Parameter:	DAF _w			
	Data unit:	km/truck			
	Description:	Average incremental distance for manure transportation			
	Source of data used:	Project proponent measurements of distance			
	Means of verification/Comments:		Monitoring Period	DAF _w	
			(30.07.2019 - 31.12.2019)	7.8	
		(01.01.2020 - 31.12.2020)	9.3		
		(01.01.2021 - 31.12.2021)	9.3		
		(01.01.2022 - 31.07.2022)	9.3		
Cross-check	Google maps				
Conclusion	The geographical coordinates provided by the PP has been checked through google maps. VVB has also carried out telephonic interviews with the farm owners to verify the given locations.				
	The verification team confirms that the monitoring methods applied for this parameter is in line with the registered MR and quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.				

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.			
	Data / Parameter:	EG _{PJ,y}		
	Data unit:	MWh/yr		
	Description:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y		
	Source of data used:	Electricity meter recordings		
	Means of verification/Comments:	Monitoring Period	EG _{PJ,y} (MWh/yr)	
		(30.07.2019 - 31.12.2019)	466	
		(01.01.2020 - 31.12.2020)	8,793	
		(01.01.2021 - 31.12.2021)	10,541	
		(01.01.2022 - 31.07.2022)	4,077	
TOTAL		23,877		
Cross-check	The electricity meter recordings are cross checked with the bills issued to EPIAŞ.			
Conclusion	Initially VVB has confirmed the compliance with the calibration frequency requirements for measuring instruments: As per the registered monitoring report, following the Turkish legislation titled ‘The Measurement and Measuring Instrument Regulations, ¹⁰ ’ the meters are calibrated and tested periodically by the designated authority and the same has been considered for this MP and confirmed by cross-checking the calibration records. The details of the calibration of electricity meters are given below:			
	Name:		Electricity meter – Main	
	Type:		Landis + Gyr E550	
	Accuracy Class:		0.5S	
	Series Number:		42595919	
	Calibration Date:		27.06.2019	
	Calibration Standard:		The Measurement and Measuring Instrument Regulations’	
	Name:		Electricity meter – Back-up	

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<https://www.mevzuat.gov.tr/anasayfa/MevzuatFihristDetayIframe?MevzuatTur=7&MevzuatNo=6381&MevzuatTertip=5#:~:text=Naklimetre%20ve%20hububat%20muayene%20aletlerinin,ve%20Ayar%20Te%C5%9Fkilat%C4%B1%20taraf%C4%B1ndan%20yap%C4%B1l%C4%B1r> (Accessed on 30/01/2023)

	Type:	Landis + Gyr E550
	Accuracy Class:	0.5S
	Series Number:	42595975
	Calibration Date:	27.06.2019
	Calibration Standard:	The Measurement and Measuring Instrument Regulations'
The recordings of the electricity meter has been kept on a logbook and provided to the VVB in time of verification. These recordings has been also cross-verified by the sale invoices submitted to EPIAŞ as well as the EPIAŞ Transparency Platform. The verification team confirms that the monitoring methods applied for this parameter is in line with the registered MR and quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.		

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report		
	Data / Parameter:	EC _{PJ,i,y}	
	Data unit:	MWh/yr	
	Description:	Quantity of electricity consumed by the project electricity consumption source the national grid in year y	
	Source of data used:	Bill issued by regional electricity distribution company named KEPSAŞ	
	Means of verification/Comments:	The following values have been monitored:	
		Monitoring Period	EC _{PJ,y} (MWh/yr)
(30/07/2019 – 31/12/2019)		98	
(01/01/2020 – 31/12/2020)		595	
(01/01/2021 – 31/12/2021)		723	
(01/01/2022 – 31/07/2022)		451	
TOTAL		1,867	
The verification team has checked the energy bills raised by PP.			

	Cross-check	Electricity Sales invoices submitted to KEPSAŞ	
Conclusion	The electricity meters, whose details have been provided in the EG_{PJ,y} box above are also valid for EC_{PJ,y}, as these metering devices are bi-directional. The verification team has confirmed that electricity consumption of the project, besides the auxiliary consumption, is solely based on the grid by checking the daily readings and electricity sales invoices submitted to regional electricity distributor named KEPSAŞ. The VVB has also conducted interviews with the project staff on the topic and confirmed the monitoring method of this parameter. As a result of these, the VVB confirms that the monitoring method is in line with the MR monitoring plan and the applied tool.		

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.	
	Data Parameter:	TDL _{j,y}
	Data unit:	Fraction
	Description:	Average technical transmission and distribution losses for providing electricity to source j in year y
	Source of data used:	Published data by Turkish Electricity Transmission Corporation (TEİAŞ) ¹¹
	Means of verification/Comments:	Value Monitored: 0.11
	Cross-check	-
Conclusion	According to the applied tool baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0), TDL _{j,y} parameter shall be chosen based on the type of outsourced electricity. Since this project uses electricity from the grid on a regular basis, it falls under Scenario A as was stated by PP in the MR. VVB has checked the published data by Turkish Electricity Transmission Corporation (TEİAŞ) that is provided by the PP for the parameter. Upon checking the supporting document, VVB verifies that the value reported in MR is in line.	
	Based on the review of the source and nature of available evidence and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.	

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report	
	<table><tr><td>Data / Parameter:</td><td>Q_{CH4,y}</td></tr></table>	Data / Parameter:
Data / Parameter:	Q _{CH4,y}	

¹¹ <https://webapi.teias.gov.tr/file/512cbf1d-0ca3-4492-b901-3722c7b682f7?download> (Accessed on 30/01/2023)

	Data unit:	t CH ₄		
	Description:	Quantity of methane produced in the anaerobic digester in year y		
	Source of data used:	Flow meter readings		
	Means of verification/Comments:	Monitoring Period	Q _{CH₄,y}	
		(30.07.2019 - 31.12.2019)	772	
		(01.01.2020 - 31.12.2020)	2,240	
		(01.01.2021 - 31.12.2021)	2,331	
		(01.01.2022 - 31.07.2022)	1,150	
TOTAL		6,493		
Cross-check	Flow meter and the gas analyser data exported from the SCADA software and recorded to the operational log book is for cross verification.			
Conclusion	PP has calculated Q _{CH₄,y} parameter based on the measured data by using the below equation; $Q_{CH_4} = Q_{biogas,y} * w_{CH_4} * \rho_{CH_4,t}$ Which is in line with the applied Tool 14: Project and leakage emissions from anaerobic digesters and applied Methodology AMS-III.D. Amount of biogas collected at the digesters (Q _{biogas,y}) was measured by the flow meter installed at the combined outlet line of the anaerobic digesters, which was confirmed via site inspections. Flow meters' monitored data was automatically saved in the SCADA system and exported by the staff monthly. PP has provided these data as a supporting document in the excel sheet. Similarly, the gas analyser yielding the methane fraction of the biogas (w _{CH₄,y}) was also present in the same line with the flowmeter, and those data were monitored in the same way. As per the registered monitoring plan, following the Turkish legislation titled 'The Measurement and Measuring Instrument Regulations, ¹² ' the flow meter and the gas analyser are calibrated and tested periodically by the manufacturer. Details of the			

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<https://www.mevzuat.gov.tr/anayasa/MevzuatFihristDetayIframe?MevzuatTur=7&MevzuatNo=6381&MevzuatTertip=5#:~:text=Naklimetre%20ve%20hububat%20muayene%20aletlerinin,ve%20Ayar%20Te%C5%9Fkilat%C4%B1%20taraf%C4%B1ndan%20yap%C4%B1l%C4%B1r> (Accessed on 30/01/2023)

	flow meters calibrations as described in the MR was checked and verified by the VVB. Related calibration details are provided below:	
	Gas flow meter:	
	Name:	Biogas Flow Meter
	Type:	Prosonic Flow B 200 HART
	Accuracy Class:	$\leq \pm 0.2\%$
	Series Number:	N803BA02000
	Calibration Date:	24.10.2018
	Calibration Standard:	The Measurement and Measuring Instrument Regulations'
	Gas analyser:	
	Name:	Gas Analyser – Biogas / Methane – Four ports
	Type:	AwifLEX Cool+
	Accuracy Class:	$\leq \pm 0.2\%$
	Series Number:	2546
	Calibration Date:	11.10.2018
	Calibration Standard:	'The Measurement and Measuring Instrument Regulations'
	Upon checking the calibration details and confirming them also via observing the tags of the instruments present in the plant, VVB has verified this parameter was monitored accurately. The operational logbook records have been also investigated and found accurate.	

