



Sustainable Development Verified Impact Standard

MUYUAN WJZ AWMS GHG MITIGATION PROJECT IN HENAN PROVINCE



Document Prepared by CTI Certification Co., Ltd

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Prepared By	<i>CTI Certification Co., Ltd</i>
Contact	<i>CTI Certification Co., Ltd</i> <i>F8-A CTI Building, No.4 LiuXianSan Road, Xin'an Street</i> <i>Bao'an District, Shen Zhen 518101, P. R. China</i> <i>Phone: +86-10-65580012</i> <i>https://www.cti-cert.org/</i> <i>Contact: Ms. Lin Shunrong</i> <i>Email: linshunrong@cti-cert.com</i>
Approved By	<i>Zhou Lu</i>
Work Carried Out By	<i>Lin Shunrong (TL& verifier)</i> <i>Lin Wu (TR)</i>

Client	<i>Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.</i>
Project Title	<i>Muyuan WJZ AWMS GHG Mitigation Project in Henan Province</i>
Project Location	<i>Nanyang City and Zhumadian City, Henan Province, P. R. China</i>

Summary

- *A brief description of the project*

The project activity developed in Nanyang City and Zhumadian City, Henan Province, P. R. China, install new animal waste management systems (AWMSs) by replace the current open anaerobic lagoons with 7 new closed anaerobic digesters to a group of 7 swine farms in project area, which will treat the manure and wastewater from the 7 swine farms to avoid methane emissions generated in the baseline uncovered anaerobic lagoons. The project activity involves implemented 7 sets of AWMSs in 7 existing swine farms involving 370,860 heads of market swine, 38,500 heads of breeding swine, it is estimated to produce 597,665 tons of manure and $3,287.1575 \times 10^4 \text{m}^3$ of biogas annually. The biogas produced is recovered and combusted for heat generation and used by swine farms, total heat production is estimated to be 657,340GJ. The project started operation on 15-July-2020 with the VCS Ref. No. 2876.

The Project contributes to the achievement of 4 of the 17 Sustainable Development Goals (SDG) of United Nations through the positive impacts generated by the project activity. Additionally, the project achieved 444,807 tCO₂e emissions reductions in the 1st monitoring period from 15-July-2020 to 31-March-2022, as SD VSta Labeled VCUs.

- *The purpose and scope of verification*

The objective of the verification was to conduct an independent assessment of the project in order to determine its compliance with the requirements of the SD VSta Program, including the appropriateness of the SD VSta claims, and the validated Project Description and to determine the accurateness of the SD VSta claims reported. The scope of the verification was the review of the sustainable development impacts generated by the project during the monitoring period, their contribution to the UN SDG and the benefits for people and prosperity and the benefits for the planet that they imply.

- *The verification period*

The verified period is from 15-July-2020 to 31-March-2022.

- *The method and criteria used for verification*

The verification was conducted using CTI Certification Co., Ltd (CTI) procedures in line with the requirements specified in the latest version of the SD VSta and applying auditing techniques. The verification is performed through a combination of document review, interviews and communications with relevant personnel and on-site inspections. The project was assessed in conformance to the criteria set by the SD VSta Program.

- *The number of findings raised during verification*

In the course of the verification, 7 Corrective Action Requests (CARs), 10 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

- *Any uncertainties associated with the verification*

There are no restrictions of uncertainty for verification.

- *Summary of the verification conclusion*

Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. has commissioned the CTI Certification Co., Ltd to carry out the 1st periodical verification of the project, "Muyuan WJZ AWMS GHG Mitigation Project in Henan Province" (VCS ID 2876) with regard to the relevant requirements of Sustainable Development Verified Impact Standard and the SD VSta Program Guide, without any qualification nor limitation, and that all claims made by the project, including its contribution to the SDG, associated SDG indicators and net impacts on People and Prosperity and on the Planet, are credible and appropriately substantiated with historical data and information.

The project achieved 444,807 tCO₂e emissions reductions in the 1st monitoring period from 15-July-2020 to 31-March-2022 which has been approved under VCS scheme can be issued as SD VSta Labeled VCUs.

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1 VERIFICATION PROCESS

1.1 Objective

Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. has commissioned the CTI Certification Co., Ltd to carry out the 1st periodical verification of the project, “Muyuan WJZ AWMS GHG Mitigation Project in Henan Province” (VCS ID 2876) with regard to the relevant requirements of Sustainable Development Verified Impact Standard and the SD VISTA Program Guide.

The objective of the verification was to conduct an independent assessment of the Project in order to determine its compliance with the requirements of the SD VISTA Program, including the appropriateness of the SD VISTA claims, and the validated Project Description and to determine the accurateness of the SD VISTA claims reported. The scope of the verification was the review of the sustainable development impacts generated by the project during the monitoring period, their contribution to the UN SDG and the benefits for people and prosperity and the benefits for the planet that they imply.

1.2 Scope and Criteria

Verification shall ensure that the reported sustainable development impacts generated by the project, their contribution to the UN Sustainable Development Goals (SDG), and the benefits for people and prosperity and the benefits for the planet that they imply, reported for the period from 15-July-2020 to 31-March-2022 are complete and accurate in accordance with the applicable SD VISTA criteria in order to be certified.

The scope of the verification is to verify that: (a) the actual monitoring system and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; (b) the sustainable development impacts generated by the project data and express a conclusion with a reasonable level of assurance about whether the reported sustainable development impacts generated by the project data are free from material misstatement; (c) the reported sustainable development impacts generated by the project data is sufficiently supported by evidence. With this aim, the audit assessed the implementation of the project, its management, the conditions of the stakeholders and the natural and ecosystem services, as well as the implementation of the monitoring plans.

The verification followed the criteria set by the SD VISTA Program. Specifically, by the documents:

- SD VISTA Program Guide, v1.0/30/,
- Sustainable Development Verified Impact Standard, v1.0/31/,
- SD VISTA Program Definitions, v1.0/29/.

1.3 Level of Assurance

The assessment was conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. The threshold for quantitative

materiality with respect to the aggregate of errors, omissions and misrepresentations, individually or in the aggregate, for any reported SD VISta claim and/or SD VISta assets was limited to 5 percent, as required by Criterion 5.2.3 of the SD VISta v1.0

All the versions of the verification report, before being submitted to the client, were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the CTI Certification Co., Ltd (CTI) procedures required. The technical review was performed by a technical reviewer qualified in accordance with CTI's qualification scheme.