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.	
	Data Parameter:	MCF _j
	Data unit:	Fraction
	Description:	Annual methane conversion factor (MCF) for the baseline animal manure management system j
	Source of data used:	Obtained from 2019 Refinement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2019), Volume 4, Chapter 10, Table 10.17 (Updated), page 67 ¹³

¹³ https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf (Accessed on 30/01/2023)

	Means of verification/Comments:	Values Monitored for the project location, Kayseri province in Turkey, during the current monitoring period;				
		Meteorological Data ¹⁴	2019	2020	2021	2022
		Mean annual temperature, °C	11.8	11.95	11.45	9.9
		Mean annual precipitation (MAP), mm	32.45	34.86	34.74	45.37
		Potential Evapotranspiration (PET), mm	118.94	150.21	92.85	134.48
	Cross-check	-				
Conclusion	The MCF _j parameter is dependent on the mean annual temperature, mean annual precipitation, and potential evapotranspiration. The PP has provided the related data taken from the nearest local meteorological centre stating that the mean annual temperature for this project is 11.28 °C, mean annual precipitation is 36.86 mm, and potential evapotranspiration is 124.12 mm which led to the warm temperature dry climate zone. According to this data, VVB confirmed that the project is located in a Warm Temperature Dry Climate Zone in accordance with the Chapter 3 of Volume 5 of 2019 Refinement to the 2006 IPCC Guidelines.					
	Based on the review of the source and nature of available evidence and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v3.0.					

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.					
	Data / Parameter:	DM				
	Data unit:	%				
	Description:	Residue remaining after water is removed from waste material by evaporation; dry matter				
	Source of data used:	Lab logbook records				

¹⁴ These meteorological data obtained from the nearest meteorology center to the project location by the project proponents during the current monitoring period.

	Means of verification/Comments:	Farm Name	Type of Livestock (L)	DM %
		2019		
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.70
		ADMAR BESİ ÇİFTLİĞİ	Other Cattle	18.80
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.18
		AL ATEŞ BESİ ÇİFTLİĞİ	Other Cattle	16.70
		ASLAN BESİ ÇİFTLİĞİ	Other Cattle	8.43
		ATALAY BESİ ÇİFTLİĞİ	Other Cattle	19.43
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.03
		ÇETİNOĞLU BESİCİLİK	Other Cattle	17.25
		EMİN BESİ ÇİFTLİĞİ	Other Cattle	16.98
		ERCİYES BESİ ÇİFTLİĞİ	Other Cattle	16.58
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	18.58
		GÜRBÜZ BESİCİLİK	Other Cattle	18.25
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	19.00
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	18.48

		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.48	
		MEHMET BELLEK BESİ ÇİFTLİĞİ	Other Cattle	19.07	
		RY BESİ ÇİFTLİĞİ	Other Cattle	18.42	
		SİTE TARIM BESİ ÇİFTLİĞİ	Other Cattle	17.53	
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	Other Cattle	17.88	
		2020			
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.37	
		ADMAR BESİ ÇİFTLİĞİ	Other Cattle	18.11	
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.93	
		AL ATEŞ BESİ ÇİFTLİĞİ	Other Cattle	16.42	
		ASLAN BESİ ÇİFTLİĞİ	Other Cattle	8.10	
		ATALAY BESİ ÇİFTLİĞİ	Other Cattle	19.32	
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.74	
		ÇETİNOĞLU BESİCİLİK	Other Cattle	16.93	
		EMİN BESİ ÇİFTLİĞİ	Other Cattle	16.58	
		ERCİYES BESİ ÇİFTLİĞİ	Other Cattle	16.19	
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	18.17	

		GÜRBÜZ BESİCİLİK	Other Cattle	17.92	
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.33	
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	18.23	
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	18.60	
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.13	
		MEHMET BELLEK BESİ ÇİFTLİĞİ	Other Cattle	18.33	
		RY BESİ ÇİFTLİĞİ	Other Cattle	17.88	
		SİTE TARIM BESİ ÇİFTLİĞİ	Other Cattle	17.18	
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	Other Cattle	17.19	
		ERCİYES TAVUKÇULUK	Hens	23.54	
		2021			
		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.38	
		ADMAR BESİ ÇİFTLİĞİ	Other Cattle	18.10	
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.94	
		AL ATEŞ BESİ ÇİFTLİĞİ	Other Cattle	16.44	
		ASLAN BESİ ÇİFTLİĞİ	Other Cattle	8.08	
		ATALAY BESİ ÇİFTLİĞİ	Other Cattle	19.31	

		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.78
		ÇETİNOĞLU BESİCİLİK	Other Cattle	16.93
		EMİN BESİ ÇİFTLİĞİ	Other Cattle	16.57
		ERCİYES BESİ ÇİFTLİĞİ	Other Cattle	16.18
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	18.17
		GÜRBÜZ BESİCİLİK	Other Cattle	17.91
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.27
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	18.22
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	18.21
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.13
		MEHMET BELLEK BESİ ÇİFTLİĞİ	Other Cattle	18.34
		RY BESİ ÇİFTLİĞİ	Other Cattle	17.90
		SİTE TARIM BESİ ÇİFTLİĞİ	Other Cattle	17.19
		YEŞİLBAŞ BESİ ÇİFTLİĞİ	Other Cattle	17.18
		ERCİYES TAVUKÇULUK	Hens	22.46
2022				

		ADEM SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.84	
		ADMAR BESİ ÇİFTLİĞİ	Other Cattle	17.24	
		AHMET SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.50	
		AL ATEŞ BESİ ÇİFTLİĞİ	Other Cattle	17.83	
		ASLAN BESİ ÇİFTLİĞİ	Other Cattle	16.37	
		ATALAY BESİ ÇİFTLİĞİ	Other Cattle	10.63	
		BAŞYAZICIOĞLU BESİ ÇİFTLİĞİ	Other Cattle	18.90	
		ÇETİNOĞLU BESİCİLİK	Other Cattle	17.61	
		EMİN BESİ ÇİFTLİĞİ	Other Cattle	16.81	
		ERCİYES BESİ ÇİFTLİĞİ	Other Cattle	16.30	
		GENÇ SEYİTOĞLU-1 BESİ ÇİFTLİĞİ	Other Cattle	16.11	
		GÜRBÜZ BESİCİLİK	Other Cattle	18.00	
		İHSAN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.69	
		KAYALAR BESİ ÇİFTLİĞİ	Other Cattle	17.27	
		KAYSERİ YEM (BİRLİK YUMURTA)	Hens	17.76	
		M. KUDBETTİN SEYİTOĞLU BESİ ÇİFTLİĞİ	Other Cattle	17.49	

		MEHMET BELLEK BEŞİ ÇİFTLİĞİ	Other Cattle	17.50	
		RY BEŞİ ÇİFTLİĞİ	Other Cattle	17.09	
		SİTE TARIM BEŞİ ÇİFTLİĞİ	Other Cattle	16.93	
		YEŞİLBAŞ BEŞİ ÇİFTLİĞİ	Other Cattle	16.91	
		ERCİYES TAVUKÇULUK	Hens	23.12	
		Cross-check	-		
Conclusion	The VVB has verified that this parameter has been measured accurately with the device dedicated to analyse the moisture, hence the dry matter (DM (%)=1-moisture content (%)). Besides checking the provided invoice and data sheet of the device named Shimadzu UniBloc MOC63u moisture analyser, the VVB has also conducted an interview with the lab personnel to ensure the measuring method was carried out accurately. Consequently, the lab records providing the DM has been carefully checked and confirmed.				

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.					
	Data Parameter:	BG _{burnt,y} = Q _{biogas,y}				
	Data unit:	m ³				
	Description:	Biogas flared or combusted in year y				
	Source of data used:	Flow meter readings				
	Means of verification/Comments:	Year	2019	2020	2021	2022
		BG _{burnt,y}	2,134,421	5,749,637	5,911,903	3,248,431
Cross-check	-					
Conclusion	As per the applied Methodology AMS-III.D, this parameter is equal to amount of biogas recovered / collected at the digesters if biogas flared and utilized are not continuously monitored separately. As recovered biogas is only utilized for electricity generation under normal operating conditions, flared and utilized biogas are not monitored separately. Thus, this parameter is also equal to the amount of biogas captured (Q _{biogas,y}) which was disclosed by the PP adequately. The volume of biogas combusted in the gas engines has been monitored by the biogas flowmeter type Proline Prosonic Flow B 200 Hart, which was installed at the combined outlet line of the anaerobic digesters. Since, this parameter is utilized for					

	the calculation of $Q_{CH_4,y}$, the calibration details provided for the parameter $Q_{CH_4,y}$ is also valid for this parameter. The hourly flowrates were then aggregated to find monthly and yearly values, as it was inspected in the logbook records provided as a supporting document. Upon checking the calibration details and confirming them also via observing the tags of the instruments present in the plant, VVB has verified this parameter was monitored accurately.
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Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.																									
	Data Parameter:	W _{CH4,y}																								
	Data unit:	Volume fraction																								
	Description:	Methane content in biogas in the year y																								
	Source of data used:	Operational Logbook Records																								
	Means of verification/Comments:																									
		<table><tr><td>Period</td><td>W_{CH4,y}</td></tr><tr><td>July, 2019</td><td>0.54</td></tr><tr><td>August, 2019</td><td>0.54</td></tr><tr><td>September, 2019</td><td>0.54</td></tr><tr><td>October, 2019</td><td>0.54</td></tr><tr><td>November, 2019</td><td>0.53</td></tr><tr><td>December, 2019</td><td>0.54</td></tr><tr><td>Average (30/07/2019 – 31/12/2019)</td><td>0.54</td></tr><tr><td>January, 2020</td><td>0.56</td></tr><tr><td>February, 2020</td><td>0.57</td></tr><tr><td>March, 2020</td><td>0.57</td></tr><tr><td>April, 2020</td><td>0.60</td></tr></table>	Period	W _{CH4,y}	July, 2019	0.54	August, 2019	0.54	September, 2019	0.54	October, 2019	0.54	November, 2019	0.53	December, 2019	0.54	Average (30/07/2019 – 31/12/2019)	0.54	January, 2020	0.56	February, 2020	0.57	March, 2020	0.57	April, 2020	0.60
Period	W _{CH4,y}																									
July, 2019	0.54																									
August, 2019	0.54																									
September, 2019	0.54																									
October, 2019	0.54																									
November, 2019	0.53																									
December, 2019	0.54																									
Average (30/07/2019 – 31/12/2019)	0.54																									
January, 2020	0.56																									
February, 2020	0.57																									
March, 2020	0.57																									
April, 2020	0.60																									

		May, 2020	0.59		
		June, 2020	0.59		
		July, 2020	0.58		
		August, 2020	0.60		
		September, 2020	0.59		
		October, 2020	0.58		
		November, 2020	0.58		
		December, 2020	0.57		
		Average (01/01/2020 – 31/12/2020)	0.58		
		January, 2021	0.58		
		February, 2021	0.60		
		March, 2021	0.61		
		April, 2021	0.60		
		May, 2021	0.58		
		June, 2021	0.62		
		July, 2021	0.60		
		August, 2021	0.59		
		September, 2021	0.58		
		October, 2021	0.60		
		November, 2021	0.58		
		December, 2021	0.57		

			Average (01/01/2021 – 31/12/2021)	0.59												
			January, 2022	0.54												
			February, 2022	0.54												
			March, 2022	0.52												
			April, 2022	0.54												
			May, 2022	0.53												
			June, 2022	0.54												
			July, 2022	0.52												
			Average (01/01/2022 – 31/07/2022)	0.53												
			Cross-check	-												
Conclusion	The volume fraction of methane in the biogas produced by the anaerobic digesters has been monitored by the gas analyser type Awiflex Cool+, which was installed at the combined outlet line of the anaerobic digesters.															
	As per the registered monitoring plan, following the Turkish legislation titled ‘The Measurement and Measuring Instrument Regulations, ¹⁵ ’ the gas analyser is calibrated and tested periodically by the manufacturer. Details of the gas analyser calibration as described in the MR was checked and verified by the VVB. Following are the calibration details: Gas analyser: <table><tr><td>Name:</td><td>Gas Analyser – Biogas / Methane – Four ports</td></tr><tr><td>Type:</td><td>Awiflex Cool+</td></tr><tr><td>Accuracy Class:</td><td>≤ +/- 0.2%</td></tr><tr><td>Series Number:</td><td>2546</td></tr><tr><td>Calibration Date:</td><td>11.10.2018</td></tr><tr><td>Calibration Standard:</td><td>‘The Measurement and Measuring Instrument Regulations’</td></tr></table>					Name:	Gas Analyser – Biogas / Methane – Four ports	Type:	Awiflex Cool+	Accuracy Class:	≤ +/- 0.2%	Series Number:	2546	Calibration Date:	11.10.2018	Calibration Standard:
Name:	Gas Analyser – Biogas / Methane – Four ports															
Type:	Awiflex Cool+															
Accuracy Class:	≤ +/- 0.2%															
Series Number:	2546															
Calibration Date:	11.10.2018															
Calibration Standard:	‘The Measurement and Measuring Instrument Regulations’															

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<https://www.mevzuat.gov.tr/anasayfa/MevzuatFihristDetayIframe?MevzuatTur=7&MevzuatNo=6381&MevzuatTertip=5#:~:text=Naklimetre%20ve%20hububat%20muayene%20aletlerinin,ve%20Ayar%20Te%C5%9Fkilat%C4%B1%20taraf%C4%B1ndan%20yap%C4%B1l%C4%B1r> (Accessed on 30/01/2023)

	Upon checking the calibration details and conducting site visit VVB has verified this parameter was monitored adequately and as per the monitoring plan demonstrated in the registered PD. The operational logbook records have been also checked and found in order. The daily volume fractions of methane were then aggregated to find monthly and yearly values, as it was inspected in the logbook records provided as a supporting document.
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Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.	
	Data Parameter:	FE
	Data unit:	%
	Description:	Flare efficiency in the year y
	Source of data used:	Applied Methodology AMS-III.D: Methane Recovery in Animal Manure Management Systems, V21.0
	Means of verification/Comments:	90%
	Cross-check	-
Conclusion	The VVB confirms that as no flaring activity took place during monitoring period, and the recovered biogas was combusted for electricity generation, as per the applied methodology of AMS-III.D., methane destruction efficiency was considered as 90% (or 0.90 as fraction). Thus, VVB has checked and confirmed that the value of FE parameter used in the MDy calculations has been appropriate in accordance with the requirements of the applied methodology of AMS-III.D, version 21.0 and the applied methodological tool of project emissions from flaring, version 04.0.	

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.			
	<table> <tr> <td>Data Parameter:</td><td>$\eta_{flare,m}$</td></tr> <tr> <td>Data unit:</td><td>%</td></tr> </table>	Data Parameter:	$\eta_{flare,m}$	Data unit:
Data Parameter:	$\eta_{flare,m}$			
Data unit:	%			

	Description:	The flare efficiency	
	Source of data used:	Project emissions from flaring, version 04.0	
	Means of verification/Comments:	0%	
	Cross-check	-	
Conclusion	The VVB confirms that flare efficiency is determined in line with the applied Tool "Project emission from flaring" version 04.0. As no flaring activity took place during monitoring period, flare efficiency shall be considered as 0% as per para. 22 of the applied Tool.		

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.	
	Data Parameter:	Flame _m
	Data unit:	Flame on or Flame off
	Description:	Flame detection of flare in the minute m
	Source of data used:	Operational Logbook Records
	Means of verification/Comments:	0%
	Cross-check	-
Conclusion	VVB has checked the operational logbooks records and confirms that no flaring activity took place during monitoring period. Hence, no record of this data was taken.	

Means of verification	Referring to VCS Standard v4.4 and p.360, p.361, p.363, and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring report.	
	Data Parameter:	T _{EG,m}
	Data unit:	°C
	Description:	Temperature in the exhaust gas of the enclosed flare in the minute m
	Source of data used:	Operational Logbook records
	Means of verification/Comments:	-
	Cross-check	-
Conclusion	VVB has checked the operational logbooks records and confirms that no flaring activity took place during monitoring period. Hence, no record of this data was taken.	