1.4 Summary Description of the Project

The project is implemented by Muyuan Foods Co., Ltd. in Nanyang City and Zhumadian City, Henan Province, China, which aims to install new Animal Manure Management Systems by replace the current open anaerobic lagoons with 7 new closed anaerobic digesters to a group of 7 existing swine farms in Nanyang City and Zhumadian City, Henan Province, which will treat the manure and wastewater from the 7 swine farms to avoid methane emissions generated in the baseline uncovered anaerobic lagoons. An Animal Manure Management System (AWMS) has been installed in each swine farm respectively which treat the manure and wastewater from the 7 existing swine farms. The raw materials such as pig manure and wastewater are collected into waste collecting tanks and then be separated first by Solid-liquid separators. the solid are treated in aerobic composting system, and the organic fertilizers are produced. The liquid is treated through anaerobic digestion and the biogas generated during the treatment process is captured for heat generation. If there is surplus biogas, then the biogas would be flared through the flaring system. After anaerobic digestion, the sludge produced from anaerobic digestion is treated through aerobic composting together with the separated solid, the effluent is used for agricultural irrigation. The generated heat is used for daily operation of AWMSs and the swine farms. The project implemented 7 sets of AWMSs in 7 existing swine farms involving 370,860 heads of market swine, 38,500 heads of breeding swine. Live swine are kept for 180 days in the farms before shipment and are estimated to produce 597,665 tons of manure and $3,287.1575 \times 10^4 \text{m}^3$ of biogas annually. The biogas produced is recovered and combusted for heat generation and used for daily operation of AWMSs and the swine farms and the residual biogas (if any) will be flared, the total heat production is estimated to be annual 657,340GJ. For conservativeness, baseline emissions from heat generation are neglected. The sludge produced from anaerobic digestion are treated through aerobic composting together with the separated solid, the effluent is used for agriculture irrigation which has been confirmed by site inspection.

The project activity enables 7 existing swine farms to use new AWMSs instead of the open anaerobic lagoons in baseline scenario to achieve the harmlessness and ecological utilization of the swine manure, finally generate the electricity to swine farms, which has been verified by on-site inspection, and checking the related documentations, interview with the project implementer. The project is expected to avoid GHG emission of methane from anaerobic treatment of swine manure and wastewater through recovery and destruction of biogas.

The project includes 3 main project activities: (1) Biogas is captured for heat production; (2) Provide employment opportunity; (3) Organic fertilizer production.

The project activity generates GHG emission reductions by avoid GHG emission of methane from anaerobic treatment of swine manure and wastewater which has been verified by on-site inspection, and checking the related documentations, interview with the project implementer.

The aims of the project are to:

- Reduce GHG emissions from atmosphere by avoiding GHG emission of methane from anaerobic treatment of swine manure and wastewater;
- Provide clean heat energy by biogas generated during the treatment process;
- Contribute to the national recycling rate, tonnes of material recycled through produce organic fertilizers;
- Contribute to the local sustainable development by offer working opportunities for local population in the field of waste handling and recycling.

1.5 Audit Team Composition

Table 1-1 Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/Doc review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader (also verifier)	IR	LIN	Shunrong	CTI	☒	☒	☒	☒

Table 1-2 Technical reviewer and approver

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	LIN	Wu	CTI
2.	Approver	IR	ZHOU	Lu	CTI

1.6 Method and Criteria

The verification was performed through a combination of document review, interviews and communications with relevant personnel and on-site inspections. The project was assessed in

conformance to the criteria described in Section 1.2 of this report and the validated PD. As discussed in this report, findings were issued to ensure that the Monitoring Report (MR) was in full conformance with all requirements.

A project specific Verification Plan was developed to guide the auditing process to ensure efficiency and effectiveness. The purpose of the Verification Plan was to present a risk assessment for determining the nature and extent of Verification procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Verification Plan methodology was derived from all items in the verification process stated above. Any modifications applied to the Verification plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

Therefore verification of the monitoring results and the reported actual project contributions were measured for compliance against the following criteria:

- SD VISta Program Guide, v1.0/30/,
- Sustainable Development Verified Impact Standard, v1.0/31/,
- SD VISta Program Definitions, v1.0/29/,

The verification process derived from all items in the verification criteria stated above. Field audit techniques based on the project indicators, scope and best professional judgement of the verification team in order to meet a reasonable level of assurance. The verification method of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the SD VISta MR/1/
- A desk review of the SD VISta MR/1/ submitted by the client and additional supporting documents with the use of customised verification documents checklist
- Verification planning
- On-Site assessment
- Interviews with personnel of the project developer and representative of local stakeholders
- Draft verification reporting
- Resolution of Corrective Action Requests (CARs) and Clarification Requests (CLs)
- Final verification reporting
- Technical review
- Final approval of the verification.

CTI confirms that sufficient evidence was presented for the SD VISta claims achieved during the monitoring period and that there is a clear audit trail that contains the evidence and records that validate the stated contributions to the SDG since:

- Sufficient evidence available: the project proponent has provided the necessary evidence to support the claims stated in the MR.
- Nature of evidence: the data provided to the audit team were collected from reliable and traceable sources. They are detailed in the project documents and have been provided to the audit team and were checked during the onsite visit.
- Cross-checked evidence: Verification team cross-checked the collected information through an on-site inspection to the project area and interviews with relevant stakeholders.

Hence, CTI confirms that the stated SD VISta claims in the MR are correct and accurate.

1.7 Document Review

The SD VISta MR/1/ and supporting background documents related to the examination of the project details, implementation status, stakeholder engagement, monitoring of impacts and their monitoring results were reviewed. Documents review was conducted to ensure consistency with and identify any deviation from SD VISta program requirements. Desk review included an examination of the project details, monitored data and parameters, and quantification of SDG benefits.

Furthermore, the verification team used additional documentation by third parties like host party legislation, operation records, technical reports referring to the monitoring of SDG benefits or to the basic conditions and technical data.

The references used in the course of this verification are summarized in Appendix 3.

The verification was performed basing on the documents check and site inspection/measurements, refer to the section 3 of this report for the verification process detail and corresponding documents review.

1.8 Interviews

The objective of the interview process was to solicit important information from personnel related to project and relevant to the verification process. Onsite interviews and information discussions were conducted with representatives from project implementer/11/, Operation Staffs of the composting plant/12/, local officers/13/, local residents/14/, representatives from swine farms and local solid waste disposal site (SWDS)/15/, representatives from equipment providers/16/ and VCS consultant/17/. The interviews were performed by the verification team on-site (within the project area, in Nanyang City and Zhumadian City, Henan Province, P.R. China) and the following is a list of the main interviewees and subject.

No.	Interviewee			Date	Subject, Reference Number/ID	Team member
	Last name	First name	Affiliation			
1.	Lu /11/	Chang	Muyuan Foods Co., Ltd. Environmental department / Project Manager	12-January-2023~14-January-2023	Discussion on project financials, project design and implementation, Main equipment, Technical parameters, Baseline, Additionality, Project boundary, Monitoring plan, Monitoring devices, SDG impacts, ER calculation, Local legislation to biogas	Lin Shunrong
2.	Gong /12/	Haiyang	Wolong 2 nd farm/ AWMS operation staff	12-January-2023	Project implementation Treatment method Main equipment Biogas production Slurry General info of interviewee, name, gender, Age, Education, Location How to obtain this job? What is the main work? Training provided, Salary level, if satisfied	Lin Shunrong
3.	Wu	Yun	Junzhang 26 th farm/AWMS operation staff	12-January-2023		
4.	Zhao	Minghua	Zhengyang 4 th farm / AWMS operation staff	13-January-2023		
5.	Sun	Jinhang	Zhengyang 6 th farm /AWMS operation staff	13-January-2023		
6.	Yang	Guozhen	Zhengyang 9 th farm/AWMS operation staff	13-January-2023		
7.	Xu	Xixian	Zhengyang 1 st farm/ AWMS operation staff	14-January-2023		
8.	Wei	Qinghui	Zhengyang 13 th farm/AWMS operation staff	14-January-2023		
9.	Zhang /15/	Kechun	Wolong 2 nd farm/ Swine farm operation staff	12-January-2023	Scenario before the project started, Swine genetic source on-farm record keeping Feed supplier Swine weight Sale of Swine Living dates of Swine Daily stock of animals in the farm, discounting dead and discarded animals	Lin Shunrong
10.	Liu	Yan	Junzhang 26 th farm/Swine farm operation staff	12-January-2023		
11.	Kong	Linglian	Zhengyang 4 th farm / Swine farm operation staff	13-January-2023		
12.	Ma	Kaining	Zhengyang 6 th farm /Swine farm operation staff	13-January-2023		

13.	Gao	Wenxian	Zhengyang 9 th farm/Swine farm operation staff	13-January-2023		
14.	Xu	Hongtian	Zhengyang 1 st farm/ Swine farm operation staff	14-January-2023		
15.	Guo	Zhiming	Zhengyang 13 th farm/Swine farm operation staff	14-January-2023		
16.	Liu /14/	Mingkai	Local Stakeholders/ Residents	12-January-2023	Local Stakeholder Consultation issues, Local environment impact	Lin Shunrong
17.	Zhou	Zhifei		12-January-2023		
18.	Zhang	Zhizhong		12-January-2023		
19.	Wang	Zhi		12-January-2023		
20.	Liu	Xuefeng		13-January-2023		
21.	Wang	Qianqian		13-January-2023		
22.	Zhou	Zhou		13-January-2023		
23.	Fang	Qishan		13-January-2023		
24.	Liu	Guodong		13-January-2023		
25.	Zhu	Xiaoxuan		13-January-2023		
26.	Wu	Kai		14-January-2023		
27.	Ma	Zhi		14-January-2023		
28.	Zhou	Feifei		14-January-2023		
29.	Wang	Kai		14-January-2023		
30.	Zhao /13/	Tianbao	Local officer/Nanyang Ecological Environment Bureau	12-January-2023	Baseline Scenario Local Stakeholder Consultation issues, SDG impacts, Inputs, Grievances mechanism, Local legislation to swine and biogas	Lin Shunrong
31.	Zhang	Xiufeng	Local officer/Nanyang Bureau of Agriculture and Rural Affairs			
32.	Tu /16/	Shulan	Profit Carbon Environmental Energy Technology (Shanghai) Co.,	12-January-2023~14-January-2023	Ex-ante and monitoring parameters, SDVISta MR editable issues	Lin Shunrong

			Ltd./ Senior Manager			
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1.9 Site Inspections

The verification site inspection was conducted from 12-January-2023~14-January-2023. A ground inspection of the project was conducted during the site visit and the verification and VVB interviewed representatives as above sections listed.

During the site inspection, the project site was inspected and documents evidence were checked, details as following table,

Duration of on-site inspection: 12-January-2023~14-January-2023				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting Interview with PP, local officers, consultant representatives	Office in Muyuan Foods Co., Ltd. in Nanyang City, Henan Province, P. R. China	12-January-2023	Lin Shunrong
2	On-site inspection Interview with Operation Staffs of the AWMSs and representatives from each swine farm, local residents	Project Area in Nanyang City and Zhumadian City, Henan Province, P. R. China	12-January-2023~14-January-2023	Lin Shunrong
3	Documents check	Project Area in Nanyang City and Zhumadian City, Henan Province, P.R.China	14-January-2023	Lin Shunrong
4	Finding Summary	Project Area in Zhumadian City, Henan Province, P.R. China	14-January-2023	Lin Shunrong
5	Close Meeting	Project Area in Zhumadian City, Henan Province, P.R. China	14-January-2023	Lin Shunrong

1.10 Public Comments

The project sought the registration with the SD VISTA Program, according to SD VISTA requirements the Monitoring Report was submitted for public comment period. The project was allocated with VCS ID 2876. The public comment period for the SD VISTA MR started on 12-August-2022 and ended on 11-September-2022 (<https://registry.verra.org/app/projectDetail/VCS/2876>).

No comments were received during this period which has been verified by checking the dedicated website as above.

1.11 Resolution of Findings

Material discrepancies identified in the course of the verification are addressed either as CARs, CLs or FARs.

A Corrective Action Request (CAR) is established where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional SDG benefits;
- The SD VISta Standard Version 1.0 requirements have not been met;
- There is a risk that the SDG benefits cannot be monitored or calculated.

A Clarification Request (CL) will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A Forward Action Request (FAR) will be issued when certain issues related to project implementation should be reviewed during the next verification.

A detailed list of the CARs CLs and FAR raised and discussed in the course of this verification is included in Appendix 4 of this report.

In the course of the verification 7 Corrective Action Requests (CARs), 10 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

1.12 Forward Action Requests

No Forward Action Request was raised during the 1st verification process.

2 VALIDATION FINDINGS

2.1 Project Description Deviations

There are no deviations from the PD for this monitoring period. This is the first SD VISTA verification of the project, so there are no deviations from previous monitoring periods.

2.2 Grouped Projects

The project is not a grouped project.

3 VERIFICATION FINDINGS

3.1 Summary of SDG Contributions

The PP has reported the quantitative project contributions of 9 impacts during the monitoring period that contribute to the 4 SDG of United Nations. The audit team concludes that the project activities contribute to 4 UN SDGs under the SD Vista Standard and are aligned with the validated PD. As such, the 444,807 tCO₂e emissions reductions achieved during the monitoring period meet the requirements of SD VISta Labeled VCUs.

The following table summarizes the project's direct contribution to the SDG through the implementation of the project activities:

SDG	SDG Indicator	Project activity	Contribution during the verification period	VVB Assessment Methods
7	access to affordable, reliable, sustainable and modern energy for local residentsEnsure access to affordable, reliable, sustainable and modern energy for local residents	Biogas is captured for heat production	4,678.05*10 ⁴ m ³ of biogas is generated by the project for heat generation during this monitoring period.	Site inspection of project implementation, Checking the Daily operation record of each treatment plant/17/ and VCS Joint-Validation-Verification report/6/.
8	Provide decent work for local residents	Provide employment opportunity	The project generated full-time job opportunities for 14 persons including 7 females and 7 males during this monitoring period.	Site inspection of project implementation, Interview with employees, local residents and representatives from local government Checking the Labor Contracts/22/ and monthly payroll/23/

12	Reduce waste generation through resource utilization	Organic fertilizer production	115,215 tonnes organic fertilizer is generated during this monitoring period.	Site inspection of project implementation, Checking the daily operation record of each treatment plant/17/ and VCS Joint-Validation-Verification report/6/
13	Tones of greenhouse gas emissions avoided	Biogas is captured for heat production, Organic fertilizer production	The project has avoided methane emissions of greenhouse gases (GHG) of 444,807 tCO ₂ e during this monitoring period	Site inspection of project implementation, Checking the VCS Joint-PD-MR/5/ and Joint-validation-verification report/6/

The verification team verified the identified project impacts on people, their prosperity and the planet against the validated PD and assessed the claimed quantitative contributions based on the defined conditions prior to the project start, on the nature of the project activities and their goals, on the evidence provided throughout the MR, on the additional documents provided by the PP and on the information gathered during the site visit (observation of project activities and interviewed with representatives of stakeholders).

CTI is able to confirm that the impacts have been comprehensible identified and that all information presented regarding the estimated project contribution to the SDG, associated SDG indicators and the net impact is complete, credible, appropriately substantiated and in compliance with the SD VISta requirements.