Emissions trading programs and other binding limits:

The assessment team confirms that the Net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions in any Emission Trading program or other binding limits. Further, the declaration in the effect of the same has been submitted by the project proponent to the audit team and found to be correct.

The project has not been registered under any other GHG and/or Renewable/Green Energy programs. Also, the Project is not rejected by other GHG programs. A declaration for the same is checked and found correct by the assessment team. Also, the assessment team checked the following registries to confirm the same. The details of the registries checked are as follows:

1. <http://cdm.unfccc.int/>
2. <http://www.goldstandard.org/>
3. <https://verra.org/>
4. <https://www.globalcarboncouncil.com>
5. <https://www.irecstandard.org>
6. <https://biocarbonregistry.com/en/>
7. <https://ji.unfccc.int/index.html>
8. <https://carbonregistry.com/>

The Project has no intend to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program.

Thus, it is concluded that the project activity not involved on other Emissions trading programs and other binding limits.

Sustainable Development:

The contributions of the project to SDG has been checked and it was verified that the project implemented the SDG's that are described in the MR. The SDG's and how they are monitored are briefly described in the following:

- SDG 7 Affordable & Clean Energy,

The VVB has verified that the project contributes to SDG 7 by providing a total of 23,877 MWe of electrical energy to the Turkish national grid and it has been verified through the generation data.

- SDG 8 Decent Work & Economic Growth,

The project created 15 permanent jobs and provided trainings regarding occupational health and safety. This was verified upon checking the project's personal affairs' official records that are submitted to the governmental offices, together with the company's official social security and training records.

- SDG 13 Climate Action,

The project contributes to this goal by generating GHG emission reductions, which is in total 188,525 tCO₂eq during this monitoring period. It was ensured that the applied Meth is followed accurately in the ER calculation. The PP calculated this value to be slightly higher than the ER claimed for the monitoring period being 168,813; since the 60kton/year cap of the AMS-III.D. component was not applied for SDG 13 to realize the actual emission reductions the project creates. The VVB finds the reasoning valid.

- SDG 17 Partnerships for The Goals.

The project established partnerships with the Turkish state under the Public-Private Partnership-based (PPP) Renewable Energy Support Scheme (YEKDEM). Besides the contractual agreement, the electricity bills and the records on the electricity meters are also cross-checked to verify this goal.

A separate SDG Contribution Report prepared by CS Climate Solutions Danışmanlık A.Ş. on 12.09.2022. The report will be uploaded to the project's Verra Registry Project Setup Page.

Conclusion: In view of the assessment of MR and supporting documents as listed in Appendix 1 of this report, the validation team is able to confirm that the project implementation status provided in the MR of the BYZ Global Energy Biogas Plant provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Consequently, the assessment team confirms that the project implementation status provided in the MR to be complete and accurate. The MR complies with the relevant forms and guidance for completing the VCS MR.

4.2 Safeguards

4.2.1 No Net Harm

The Environmental Impact Assessment (EIA) Report approved and issued by the Ministry of Environment, Urbanization and Climate Change in Turkey on 27.09.2018 has been checked and verified. It is within knowledge of the VVB that the Turkish laws and regulations state that the EIA's approval is only made if a project subjected to the approval does not make any negative environmental and socio-economic impacts. Thus, the received EIA approval by the Ministry of Environment, Urbanization and Climate Change in Turkey for the project constitutes as evidence of no net harm.

4.2.2 Local Stakeholder Consultation

Due to the COVID-19 pandemic the project owner conducted an online local stakeholder consultation meeting on 21.01.2022. Before the stakeholder consultation meeting, the project information with contact information and the stakeholder meeting notices were published in the local newspaper Gazete Kayseri. Also, a personal invitation letter was given to the local govt. officials.

After explaining the importance of the continuous input and grievance mechanism to the audience and clearly stating that their voices would always be heard at every single phase of the project via this mechanism. VVB has also cross verified the scan copy of grievance register and found no comments are received during the current monitoring period.

4.3 AFOLU-Specific Safeguards

Not applicable since the project is not an AFOLU project.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The assessment of data and the calculation of baseline emission reduction in the MR and the ER excel sheet have been verified as per the following set of supporting documents: 1. Logbook records 2. Monitoring surveys 3. Latest photographs & videos 4. Farm owners' records 5. VER spreadsheets 6. Sales Invoices (as per PPA)
Conclusion	Upon checking the supporting documents and the submitted MR, the verification team confirms that; - PP has provided all required data for the calculations. - The cross-check data is provided for respective parameters so that the verification of calculations is enabled.

	- Applied formulae and method for calculation of baseline emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology. - Reference and default values used for baseline GHG emission calculations were correctly applied. - The calculations related to baseline GHG emissions were reproducible and correct.
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Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the project activity. The following documents were taken into consideration for the verification of project GHG emissions; 1. Logbook records 2. Bills raised for fuel and electricity consumption 3. VER spreadsheets 4. Sales Invoices
Conclusion	Upon checking the supporting documents and the submitted MR, the verification team confirms that; - PP has provided all required data for the calculations. - The cross-check data is provided for respective parameters so that the verification of calculations is enabled. - The official records such as bills and invoices supports the data used in GHG calculations. - Applied formulae and method for calculation of project emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology. - Reference and default values used for baseline GHG emission calculations were correctly applied. - The calculations related to project GHG emissions were reproducible and correct.

Calculation of leakage GHG emissions

N/A. Leakage emissions are not applicable according to the registered VCS PD. As the storage of digestate occurs within the project boundary, in line with the applied tool "Project and leakage emissions from anaerobic digesters", Version 02.0; the PP accounted for the leakages arising from the storage of digestate in the project emissions.

Based on the document review, site inspections, and interviews, VVB confirms that project has been implemented as described in the registered project description document.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Baseline Emissions

Calculation of Baseline Emissions as per AMS-III.D.

To calculate the baseline emissions, the project proponents proposed to utilize the Option 17(b) presented in the AMS-III.D., version 21.0., Paragraph 17. This is because the project proponent was aware of the existing animal manure management systems i.e, anaerobic lagoon and the IPCC guidelines were utilized for determining the manure characteristics. Moreover, the PP's laboratory and plant facilities enable to accurately monitor the parameters $Q_{manurej,LT,y}$ and $SVS_{j,LT,y}$ used in the equation given below.

The baseline emissions for the manure received from the other animal farms shall be calculated using the Option Para 17(b) as follows: As per AMS III.D., version 21.0., baseline emissions are determined as follows:

Equation (1)

$$BE_y = GWP_{CH_4} \times D_{CH_4} \times UF_b \times \sum_{j,LT} (MCF_j \times B_{0,LT} \times Q_{manurej,LT,y} \times SVS_{j,LT,y})$$

2019	2020	2021	2022	Symbol	Unit	Description
28	28	28	28	GWP_{CH_4}	t CO ₂ e / t CH ₄	Global Warming Potential for CH ₄ - Default value obtained from IPCC Fifth Assessment Report, Synthesis Report, page 87 https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf
0.00067	0.00067	0.00067	0.00067	D_{CH_4}	t/m ³	Density of Methane - 0.00067 t/m ³ at room temperature 20 °C and 1 atm pressure
0.94	0.94	0.94	0.94	UF_b	Fraction	Conservativeness factor for MCF as per the Applied Meth.
0.76	0.76	0.76	0.76	MCF_j	Fraction	Annual methane conversion factor (MCF) for the baseline animal manure management system j

						(Uncovered Anaerobic Lagoon) - Project site is Warm Temperate Dry
0.18	0.18	0.18	0.18	$B_{0, \text{Other Cattle}}$	$\text{m}^3\text{CH}_4/\text{kg-dm}$	Maximum methane producing potential of the volatile solid generated for animal type 'Other Cattle' - For Other Region - High Productivity System
0.39	0.39	0.39	0.39	$B_{0, \text{Hens}}$	$\text{m}^3\text{CH}_4/\text{kg-dm}$	Maximum methane producing potential of the volatile solid generated for animal type 'Hens' - For Other Region - High Productivity System
7,636.08	21,935.35	25,543.20	13,582.26	$Q_{\text{manure}, j, \text{LT}, y}$	tonnes/yr, dry basis	Quantity of manure treated from livestock type LT and animal manure management system j
13,465	61,043	71,285	36,100	BE_y	tCO ₂ e/yr	Baseline emissions in year y (t CO ₂ e)

Calculation of Baseline Emissions as per AMS-I.D.