CAR 01 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2 Project Design

3.2.1 Project Objectives

The project is located at Nanyang City and Zhumadian City, Henan Province, P. R. China which aims to install new Animal Manure Management Systems by replace the current open anaerobic lagoons with 7 new closed anaerobic digesters to a group of 7 existing swine farms in Nanyang City and Zhumadian City, Henan Province, which will treat the manure and wastewater from the 7 swine farms to avoid methane emissions generated in the baseline uncovered anaerobic lagoons. An Animal Manure Management System (AWMS) has been installed in each swine farm respectively which treat the manure and wastewater from the 7 existing swine farms. The raw materials such as pig manure and wastewater are collected into waste collecting tanks and then be separated first by Solid-liquid separators. the solid are

treated in aerobic composting system, and the organic fertilizers are produced. The liquid is treated through anaerobic digestion and the biogas generated during the treatment process is captured for heat generation. If there is surplus biogas, then the biogas would be flared through the flaring system. After anaerobic digestion, the sludge produced from anaerobic digestion is treated through aerobic composting together with the separated solid, the effluent is used for agricultural irrigation. The generated heat is used for daily operation of AWMSs and the swine farms. The project implemented 7 sets of AWMSs in 7 existing swine farms involving 370,860 heads of market swine, 38,500 heads of breeding swine. Live swine are kept for 180 days in the farms before shipment and are estimated to produce 597,665 tons of manure and $3,287.1575 \times 10^4 \text{m}^3$ of biogas annually. The biogas produced is recovered and combusted for heat generation and used for daily operation of AWMSs and the swine farms and the residual biogas (if any) will be flared, the total heat production is estimated to be annual 657,340GJ. For conservativeness, baseline emissions from heat generation are neglected. The sludge produced from anaerobic digestion are treated through aerobic composting together with the separated solid, the effluent is used for agriculture irrigation which has been confirmed by site inspection and checking the Project Evaluation Report (PER) of the project/8/ and daily operation record of each treatment plant/17/.

The project activity enables 7 existing swine farms to use new AWMSs instead of the open anaerobic lagoons in baseline scenario to achieve the harmlessness and ecological utilization of the swine manure, finally generate the electricity to swine farms, which has been verified by on-site inspection, and checking the related documentations, interview with the project implementer. The project is expected to avoid GHG emission of methane from anaerobic treatment of swine manure and wastewater through recovery and destruction of biogas.

Sustainable Development Objectives created from the project:

Via on-site inspection, checking the evidence provided as below and interview with the project implementer, CTI verified that the project contributes the sustainable development through the following aspects:

- Increase access to affordable, reliable, sustainable and modern energy for local residents (Goal 7 of UN SDG, Target 7.0) – verified by checking the daily operation record of each treatment plant/17/, CTI confirmed that $4,678.05 \times 10^4 \text{m}^3$ of biogas is generated by the project for heat generation during this monitoring period and since the project started operation, while in the baseline scenario, the animal manure waste was left to decay in uncovered open lagoon at the livestock farms and methane is emitted to the atmosphere directly without any recovery, so the renewable energy share in baseline is 0, thus the project avoid the methane emitted to the atmosphere and provide clean energy by utilizing biogas so that increase access to affordable, reliable, sustainable and modern energy for local residents, hence the contribution to this SDG has been confirmed.
- Increase decent work for local residents (Goal 8 of UN SDG, Target 8.0) – verified by site interview with employees including male and female and checking the Labor Contracts/22/ and monthly payroll/23/, CTI confirmed that the project created 14 job opportunities (7 females and 7 males) as workers during this monitoring period and since the project started operation, while in the baseline

scenario, there was no job opportunities created, thus the project increase decent work for local residents, hence the contribution to this SDG has been confirmed;

- Reduce waste generation through resource utilization (Goal 12 of UN SDG, Target 12.0) – verified by checking the daily operation record of each treatment plant/17/, CTI confirmed that 115,215 tonnes organic fertilizer is generated during this monitoring period and since the project started operation, while in the baseline scenario, the animal manure waste was left to decay in uncovered open lagoon at the livestock farms and no organic fertilizer was generated, thus the project reduce waste generation through resource utilization, hence the contribution to this SDG has been confirmed.
- Avoid tons of greenhouse gas emissions (Goal 13 of UN SDG, Target 13.0) – verified by checking the Emission Reduction Calculation sheet/2/ and registered VCS Joint-PD-MR/5/, CTI confirmed that The project has avoided methane emissions of greenhouse gases (GHG) of 444,807 tCO₂e during this monitoring period and since the project started operation by installs 7 sets of animal waste management system (AWMSs) to avoid methane emissions generated in the previous manure treatment process of uncovered anaerobic lagoon to avoid methane emissions generated in the baseline scenario, hence the contribution to this SDG has been confirmed.

In opinion of VVB, the PP has clearly defined the sustainable development objectives of the project, which are appropriate to the nature of the project, the project activities planned and the sustainable development context in which it is developed. The stated objectives align with the logic of the SDG in promoting people well-being, strengthening awareness and promoting local partnerships in a sustainable, just and non-discriminatory way.

CAR 02 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.2 Project Activities

The project is structured in 3 main activities, design to achieve the sustainable development goals mentioned above:

Project Activity	Technologies or measures employed	How to achieve the project's sustainable development objectives	VVB Assessment
Biogas is captured for heat production	Via site inspection and checking the VCS Joint-PD-MR, CTI confirmed that biogas generated during the treatment process is captured for heat generation, the heat generated are all used by the operation of AWMSs and the 7 swine farms, which was provided by	SDG 7 and SDG 13 achieved by captured biogas for heat generation, thus avoid the methane emitted to the atmosphere and provide clean energy by utilizing biogas so that increase access to affordable, reliable,	Via site inspection and interview with representatives from project implementer/11/, Operation Staffs of the AWMS plants/12/, local officers/13/, local residents/14/, representatives from swine farms/15/ and checking the PER/8/,

	the coal-fired boiler without the project. 3,287.1575*10⁴ m³ of biogas will be captured annually for heat generation, thus avoid the methane emitted to the atmosphere and provide clean energy by utilizing biogas.	sustainable and modern energy for local residents	Emission Reduction Calculation sheet/2/ and registered VCS Joint-PD-MR/5/, CTI verified that the project's stated activities will sufficiently achieve sustainable development objectives of the project.
Provide employment opportunity	14 full time job opportunities including 7 female and 7 male have been created from the project activity to local person.	SDG 8 achieved by create 14 full time job opportunities including 7 female and 7 male to locals and employed them as employees	Via site inspection and interview with employees and checking the Labor Contracts/22/ and periodical payroll/23/, CTI confirmed that the project employed 14 locals as employees thus decrease the unemployment rate, CTI verified that the project's stated activities will sufficiently achieve sustainable development objectives of the project.
Organic fertilizer production	Via site inspection and checking the VCS Joint-PD-MR, CTI confirmed that below technologies and measures have been employed to produce organic fertilizers: Install 7 sets of animal waste management system (AWMSs) to treat the manure which product the bio-organic fertilizers. The reuse of swine manure reduces the methane emissions	SDG 12 and SDG 13 achieved by treat the manure from the swine farms and install 7 sets of animal waste management system (AWMSs) which product the bio-organic fertilizers, reduce waste generation through resource utilization, and decrease tons of greenhouse gas emissions	Via site inspection and interview with representatives from project implementer/11/, Operation Staffs of the AWMS plants/12/, local officers/13/, local residents/14/, representatives from swine farms/15/ and checking the PER/8/, Emission Reduction Calculation sheet/2/ and registered VCS Joint-PD-MR/5/, CTI verified that the project's stated

	from uncovered anaerobic lagoons in the project scenario. After liquid-solid separation, the solid will be treated in aerobic composting system and the organic fertilizers will be produced, which partly will be supplied to the farmers living around free and partly will be sold as fertilizer.		activities will sufficiently achieve sustainable development objectives of the project.
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The PP has identified the expected impacts from project activities, and all them are positive.

The project activities cover a wide range of aspects of community development and technology improvement and it is the opinion of the audit team that no negative impacts will be occurred and that the project will cause a positive net result in people well-being and climate change.

CAR 03 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.3 Implementation Schedule

The PP listed in section 2.1.3 of the MR the key dates and milestones in the project's development and implementation during this monitoring period. CTI confirmed critical dates and milestones in the project's development and implementation during this monitoring period, including initiation of SD VISta activities have been provided.

The start date of the project declared by the PP is 15-July-2020, when the project put into operation. Via checking the operation log/15/, it is verified that 15-July-2020 is the date when the project put into operation, it is verified that the start date is correct which is same to the start date defined under VCS scheme/5/. Therefore, the project start date is appropriate and consistent with the definition, the date on which activities that lead to the generation of sustainable development benefits are implemented, of Criterion 2.14 of SD VISta version 1.0/31/ and SD VISta Program Definitions v1.0/29/.

Furthermore, the corresponding date on the project activities that created the SDG contributions in this monitoring period have been provided and verified by CTI as actual and reasonable by checking the supporting evidence which listed in the table of above section 3.2.2.

All project activities described in the MR have their corresponding date on the implementation schedule. All project activities have been already started at the time of this verification. CTI confirmed that the veracity of this statement by inspecting the implementation of project activities during the site visit.

CAR 04 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.4 Project Proponent and Other Entities Involved in the Project

The project proponent (Muyuan Foods Co., Ltd.), and the contact information reported in section 2.1.4 of the PD/1/ have been confirmed to be correct through checking the business license of the company/7/, General design and construction contract/13/, Equipment purchase contracts/12/, Approval of EIA/10/ and interviewing with the PP representative through the on-site visit/11/.

The other entities involved in the Project (Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.) and the contact information reported in section 2.1.4 of the PD/1/ have been confirmed to be correct through checking the business license of the Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd./7/ and interviewing the representative of this company during the on-site visit.

The project proponent is responsible for implementation and management of the project, and Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. plays roles related to carbon and SD VSta including development and management of the carbon project and buyer of VCUs due to Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. has experiences for develop the carbon project.

3.2.5 Project Location

The project site is located at Nanyang City and Zhumadian City, Henan Province, China. There are 7 subsidiary farms involved in the project. Details of the subsidiary farms' location are given in table 3-1 below:

Table 3-1: Project Location

Item	Project Location		
Host Country	China		
Region:	Nanyang City and Zhumadian City, Henan Province		
Geographical Coordinates			
Swine farm	Detail Location	East longitude	North latitude
Wolong 2 nd farm	Shaozhuang Village, Luying township, Wolong District, Nanyang City	32° 52'9.05"	112°27'15.77"
Junzhang 26 th farm	Junzhang Village, Wangdian Township, Neixiang County, Nanyang City	33° 7'55.24"	111°54'37.62"
Zhengyang 1 st farm	Laodian Village, Pengqiao Township, Zhengyang County, Zhumadian City	32° 26'42.00"	114°23'13.20"
Zhengyang 4 th farm	Liwa Village, Lanqing Township, Zhengyang County, Zhumadian City	32° 28'25.36"	114°13'14.56"
Zhengyang 6 th farm	Liwa Village, Lanqing Township, Zhengyang County, Zhumadian City	32° 29'19.54"	114°18'12.82"
Zhengyang 9 th farm	Lanqing Village, Lanqing Township, Zhengyang County, Zhumadian City	32 ° 23'54.43"	114 ° 36'10.94"
Zhengyang 13 th farm	Xiemiao Village, Dougou Township, Zhengyang County, Zhumadian City	32° 26'37.43"	114°18'20.30"

The project location has been clearly provided in section 2.1.6 of the MR/1/ and the detailed coordinates of the project have been provided respectively which have also been verified by site inspection with GPS device and checking the map and the information is verified as correct.

3.2.6 Threats to the Project

The PP has described the natural and human-induced threats to the expected sustainable development benefits during the project lifetime and the threats are verified as actual and reasonable. The assessment is as below,

Natural threats - It is considered that the natural threats have been comprehensively described in Section 2.1.8 of MR/1/ including below,

- i. The Classical swine fever virus (CSF) could be happened and result in swine production declines and further reduce the swine manure supply. Via interview with representatives from swine farms and site visit of the swine farms, it is confirmed that the swine farms has established adequate biosecurity measures to tackle with the CSF, furthermore, only those that meet related epidemic prevention policy can be circulated in the market, besides, kitchen waste feeding will be avoided infection, and the strict treatment measures will be taken which are verified as reasonable and practical confirmed by interview and site visit.
- ii. The feedback and monitoring process of project can't be conducted properly due to unexpected circumstances, such as COVID-19 which may lead to the data collection suspended. Via interview with PP and employees, it is confirmed that the epidemic prevention and control measures has been established to provide strict disinfection, wearing masks and other protective gear, regular nucleic acid testing, controlling the social safety distance, and providing dormitories for employees, etc. to ensure that the infection and spread of new crowns are controlled at source, and other on-line methods will be used for information sharing with the local stakeholders which are verified as reasonable and practical confirmed by PP and employees and representatives of local stakeholders.

Human-induced threats - It is considered that the human-induced threats have been comprehensively described in Section 2.1.8 of MR/1/ including

- i. The fire or explosion caused by leakage of biogas would result in safety incidents. Via interview with employees and checking the training records/24/, it is confirmed that the relevant trainings on safety operation of the AWMS are conducted and portable gas detection alarm is equipped in each swine farm to detect gas concentrations in different locations, audible and visual alarm will be issued if it exceeds the normal range which has been verified by site inspection of the devices.
- ii. The leakage of manure waste into ground water that will cause the water pollution. Via checking the EIA approval/10/ and interview with local officers, CTI confirmed that the project activity is compliance with environmental laws and regulations and no leakage will be created to impact the environment and via site inspection interview with employees, it is confirmed that there are geo-membrane enclosed anaerobic tanks applied in the project is sealed by HDPE geomembrane, which is impermeable and leak-proof, and laying HDPE impermeable membranes inside the excavated soil pit, so it will not cause leakage of manure waste into ground water, which are verified

as reasonable and practical confirmed by local officers and site inspection and checking the project design in Technical agreement of anaerobic tanks/14/.

In conclusion, CTI confirmed that the PP identified correctly and comprehensively the threats to the project benefits and that the PP created, and it is implementing mitigation actions in this monitoring period to reduce or diminish these threats.

CAR 05 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.2.7 Benefit Permanence

The PP states that the project is focused on a program of training and supports a system of maintenance that helps extend the lifespan of the environmental technologies deployed.