The PP took into account the paragraph 22 of AMS-I.D, version 18., baseline emissions include only; CO₂ emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

Equation (2)

$$BE_y = BE_{EC, y} = EG_{PJ, y} \times EF_{grid, y}$$

Where:

BE_y = Total baseline emissions in year y (tCO₂)

$EG_{PJ, y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of VCS project activity in year y (MWh)

$EF_{grid,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO₂/MWh)

Since the proposed project activity is the installation of a greenfield power plant, as per the paragraph 26 of AMS-I.D, version 18., $EG_{PJ,y}$ is calculated as follows:

Equation (3)

$$EG_{PJ,y} = EG_{PJ,facility,y}$$

Where:

$EG_{PJ,facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

This value for each year is given as follows, please refer to the Section 4.1, for more information on the related box.

Parameter	2019 (MWh)	2020 (MWh)	2021 (MWh)	2022 (MWh)	TOTAL
$EG_{PJ,facility,y}$	466	8,793	10,541	4,077	23,877

The PP has calculated the emission factor $EF_{grid,y}$ in a transparent and conservative manner, as per the paragraph 23 of AMS-I.D, version 18. The project participants have chosen to calculate a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the emission factor for an electricity system”, version 07.0.

According to the Tool, the “combined margin” emission factor is calculated through the following six steps:

Step (1): Identify the relevant electricity system;

Step (2): Choose whether to include off-grid power plant in the project electricity system (optional);

Step (3): Select a method to determine the operating margin (OM);

Step (4): Calculate the operating margin emission factor according to the selected method;

Step (5): Calculate the build margin (BM) emission factor;

Step (6): Calculate the combined margin (CM) emission factor.

PP follows an ex-ante approach for the calculation of OM and BM values as per the registered PD as well as the published data by the Ministry of Energy and Natural Resources of Turkey which follows the applicable TOOL07, v07.0 for the calculation of CM emission factor. Consequently, the VVB confirms that the PP has applied the Tool accurately and based on the values provided for operating margin and build margin, which has been published by the Ministry of Energy and Natural Resources of Turkey, the combined margin is correctly determined and applied using the equation.

Equation (4)

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

	Applied Value
$EF_{grid,OM,y}$	0.6993
$EF_{grid,BM,y}$	0.3812
$EF_{grid,CM,y}$	0.5403

Where:

$EF_{grid,BM,y}$	= Build margin CO ₂ emission factor in year y (t CO ₂ /MWh)
$EF_{grid,OM,y}$	= Operating margin CO ₂ emission factor in year y (t CO ₂ /MWh)
$EF_{grid,CM,y}$	= Combined margin CO ₂ emission factor in year y (t CO ₂ /MWh)
w_{OM}	= Weighted of operating margin emissions factor (per cent)
w_{BM}	= Weighted of build margin emissions factor (per cent)

$$EF_{grid,CM,y} = 0.6993 \times 0.5 + 0.3812 \times 0.5 = 0.5403$$

Replacing the parameters to equation 2, the values for each monitoring period were determined as:

Parameter	Description	2019 (tCO ₂)	2020 (tCO ₂)	2021 (tCO ₂)	2022 (tCO ₂)	Total During the Current Monitoring Period (tCO ₂)
BE_{y,AMS-I.D.} = BE_{EC,y}	Baseline emissions for the AMS-I.D. component	252	4,751	5,695	2,203	12,901

Accordingly, the PP determined the total baseline emissions including both the AMS-III.D. and AMS-I.D. components as follows:

Parameter	Description	2019 (tCO ₂)	2020 (tCO ₂)	2021 (tCO ₂)	2022 (tCO ₂)	Total During the Current Monitoring Period (tCO ₂)
<i>BE_y</i>	Total baseline emissions for the project	13,717	65,794	76,980	38,303	194,794

Project Emissions

Calculation of Project Emissions as per AMS-III.D.

In accordance with AMS-III.D., version 21.0., Project activity emissions consist of:

Equation (5)

$$PE_y = PE_{PL,y} + PE_{flare,y} + PE_{power,y} + PE_{transp,y} + PE_{storage,y}$$

2019	2020	2021	2022	Total	Symbol	Unit	Description
670	2,132	2,284	1,185	6,271	PE_y	tCO ₂ e	Project emissions
605	1,756	1,828	902	5,091	$PE_{PL,y}$	tCO ₂ e	Emissions due to physical leakage of biogas in year y
0	0	0	0	0	$PE_{flare,y}$	tCO ₂ e	Emissions from flaring or combustion of biogas stream in the year y
59	357	434	271	1,121	$PE_{power,y}$	tCO ₂ e	Emissions from use of fossil fuel or electricity for the operation of the installed facilities in the year y
6	19	22	12	59	$PE_{transp,y}$	tCO ₂ e	Emissions from incremental transportation in the year y (), as per relevant paragraph in AMS-III.AO
0	0	0	0	0	$PE_{storage,y}$	tCO ₂ e	Emissions from the storage of manure

The PP has based the As per the paragraph 21(b) of AMS-III.D., version 21.0., project emissions due to physical leakage of biogas from the animal manure management systems used to produce, collect, and transport the biogas to the point of flaring or gainful use are determined as, in accordance with the paragraph 23 of the methodological tool “Project and leakage emissions from anaerobic digesters, version 02.0.:

Equation (6)

$$PE_{PL,y} = PE_{CH_4,y} = Q_{CH_4} \times EF_{CH_4,y} + GWP_{CH_4}$$

$$Q_{CH_4} = Q_{biogas,y} * W_{CH_4} * \rho_{CH_4,t}$$

2019	2020	2021	2022	TOTAL	Symbol	Unit	Description
605	1,756	1,828	902	5,091	$PE_{CH_4,y}$	tCO ₂ e	Project emissions of methane from the anaerobic digester in year y
2,134,421	5,749,637	5,911,903	3,248,431	17,044,392	$Q_{biogas,y}$	Nm ³ biogas	Amount of biogas collected at the digester outlet in year y
0.54	0.58	0.59	0.53	-	W_{CH_4}	fraction	Methane content in biogas in year y
772	2,240	2,331	1,150	6,493	$Q_{CH_4,y}$	tCH ₄	Quantity of methane produced in the anaerobic digester in year y
0.028	0.028	0.028	0.028		$EF_{CH_4, default}$	fraction	Default emission factor for the fraction of CH ₄ produced that leaks from the anaerobic digester
28	28	28	28		GWP_{CH_4}	tCO ₂ /tC H ₄	Global warming potential of CH ₄

As per the paragraph 23 of AMS-III.D., version 21.0., project emissions from electricity and fossil fuel consumption are determined by following the methodological tool “Project and leakage emissions from anaerobic digesters”, version 02.0., where $PE_{power,y}$ is the sum of $PE_{EC,y}$ and $PE_{FC,y}$ in the tool.

The PP has calculated $PE_{EC,y}$ using the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”, where the project emission source j referred to in the tool is the total electricity consumption associated with the anaerobic digestion facility. In calculating this, the PP assumed the electricity consumed at the plant supplied by the Turkish national grid.

In accordance with the Tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0. project emissions from consumption of electricity are calculated based on the quantity of electricity consumed, an emission factor for electricity generation and a factor to account for transmission losses, as follows:

Equation (7)

$$PE_{power,y} = PE_{EC,y} = \sum_j (EC_{PJ,j,y} \times EF_{EF,j,y} \times (1 + TDL_{j,y}))$$

2019	2020	2021	2022	TOTAL	Symbo l	Unit	Description
59	357	434	271	1,121	$PE_{EC,y}$	t CO ₂ / yr	Project emissions from electricity consumption in year y
98.04	595.154	723.028	451.263	1,867.485	$EC_{PJ,j,y}$	MWh/y	Quantity of electricity consumed by the project electricity consumption source j in year y
0.5403	0.5403	0.5403	0.5403		$EF_{EF,j,y}$	t CO ₂ /MWh	Emission factor for electricity generation for source j in year y
0.11	0.11	0.11	0.11		$TDL_{j,y}$	Fraction	Average technical transmission and distribution losses for providing electricity to source j in year y

the emissions from flaring the biogas shall be determined following the procedure described in the Methodological Tool Project Emissions from Flaring, version 03.0 using the equation below. In the proposed project activity, an enclosed flare is installed. The flare is installed for the case of emergency and malfunction in the plant.

The PP has nevertheless set up the monitoring plan of the facility to ensure the measurement of the quantity of captured methane fed to the flare. This monitoring plan involves the use of the flow meter and valves located on flare and gas engine lines for controlling the gas flow in case of emergencies. The SCADA system records data on the operation of these equipment. If such measurement is positive,

the emissions from flaring the biogas shall be determined following the procedure described in the Methodological Tool Project Emissions from Flaring, version 03.0.

For the case of $PE_{storage,y}$, the paragraph 24 of AMS-III.D., version 21.0., states that project emissions on account of storage of manure before being fed into the anaerobic digester shall be accounted for if both condition (a) and condition (b) below are satisfied:

- (a) The storage time of the manure after removal from the animal barns, including transportation, exceeds 24 hours before being fed into the anaerobic digester;
- (b) The dry matter content of the manure when removed from the animal barns is less than 20%.

As the project activity does not involve storing, and the storage time of the manure after removal from the animal barns, including transportation, does not exceed 24 hours before being fed into the anaerobic digester in the proposed project activity, $PE_{storage,y}$ has been rightfully accounted as zero by the PP.

The PP calculated $PE_{transp,y}$ as per the paragraph 14 of AMS-III.AO, version 01.0., that is in accordance with AMS-III.D., version 21.0. Here it is stated that the project emissions due to incremental transport distances ($PE_{transp,y}$) are calculated based on the incremental distances between:

Equation (9)

$$PE_{transp,y} = (Q_y / CT_y) \times DAF_w \times EF_{CO2,transport}$$

2019	2020	2021	2022	TOTAL	Symbol	Unit	Description
43,619	121,197	142,561	74,575	381,952	Q_y	tonnes	Quantity of raw waste/manure treated and/or wastewater co digested in the year y
15	15	15	15		CT_y	tonnes/ truck	Average truck capacity for transportation
7.8	9.3	9.3	9.3		DAF_w	km/truck	Average incremental distance for raw solid waste/manure and/or wastewater transportation

0.245	0.245	0.245	0.245		$EF_{CO_2,trans\ port}$	kgCO ₂ /km , (IPCC default values or local values may be used)	CO ₂ emission factor from fuel use due to transportation
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Accordingly, the PP calculated PE_{trans,y} values and rounded up as:

	2019	2020	2021	2022	TOTAL
PE _{trans,y}	6	19	22	12	59

Leakage

No leakage is accounted for in line with the applied Methodology.

Net GHG Emission Reductions and Removals

Type III Components

The methodology AMS-III.D. states in Section 4.6 that the emission reductions is achieved in any year is the lowest value of the following:

Equation (10)

$$ER_{y,ex\ post} = \min[(BE_{y,ex\ post} - PE_{y,ex\ post}), (MD_y - PE_{power,y,ex\ post})]$$

The first part of the equation $(BE_{y,ex\ post} - PE_{y,ex\ post})$ was calculated as:

Monitoring period	BE _{y, ex post} (tCO ₂ eq)	PE _{y,ex post} (tCO ₂ eq)	(BE _{y,ex post} – PE _{y,ex post}) (tCO ₂ eq)
30.07.2019 – 31.12.2019	13,465	670	12,795
01.01.2020 – 31.12.2020	61,043	2,132	58,911
01.01.2021 – 31.12.2021	71,285	2,284	69,001
01.01.2022 – 31.07.2022	36,100	1,185	34,915
Total	181,895	6,271	175,622

In the calculation of the second part of the equations right hand side, the parameter MD_y is used. The biogas flared or combusted (MD_y) is determined using the amount of biogas flared/combusted and the volumetric fraction of methane in the biogas as follows:

Equation (11)

$$MD_y = BG_{burnt,y} \times w_{CH_4} \times D_{CH_4} \times FE \times GWP_{CH_4}$$

Since the separate measurements of the respective flows are not performed in the project activity, the flare efficiency (FE) in this equation has been taken as 90% by the PP, based on the rationale of Paragraph 33 of AMS-III.D which states that “*Project activities where a portion of the biogas is destroyed through flaring and the other portion is used for energy may consider applying the flare efficiency to the portion of the biogas used for energy, if separate measurements of the respective flows are not performed. When the amount of methane that is combusted for energy and that is flared is separately monitored, or when only the biogas flow to the flare is monitored and the biogas used for energy is calculated based on electricity generation, a destruction efficiency of 100% can be used for the amount that is combusted for energy.*”

The value of flare efficiency (FE) has been determined as 90% as per Methodological Tool: Project emissions from flaring, version 04.0.

VVB has checked and confirmed that the value of FE parameter used in the MD_y calculations has been appropriate in accordance with the requirements of the applied methodology of AMS-III.D, version 21.0 and the applied methodological tool of project emissions from flaring, version 04.0.

Accordingly,

2019	2020	2021	2022	Total	Symbol	Unit	Description
19,460	56,450	58,742	28,986	163,639	MD_y	t C O 2 e	Methane captured or destroyed or used gainfully by the project activity in year y
2,134,421	5,749,637	5,911,903	3,248,431	17,044,392	$BG_{burnt,y}$	m ³	Biogas flared or combusted in year y
0.54	0.58	0.59	0.53		$w_{CH_4,y}$	Vol. fraction	Methane content in biogas in the year y

0.00067	0.00067	0.00067	0.00067		D_{CH_4}	t/m^3	Density of methane at normal (at room temperature 20°C and 1 atm pressure) conditions
0.90	0.90	0.90	0.90		FE	fraction	Flare efficiency in the year y
28	28	28	28		GWP_{CH_4}	tCO_2/tCH_4	Global warming potential of CH_4

VVB has cross-checked the values reported of methane captured and destroyed (parameter MD) each year in relation to the amount of electricity generated and the energy efficiency of the generator and verifies that the reported values are consistent with the generated electricity. VVB has checked the SCADA records and confirms that the project produced a total of 17,044,392 Nm^3 of biogas during the current monitoring period. The electricity meter readings were checked, and it is confirmed that the project generated 30,889 MWh of electricity, which is the sum of the electricity supplied to the Turkish national grid and the auxiliary consumption. Since no flare activity was detected during the current monitoring period checked with SCADA records, all biogas generated is burned in the gas engine to generate electricity. VVB has reviewed the technical datasheet of the gas engine (JMS 420 GS-N.L.) and is confirmed that the ratio between the total amount of captured methane and the electricity generated is 552 m^3 of biogas for every 1 MWh of electricity is in the technical specifications' gas consumption range of the gas engine which is between 531-577 Nm^3/MWh .

Accordingly,

$$17,044,392 \text{ Nm}^3 / 30,889 \text{ MWh} = 552 \text{ Nm}^3/\text{MWh}$$

Electrical efficiency for the monitoring period is calculated as 40.2% (assuming a 4,5 kWh/ Nm^3 LHV value as given in technical specification sheet of the gas engines and lower reported limit for biogas) as given below.

$$30,889,000 \text{ (kWh)} / 4,5 \text{ (kWh}/Nm^3) / 17,044,392 \text{ Nm}^3 = 40.2\%$$

Through the assessment, the VVB confirms that the electrical efficiency is within the provided technical range for that of gas engine. Hence, the reported values for generated biogas are found to be consistent with the electricity generated.