To ensure the project's long-term viability and the permanence of benefits, PP has taken a series of actions:

- 1) Adopts the advanced technology and equipment to reuse the animal manure, benefits of the carbon reduction project and project will serve as a reference for the local government to further develop similar projects and improve the local ability in waste recycling.
- 2) Reduces of GHG in the atmosphere through avoiding methane emissions from anaerobic treatment of swine manure and waste water and the biogas generated used for heat generation, which will help to lessen the reliance on fossil fuels.
- 3) Offers awareness of and long-term significance of environmental protection and carbon reduction that accompanies the project extend the lifespan.

Hence, CTI verified the benefit-permanence activities through the desk review and during the on-site visit and considers the measures will likely achieve the sustainable development goals of the project and that these will last beyond its lifetime.

CAR 06 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3 Stakeholder Engagement

3.3.1 Stakeholder Consultation and Adaptive Management

During the implementation stage of this monitoring period, via checking the local communication survey records/21/ and interview with the representatives from swine farms, local government and local residents near the project site during site visit, it is confirmed that the PP has conducted follow-up interviews and ongoing communication and consultation with local stakeholders to share the information about the project and its impacts and collect any comments or inputs to the project implementation. Based on the VVB's local expertise, CTI confirmed that the local government agencies and competent authorities will conduct spot checks on the implementation of the project from time to time as per the request from the local government's regulations.

For the group of local government, PP consulted them regularly for the project to be granted permission to operate in their areas of jurisdiction and the local government play in granting permission for the

project to operate, regular communication and consultation is maintained between the project and local government, the project proponent provides or updates regular yearly to the government such as company qualification information, financial auditing and environmental monitoring reports etc. This information is communicated via government affair platform, which has been confirmed by site interview with PP and representatives from local government. Hence, it is confirmed that the local government has been consulted and the information of the project has been shared with them during this monitoring period.

For the local residents, due to the group size is large, PP has consulted with them by meetings and surveys conducted for the local resident. The project owner carried out a questionnaire survey for the local stakeholder to share the information about the project and its impacts and collect any comments or inputs to the project implementation and collect the relevant comments and suggestions from 30-August-2020 to 03-September-2020, and project proponent put up public announcements at the villages near the project site about the survey including general information about the introduction of project, the date and the purpose of the questionnaire survey as well as the project proponent's phone number and email address from 09-August-2020 to 13-August-2020 which is confirmed by interview with the local stakeholders.

Via checking the 70 filled questionnaires/21/, interview with the local officer and local stakeholders during site visit, it is verified that nearly all the respondents believe that the Project will not have any negative environmental impact. It is verified that all local stakeholders who participated the survey were satisfied with the implementation of the project and they knew impacts of the project and believed that Project will bring more benefits than risks which has been confirmed by site interview with local stakeholders.

The local officers from Environment Protection Bureau has confirmed that the project was under supervised and the implementation of the project is in line with the local environment protection regulations and EIA/9/. And via checking the 70 filled questionnaires/21/, it is confirmed that no other negative impacts considered by local stakeholder to their local life.

Via interview with the representatives from swine farms, local government and local residents near the project site during site visit, it is verified that there were no comments and issues from the local stakeholders during the implementation period and the project passed all the periodic spot checks by local government.

Furthermore, via site inspection, CTI confirmed that the project owner established the mechanism for on-going communication with local stakeholders with a continuous Input / Grievance Expression Process Book was put at the entrance of each swine farm so that to collect the grievances or comments from local stakeholders anytime, and via on-site checking the book, CTI verified that there was no any grievances or comments received during this monitoring period.

For the group of raw material suppliers including 7 swine farms, PP is in charge of 7 AWMS plants and 7 swine farms, PP have arranged relevant liaison officer to be responsible for the communication with each swine farms, the liaison officer has established a communication line with the swine farm via emails, telephone calls and WeChat and provided real-time feedback.

For the group of corporates equipment providers, the operation of the equipment directly affects the quality and output of the biogas and fertilizers, so it is very important to maintain a long-term

communication mechanism with the equipment providers, the communication mainly consists of timely feedback on problems found through the daily inspection of the company staffs and regular monthly or yearly equipment maintenance which has been verified by site interview with the PP and checking the operation log/15/.

Via interview with PP, CTI confirmed that no specific channels for communication exist for marginalized and/or vulnerable groups as no any marginalized and/or vulnerable groups identified but all project communications and meetings are planned to the greatest extent possible to make accessible to all groups, through continuous Input / Grievance Expression Process Book prepared at the entrance of each swine farm which has been verified during site inspection.

Thus, CTI is able to confirm that the stakeholder consultation processes were carried out in an effective manner by the PP during this monitoring period, that these processes were appropriate for each stakeholder group, providing information regarding potential costs, risks and benefits, and allowing the stakeholders to influence the project design.

CL 01 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.2 Anti-Discrimination

CTI checked and confirms that the PP has developed a strict policy prohibiting any form of discrimination or harassment as well as designed measures that guarantee equal opportunities for community members, including women and vulnerable and/or marginalized people, in accordance with Criterion 2.2.9 of the SD VISta v1.0.

During the examination of the project documents and on the direct observations and interviews to project staff and local community members carried out during the site visit, the verification team didn't find any evidence that the project is engaging in any form of discrimination for this monitoring period.

3.3.3 Worker Training

The PP has developed and implemented plans for hiring and training and capacity building of all the project employees.

Interviews with employees during the site visit confirmed all the employees were trained during this monitoring period and well-versed in the skills needed to carry out their jobs and implementation of project which is also verified by checking the training records/24/. The audit team deems that the project has properly identified the training needs and delivered adequate capacitation to project's workers in order for them to perform their activities in a safe and effective manner.

CL 02 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.4 Equal Work Opportunities

The PP stated that the hiring profile is established according with the vacant position given an equal opportunity without any discrimination of age, sex, marital status, ethnicity, social status or religious convictions, political ideas or sexual orientation, and in compliance with the local law. The project makes an effort to hire locally as evidenced by the onsite interview with project developer and project workers. Hiring criteria are based on skill sets without any discrimination as defined in the labor contract/22/.

During this monitoring period, the total number of the local residents who were provided by long-term technician jobs for project implementation and management is 14, and 7 of them are confirmed as women and they are paid monthly and equally with man for same positions. This is confirmed via checking the labor contract/22/ and on site interview with women employees.

Hence, CTI confirmed that the project's hiring practices provide equal employment opportunities including management opportunities to all stakeholders, including women and marginalized and vulnerable people. It concludes that the project provides equal employment opportunities to all stakeholders.

CL 03 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.5 Workers' Rights

The PD/1/ states that the project shall meet or exceed all applicable laws and regulations regarding workers' rights. Relevant law < Labor Law of the People's Republic of China>/37/ and Core Labor Conventions of the International Labor Organization (ILO)/38/ to which the PP have to comply is checked by CTI, this law is confirmed as the national law to guarantee the employment's right, health and safety. The hiring process is governed by the labour code and all workers have a contract in which its duties, rights and laws that protect them are reported. This is confirmed via checking the labor contract/22/ and on site interview with representatives from employees.

Thus CTI is able to confirm that the project has exceeded all local labor requirements and ensured that all workers were apprised of their rights, complying with the Core Labour Conventions of the ILO/38/. No labor conflicts were evidenced during the interviews with employees.