Monitoring Period	Total Methane Captured (Nm^3)	Electricity Supplied to the National Grid (MWh)	Auxiliary Consumption (MWh)	Total Electricity Generated (MWh)	Ratio (Nm^3/MWh)	Electrical Efficiency for the Monitoring Period	Technical Electrical Efficiency of the Gas Engine
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30.07.2019- 31.07.2022	17,044,392	23,877	7,012	30,889	552	40.2%	41.8-38.4%
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Following that, the $ER_{y,ex,post}$ was determined for the Type III Components by comparing $(MD_y - PE_{power, y, ex post})$ and $(BE_{y,ex post} - PE_{y,ex post})$, and taking the minimum for $ER_{y,ex,post}$:

	30.07.2 019 – 31.12.2 019	01.01.2 020 – 31.12.2 020	01.01.2 021 – 31.12.2 021	01.01.2 022 – 31.07.2 022	To tal
MD_y	19,460	56,450	58,742	28,986	163,639
PE_{power}	59	357	434	271	1,121
$(MD_y - PE_{power, y, ex post})$	19,401	56,093	58,308	28,715	162,518
$(BE_{y,ex post} - PE_{y,ex post})$	12,795	58,911	69,001	34,915	175,624
$ER_{y,ex,post}$	12,796	56,093	58,308	28,715	155,912

For the monitoring periods 30.07.2019 – 31.12.2019, and 01.01.2022 – 31.07.2022, the number of monitoring days is 155, and 212, respectively. Considering the annual cap of 60,000 tCO₂e defined by the methodology AMS-III.D. for all Type III components for 365 days, the cap corresponding to these monitoring periods are 25,479 tCO₂e and 34,849 tCO₂e, respectively. The $ER_{y,ex post}$ of for the current monitoring period are under the cap limit.

Type I Components

The ER of the Type I Components is calculated as per the methodology AMS-I.D.

Parameter	Description	2019 (tCO ₂)	2020 (tCO ₂)	2021 (tCO ₂)	2022 (tCO ₂)	Total During the Current Monitoring Period (tCO ₂)
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$BE_{y,AMS-I.D.}$	Baseline emissions for the AMS-I.D.	252	4,751	5,695	2,203	12,901
$PE_{y,AMS-I.D.}$	Project emissions for the AMS-I.D.	0	0	0	0	0
$ER_{y,AMS-I.D.}$	Emission reductions for AMS-I.D.	252	4,751	5,695	2,203	12,901

Final ER Value

The final value of the ER is calculated by adding up the Type III and I components.

	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
	13,717	670	-	13,047
	61,201	357	-	60,844
	64,437	434	-	64,003
	31,189	271	-	30,918
Total	170,544	1,732	-	168,813

The monitoring period covers from 30.07.2019 to 31.07.2022 with totally 1,098 days.

Based on the registered VCS PD, the amount of calculated emission reductions for this monitoring period would be **168,813** tCO₂e.

PP's adaptation of the Meth's provision on quantification of the project's net ERRs regarding the comparison of actual and calculated CH₄ is found conservative and in line with the applied Method to calculate net emission reductions and verification team found it conservative.

The VVB verifies that net GHG ER calculations are on the conservative side and complies with the applied Methodology.

Means of verification	The verification team has checked all the reported data, emission factors, and default values used for the net GHG emission reduction calculations and cross-checked where necessary as described in detail in Section 4.1 of this Verification Report. The verification team has also checked whether monitoring methods comply with the monitoring plan, No reporting risks have been identified for the data reported. Troubleshooting procedure, maintenance, and calibration of monitoring equipment, monitoring measurements and reporting, record handling and maintenance, reviewing monitored data are available at the plant. All the monitored data are archived electronically and in paper form. The data will be kept for the whole crediting period and five years after the last crediting period thereby meeting the requirement of the monitoring plan.
Conclusion	The formulae and the methods referred to in the MR and the emission reduction calculation spreadsheet comply with the methods described in the registered PDD. No lack of evidence and missing data were detected during this monitoring period. All values as per the monitoring plan were crosschecked by the verification team against basic monitored data and the GHG emission calculation is found to be correct and conservative. TUV SUD confirms that all assumptions, emission factors and default values have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report. Calculations applied formulae and method for calculation of GHG emission are in accordance with the registered monitoring plan and are in line with the requirements of VCS, the applied methodology and p. 372, p.373 of CDM VVS PA ver 3.0.

4.6 Non-Permanence Risk Analysis

There is no non-permanence risk rating determined by the project proponent.

5 VERIFICATION OPINION

Our verification approach was based on the requirements as defined under the applicable VCS standards and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered PD;
 - the monitoring plan in the registered PD is as per the applied Methodology;
 - the monitoring complies with the monitoring plan in the registered PD;
 - the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS and CDM requirements;
 - the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
 - the monitoring system is in place and generates GHG emission reductions data;
 - the GHG emission reductions are calculated without material misstatements.
- There is an audit trail that contains the evidence and records that validate the stated figures.

Based on the information we have seen and evaluated, we confirm that the BYZ GLOBAL Energy Biogas Plant activity achieved the verified number of reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the project activity.

Verification period: From 30.07.2019 to 31.07.2022 (start and end dates included)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
30-July-2019- 31-December-2019	13,717	670	-	13,047
01-January-2020- 31-	61,201	357	-	60,844

<u>December-2020</u>				
<u>01-January-2021– 31-December-2021</u>	64,437	434	-	64,003
<u>01-January-2022– 31-July-2022</u>	31,189	271	-	30,918
Total	170,544	1,732	-	168,813

PP has estimated ERs 61,243 tCO₂eq/y in the PD. The amount of estimated emission reductions for this monitoring period would be 168,813 tCO₂e. TUV-SUD confirmed that the ER calculations are conservative and correct, since Section 4.6 of the AMS-III.D. Meth. is correctly implemented.

APPENDIX 1: DOCUMENTS REVIEWED

No	Author	Document Title	References to the Document
1	Project Proponent (PP)	VCS PD for “BYZ GLOBAL Energy Biogas Plant” version 05.0	02.12.2021
2	PP	Emission Reduction Calculation Sheets, “ER Calculation Sheet_BYZ_Final” Version 4.0	20.06.2023
3	PP	VCS Monitoring Report for “BYZ GLOBAL Energy Biogas Plant” version 05.0	01.08.2023
4	UNFCCC/CDM	AMS-III.D. “Small-scale Methodology – Methane recovery in animal manure management systems”, Version 21.0	-
5	UNFCCC/CDM	AMS-I.D. “Small-scale Methodology – Grid connected renewable electricity generation”, Version 18.0	-
6	VERRA/VCS	VCS Standard, Version 4.4	30.01.2023
7	UNFCCC/CDM	Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion, version 03.0	-
8	UNFCCC/CDM	Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, Version 03.0	-
9	UNFCCC/CDM	Project emissions from flaring, version 04.0	-
10	UNFCCC/CDM	Project and leakage emissions from anaerobic digesters, Version 02.0	-
11	UNFCCC/CDM	Tool to calculate the emission factor for an electricity system, Version 07.0	-
12	UNFCCC/CDM	Tool to determine the remaining lifetime of equipment, Version 01	-

13	UNFCCC/CDM	Project and leakage emissions from biomass, Version 05.0	-
14	UNFCCC/CDM	Project and leakage emissions from road transportation of freight, Version 1	-
15	UNFCCC/CDM	Validation and Verification standard for project activities, version 03.0 of	-
16	IPCC	2006 IPCC guidelines for National Greenhouse Gas inventories, Volume 2	2006
17	IPCC	2019 Refinement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4	2019
18	IPCC	Fifth Assessment Report, Synthesis Report	2018
19	PP	Notarized Authorization Letter between Kuzey Global Enerji ve Gübre Anonim Şirketi and BYZ Global Enerji ve Gübre Üretimi Ticaret Sanayi Anonim Şirketi	08.06.2021
20	TÜV SÜD South Asia Pvt. Ltd.	VCS Validation Report for "BYZ Global Energy Biogas Plant" version 5.0	03.12.2021
21	Ministry of Energy and Natural Resources of Turkey	Provisional Acceptance to Generate Electricity	30.07.2019
22	Energy Market Regulatory Authority (EMRA), Turkey	Electricity Generation Licence	18.10.2018
23	Ministry of Environment, Urbanization and Climate Change, Turkey	Environmental Impact Assessment Approval	27.09.2018
24	PP	Central Coordinates of the Project	-
25	Turkish State Meteorological Service Directory	Mean Annual Temperature for the Project's Location, Kayseri, Turkey	-
26	Turkish State Meteorological Service Directory	Mean Annual Precipitation for the Project's Location, Kayseri, Turkey	-
27	Turkish State Meteorological Service Directory	Potential Evapotranspiration (PET) for the Project's Location, Kayseri, Turkey	-
28	BYZ GLOBAL ENERJİ BİYOGAZ TESİSİ FİZİBİLİTE RAPORU	Officially Approved Detailed Feasibility Report of BYZ Global Energy Biogas Plant	24.05.2018
29	Ministry of Energy and Natural Resources of Turkey	Emission Factor for the Turkish National Grid	2019