CL 04 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.6 Occupational Safety Assessment

The PD/1/ states that the project proponent shall meet <Safety and Healthy in Agriculture> published by ILO/38/ and <Labor Law of the People's Republic of China>/37/ regarding workers' health and safety. Both the two regulations are confirmed as international and national rule and laws which can be used as the occupational safety regulations to obey. The activities that endanger workers are those related to workplace accidents due to fire incident, leakage of leachate and the odour generation and diffusion that requires qualified personnel and necessary safety instruments such as portable gas detection alarm are equipped to detect gas concentrations in different locations of the raw materials warehouse, audible and visual alarm will be issued if it exceeds the normal range to prevent any risk, which has been confirmed during site observation and interview with the employees and local officers.

In conclusion, CTI considers that occupational safety assessment was comprehensive, and that measures have been put in place to minimize risk to workers.

CL 05 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.7 Feedback and Grievance Redress Procedure

The MR/1/ describes a feedback and grievance redress process as below,

For the project implementation, via site inspection checking the Input / Grievance Expression Process Book put at the entrance of each swine farm/18/, all stakeholders are allowed to record their grievances or comments in the book at any time. PP has appointed the staff to check the book daily and they will provide the reply back to local stakeholders if the comments received which has been confirmed by PP and related staff. Besides, PP has posted notices in public places with the project information to ensure most of the stakeholder farmers affected by the project can get the information and make any comments on the project through the contact method listed in the postings, and related staff will provide the reply back to local stakeholders if the comments received which has been confirmed by PP and local stakeholders. CTI confirmed that PP has established continued consultation and adaptive management methods for continuing communication and consultation with all stakeholder groups.

Besides, the consultation can also be conducted online, such as email, telephone, We Chat or video conference due to COVID-19, but actually even in COVID-19 period, the local stakeholders in the project area can still go out to check the postings and provide comments in the Grievance Expression Process Book which has been confirmed by site interview with local stakeholders.

In addition, by interview with the residents, they confirm that all the contact information is announced to the stakeholders during the local stakeholder consultation process.

PP promised that grievances will be addressed in a reasonable amount of time, usually will take necessary action on the issue raised by the stakeholder within 48 hours.

Based on the above evidence, CTI confirmed that the grievance redress procedure has being design and is implemented according to Criterion 2.2.14 of the SD VISta version 1.0 and that it is effective in its aim.

3.3.8 Stakeholder Access to Project Documentation

The full project documentation has been published on VERRA website for public comments as per checking the VCS website (<https://registry.terra.org/app/projectDetail/VCS/2876>). Thus the local stakeholders can easily download documents from the website. The project document, monitoring reports including the monitoring results and other relevant documents will be provided as requested in a timely manner once requested by local stakeholders which is confirmed by PP and interview with local stakeholders. Furthermore, all the stakeholders can contact the project owner via telephone, email or We Chat regarding project documentation of every milestone of the project development, including registered, issuance, etc.

In conclusion, based on the testimonies of local stakeholders regarding the well-established communication channels with the project management, that the project has and will continue to make project documentation accessible to all stakeholders.

CL 06 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.3.9 Information to Stakeholders on Verification Process

In particular the project proponent informed and explained about the means of the verification process through email, telephone or We Chat as requested before the verification site visit took place as confirmed by site interview with local stakeholders and they will call if they have any issues about the

project at anytime. This was also confirmed by the PP and interview with local stakeholders during the site visit.

All interviewees were well aware of the nature of the audit process and declared being informed of the auditors visit with anticipation. Hence CTI confirmed that all stakeholders are likely to know of future assessments.

CL 07 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.4 Project Management

3.4.1 Avoidance of Corruption

As legally registered companies according to above assessment, the PP and other involved entity in project design and implementation have the obligation to comply with relevant regulations, including anti-corruption law. This is verified by checking the company information in National Enterprise Credit Information Publicity System/32/ and company business license/7/.

Thus it is concluded that the project management has defined and set a strong and comprehensive framework to prevent the commitment any kind of illicit acts by project staff. No evidence of any form of corruption or illegality was found during the review of the provided evidence and the site visit.

3.4.2 Recognition of Property Rights

Through on-site visit and checking the business license/7/of the project owner and checking the Licenses for production and operation of 7 swine farms/11/ and Equipment purchase contracts/12/, CTI verified that the project developer Muyuan Foods Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project and approved by the local government.

Muyuan Foods Co., Ltd. is responsible for the comprehensive implementation and management of the project and project owner has the ownership of the project thus has the right to make decisions about the carbon reduction of the project. Hence there are no uncertainties and changes to land tenure arrangements, resource access rights, community-based property rights and customary rights, usage rights or land ownership.

No conflict with any kind of statutory and customary rights was reported to the audit team nor was noticed by them.

3.4.3 Free, Prior and Informed Consent

As per the assessment in Joint-validation-verification report/4/, in order to solicit the opinions and attitudes of all stakeholders on the construction of the project, the project owner issued a stakeholder questionnaire before the construction of the project started on 06-January-2020 to 10-January-2020, to survey the opinions of local stakeholders on the construction of the project. On the other hand, the project is carried out under the supervision of the government, and the filing certificate has been obtained before the project starts; And agreement with the raw material supplier. In order to obtaining free, prior, and informed consent from the stakeholders prior to the construction of the project, the project owner issued a stakeholder questionnaire before the construction of the project started on 06-January-2020 to 10-

January-2020, to survey the opinions of representatives of local stakeholders on the construction of the project, this is deemed a direct method to obtain free, prior, and informed consent from the stakeholders. On the other hand, the project is carried out under the supervision of the government, and the filing certificate has been obtained before the project starts; and signed agreement with the raw material suppliers which have been checked by VVB during site visit and has been assessed in the VCS verification report. Therefore, it means that PP has obtained free, prior, and informed consent from the stakeholders prior to the construction of the project through questionnaire, got certificate from government and signed agreements with related stakeholders to avoid any disagreement raised from the local stakeholders.

Thus CTI confirmed that the free, prior and informed consent has been obtained from those stakeholders who are affected by the project through the documentation assessed in Joint-validation-verification report/4/ and observations made during the site visit.

Furthermore, through on-site visit and checking the business license/7/of the project owner and checking the Licenses for production and operation of 7 swine farms/11/, CTI verified that the project developer Muyuan Foods Co., Ltd. is a privacy company, who is in charge of the integrated implementation and management of the project and approved by the local government. Since project was invested by the project owner, who has the legal right to control and operate the project activity, thus the ownership is clear, there is no dispute over land ownership at the project site.

In conclusion, CTI confirmed that the project has respected property rights and obtained free, prior and informed consent of those who have been affected by the project.

3.4.4 Restitution and Compensation for Affected Resources

As assessed above, the project land belongs to the state-owned land. PP had granted permission to operate in their areas of jurisdiction and paid land use tax in accordance with Law of the People's Republic of China on Land Administration/37/, hence there are no negative effects on the land or resources due to the project.

Therefore, the allocation of restitution or compensation to any parties is not required.

CL 08 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.4.5 Property Rights Removal/Relocation of Property Rights Holders

As assessed above, project land belongs to the state-owned land, before the construction of the project, the lands near to swine farms was vacant and didn't have any negative effects on local people's livelihood and culture. Hence there are no activities lead to involuntary removal or relocation of property rights holders from their lands or territories, or force rights holders to relocate activities important to their culture or livelihood involved in the project.

Therefore, no removing property rights holders from their lands or territories occurred under the project implementation.

CL 09 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

3.4.6 Mitigation of Illegal Activities

Via on-site observation and interview with local officers, CTI verified that there are no illegal activities inside the project area; the area is considered as being peaceful and excluded from social conflict. Furthermore, any illegal agricultural activities will be fined or sentenced to punishment according to Chinese laws/37/, thus it is confirmed no illegal activities will be occurred.

In conclusion, the project's benefits will not be affected by the illegal activities.

3.4.7 Ongoing Conflicts or Disputes

As per the assessment in above section 3.4.3, CTI confirmed that the free, prior and informed consent has been obtained from those stakeholders who are affected by the project by the documentation assessed in the Joint-validation-verification report/4/ and observations made during the site visit.

Besides, as assessed above, CTI verified that all property rights are recognized, respected and supported. Since project was invested by the project owner, who has the legal right to control and operate the project activity, thus the ownership is clear, there is no dispute over land ownership at the project site and hence there are no negative effects on the land or resources due to the project.

Thus, there are no ongoing or unresolved conflicts or disputes over land, territories and resources rights.

Furthermore, by on site interview with representatives from PP and local stakeholders and checking the local stakeholder consultation records, it is verified that no activity is undertaken by the project that could prejudice the outcome of an unresolved dispute relevant to the project and no any disputes occurred for this monitoring period.

In conclusion, no measures needed and designed to resolve conflicts or disputes.

3.4.8 National and Local Laws and Regulations

The MR has stated that the project is in the field of waste handling, this industry is confirmed as in line with the laws and regulations/37/ as listed in the section 2.3.8 of MR/1/.

Also the project is legally approved by Local government by checking the EIA approval/10/, Licenses for production and operation of 7 swine farms/11/, which means that the project is in line with the national and local laws and regulations based on the local expertise of the VVB. And as stated in the MR/1/ and confirmed by interview with local officer, CTI verified that the project will be subject to regular inspection by local government during the implementation period to ensure continuous compliance.

In conclusion, the project complies with all relevant local, regional and national laws, statutes and regulatory frameworks in China/37/.

4 BENEFITS FOR PEOPLE AND THEIR PROSPERITY

4.1.1 Stakeholder Impacts

The PP monitored and quantified the impacts on stakeholders, previously identified in the validated PD, during the monitoring period. The following table summarizes the means used to assess the reported impacts on each stakeholder group resulting from project activities during this monitoring period:

Impacts	Project Activities	Affected stakeholder group(s)	Monitored output for this monitoring period	VVB Assessment Methods	+/-	SDG Target
#1: Provide decent work for local residents	Provide employment opportunity	Local residents around the project site and the local government	Total 14 jobs for local people have been created during the monitoring period. The job opportunities are available to the all the local residents around the project site equally which improves the living conditions of the local residents.	Site inspection of project implementation, Interview with employees, local residents and representatives from local government Checking the Labor Contracts/22/ and monthly payroll/23/, record keeping book/25/	+	8.0
#2: Promote justice in job recruitment	Provide employment opportunity	Local residents around the project site	7 female and 7 male employees has been recruited regardless of gender during the monitoring period, which improve the equality in employment. The project has promoted the employment of women and other vulnerable members. Decent job opportunities are	Site inspection of project implementation, Interview with employees especially women workers Checking the Labor Contracts/22/ and monthly payroll/23/, record keeping book/25/	+	8.0

			available to them equally.			
#3: Personal skills and environmental awareness will be improved	Provide employment opportunity	Local residents around the project site	Employees was trained 9 times for the general working rights, relevant laws and regulations, safety and technical aspects of the project during this monitoring period	Interview with employees, local residents Checking the technical training records/24/	+	8.0
#4: Improved economic conditions	Provide employment opportunity & Organic fertilizer production	Local residents around the project site, the swine farms and local government	The project has brought economic benefits to local residents and swine farms. For the local government, the improvement of the economy of residents and enterprises contributes to the prosperity of the local economy to some extent.	Interview with representatives from local residents, the swine farms, unmanaged SWDS and local government	+	12.0

After reviewing the evidence provided by the PP and collecting the information through direct interviews and inspections during the site visit, CTI is able to confirm that the reported impacts for each stakeholder during the monitoring period resulting from project activities are accurate and credible. The impacts during the monitoring period were determined in compliance with the Stakeholder Monitoring Plan of the validated PD. Therefore CTI confirmed that the PP has properly reported the type and magnitude of the project's impacts on the stakeholder groups, as required by Criterion 3.1.4 of the SD VISta v1.0.

CL 10 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

4.1.2 Mitigation of Negative Impacts on Stakeholders

As it was indicated in section 3.4. of the PD and 3.1 of the MR, there is no negative impacts on local vendors stakeholders identified due to the implementation of the project. Hence, no mitigation measurement is requested.

4.1.3 Stakeholder Impact Monitoring

The PP designed a monitoring plan to track the impacts of the project activities on the stakeholders. The monitoring plan is structured according to the project activities, and allow to track the contributions on

the SDG, described in section 1 of the MR and in validated PD/3/, and to support all impacts and claims. All variables are directly linked to the impacts on community stakeholders expected by the project.

The audit team checked the monitoring plans contained in the project and supporting documents and compared them with the MR to verify whether there was any discrepancy with the Stakeholder Monitoring Plan of the validated PD/3/ that would alter the quantification of the project's impacts on stakeholders for the monitoring period or that would prevent the monitoring of any project activity to achieve the sustainable development goals. CTI has confirmed that there are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the validated PD.

Refer to below table for detail assessment of the monitoring of each SDG indicator.

SDG Monitoring parameter	Corresponding impacts	Affected stakeholder group(s)	Project contributions during this monitoring period	VVB Assessment Methods
Number of jobs for local people created by gender	Impact #1: Provide decent work for local residents. Impact #2: Promote justice in job recruitment. Impact #3: Personal skills and environmental awareness will be improved.	Local residents around the project site, swine farm and the local government.	Total 14 jobs for local people (7 females and 7 males) have been created during this monitoring period. In August 2020, training was conducted on the labour rights and interests. The biogas safe production trainings were conducted by safety department of the company in August 2020, March 2021 and May 2022, respectively. The technical skills of composting trainings were conducted on September 2020 and June 2021, respectively. In August 2020 and December 2021, training on plant fire	Site inspection of project implementation, Interview with employees, local residents and representatives from local government Checking the Labor Contracts/22/, monthly payroll/23/, record keeping book/25/ and training records/24/

			safety were organized respectively for safety department of company. In May 2021, training on GHG emission from the manure was conducted	
The amount of the organic fertilizers generated	Impact #4: Improved economic conditions.	Local residents around the project site, the local government, swine farm and equipment providers	In the first monitoring period from 15-July-2020 to 31-March-2022, the amount of organic fertilizer generation is 115,215 tonnes.	Interview with employees Site inspection of project implementation, Checking the daily operation record of each treatment plant/17/ Checking the calibration report of electronic truck scale/19/ Checking the Certificate of Metrological Authorization of calibration party /20/

Therefore CTI ensured that all necessary parameters required to support all impacts and claims described and net impacts were properly monitored, and the values