30	Turkish Electricity Transmission Corporation (TEİAŞ)	Average technical transmission and distribution losses	-
31	PP	Lab Log Book Records on SVS _{LT,y} Value	2019 – 2020 – 2021 – 2022
32	PP	Project Developer's Records on Animal Farms Supplying Manure to the Plant	2019 – 2020 – 2021 – 2022
33	PP	Monitoring Surveys Conducted with Animal Farm Owners	2019 – 2020 – 2021 – 2022
34	Farm Owners	Animal Farm Owners' Records on Their Farms	2019 – 2020 – 2021 – 2022
35	Manufacturer	Muffle Furnace: MagmaTherm MTP 1100 20 P PRIMARY 1100°C Kamara, Technical Specifications	-
36	Manufacturer	Dry air sterilizer: Nükleon NST Series, Technical Specifications	-
37	Manufacturer	OHAUS Balances and Scales Model PR224, Technical Specifications	-
38	PP	Log Book Records on the Incremental Distance for Manure Transportation	2019 – 2020 – 2021 – 2022
39	PP	Vehicle Licenses (stating the capacities of trucks used for transporting manure)	2019 – 2020 – 2021 – 2022
40	Manufacturer	Electricity meter: Class 0.5S – Landis + Gyr E550, Technical Specifications and Calibration Details	-
41	PP	Records on Electricity Meters	2019 – 2020 – 2021 – 2022
42	PP	Log Book Records on Weight Bridge	2019 – 2020 – 2021 – 2022
43	PP	Deed of Accession	04.02.2022
44	PP	Deed of Partial Release	03.02.2022
45	Turkish Official Gazette	<u>ÖLÇÜ VE ÖLÇÜ ALETLERİ MUAYENE YÖNETMELİĞİ (mevzuat.gov.tr)</u>	-
46	Turkish Official Gazette	<u>Mevzuat Bilgi Sistemi</u>	-
47	PP	Installation of Gas Engine	01.10.2018
48	PP	Installation of Weighbridge	31.05.2019
49	PP	Start-up of Anaerobic Digesters	mid-June 2019
50	Officially Designated Electricity Distribution Company (KCETAŞ)	Calibration test certificates for main and backup electricity meters	27.06.2019
51	Manufacturer (Endress+Hauser)	Calibration test certificates for biogas flow meter	24.10.2018

52	Manufacturer (Awite)	Calibration test certificates for gas analyser	11.10.2018
53	Manufacturer (Tunaylar)	Calibration test certificates for weighbridge	31.05.2019
54	PP	Photos of the plant site, animal farms, lagoons at farms	2019 – 2020 – 2021 – 2022
55	PP	GPS coordinates of animal farms supplying manure to the project	2019 – 2020 – 2021 – 2022
56	PP	Manure supply agreements with animal farms	2019 – 2020 – 2021 – 2022
57	PP	Monitoring Surveys	2019 – 2020 – 2021 – 2022

APPENDIX 2: FINDINGS IN THIS VERIFICATION

CL from this verification

CL ID	01	Section no.	MR	Date: 01/08/2022
Description of CL				
Project developer records for the Aug-21 is missing				
Project participant response				Date: 24/09/2022
Project developer logbook records submitted with the responses				
Documentation provided by project participant				
Logbook records for the month of Aug-21				
DOE assessment				Date: 25/10/2022
Requested documents are submitted and found to be inline. CL is closed				

CL ID	02	Section no.	4.2	Date: 01/08/2022
Description of CL				
Following documents need to be submitted for the verification:				
1. Calibration records of the meters 2. Photograph of the site 3. Grievance register 4. ERPA signed with buyer				
Project participant response				Date: 24/09/2022
The following documents are submitted herewith along with the revised set of documents:				
1. Calibration records of the meters 2. Photograph of the site 3. Grievance register 4. ERPA signed with buyer				
Documentation provided by project participant				
1. Calibration records of the meters 2. Photograph of the site 3. Grievance register 4. ERPA signed with buyer				
DOE assessment				Date: 25/10/2022
The PP has submitted the requested documents and found to be appropriate. CL# 2 is closed				

CL ID	03	Section no.	4.2	Date: 01/08/2022
Description of CL				
PP has to clarify how the Nda data is monitored and its reliability.				
Project participant response				Date: 24/09/2022

The Nda data is monitored through the farmer's records as well as the official records obtained from the District Agriculture Directorate. The relevant documents are provided and the monitoring equipment is further elaborated in the Section 3.2 of the MR.

Documentation provided by project participant

Revised MR
Official records from the District Agriculture Directorate

DOE assessment **Date:** 25/10/2022

The PP has submitted the requested documents and found to be appropriate. CL#03 is closed

CARs from this verification

CAR ID	01	Section no.	MR	Date: 01/08/2022
Description of CAR				
ER values are not consistent in the MR.				
Project participant response				Date: 24/09/2022
Values are corrected and made consistent				
Documentation provided by project participant				
Revised MR version 2.0				
DOE assessment				Date: 25/10/2022
ER values have been made consistent throughout the revised MR. #CAR 01 Closed				

CAR ID	02	Section no.	4.2	Date: 01/08/2022
Description of CAR				
Values for the electricity consumed by the plant does not match in the MR and ER				
Project participant response				Date: 24/09/2022
Values are corrected and made consistent				
Documentation provided by project participant				
Revised MR version 2.0 and ER sheet				
DOE assessment				Date: 25/10/2022
Electricity consumptions value has been made consistent in the MR and ER sheet by PP. #CAR 02 Closed				

CAR ID	03	Section no.	5.4	Date: 01/08/2022
Description of CAR				
In relation to the net GHG ER calculations:				
1. The methodology states that if the calculated CH ₄ emissions from the baseline are higher than the measured CH ₄ generated in the anaerobic digester in the project situation (this is calculated as product of biogas flow at the digester outlet and methane fraction in the biogas), then the latter shall be used to calculate the emissions reduction for claiming certified emissions reductions. It is noted that the PP has not addressed this provision. Necessary calculations shall be made and included in the MR.				
2. The related parameters (FV _{RG,h} and f _{v,CH₄,RG,h}) are missing in the MR				
Project participant response				Date: 24/09/2022
The MR is revised accordingly.				

Documentation provided by project participant	
Revised MR ER Sheet	
DOE assessment	Date: 25/10/2022
The revised MR is checked. The VVB confirmed that the ER calculations are adjusted in accordance with the provisions in the applied Methodology. CAR is closed	

CAR ID	04	Section no.	4.1&4.2	Date:	01/08/2022
Description of CAR					
The PP shall ensure that all parameters required by the methodology, both those fixed at validation and those required to be monitored are included in the MR.					
Project participant response					Date: 24/09/2022
Section 5.1 and 5.2 has been updated to include all parameters required by the methodology, both those fixed at validation and those required to be monitored					
Documentation provided by project participant					
Revised MR and revised ER.					
DOE assessment					Date: 25/10/2022
Revised MR has been received. #CAR is closed.					

FARs from this verification

FAR ID	01	Section no.	4.4	Date:	01/08/2022
Description of FAR					
The deed of partial release document made by Kuzey Global Enerji ve Gübre Anonim Şirketi and Bio Solutions Yenilenebilir Enerji ve Danışmanlık Hizmetleri Sanayi ve Ticaret Limited Şirketi on 03.02.2022 is submitted to the DOE. However, as per VCS regulations, the deed requires VERRA's official approval. Thus, the FAR will be closed when VERRA's approval on the Deed is provided.					
Project participant response					Date: 24/09/2022
Section 1.3 has been updated in the MR to include further information about the changes in project proponents involved in the project. Once the approval of VERRA on deed of partial release is received, it will be provided to TÜV SÜD.					
Documentation provided by project participant					
DOE assessment					Date:

FAR ID	02	Section no.	3.2	Date:	04/08/2023
Description of FAR					
Any changes in farms included in the project activity at the time of registration shall be assessed during every subsequent verification as it was done during this verification period and shall be reported as PD deviation by the PP.					
Project participant response					Date: 04/08/2023
Any changes in farms included in the project activity at the time of registration will be reported as PD deviation in the upcoming verification periods.					
Documentation provided by project participant					
DOE assessment					Date: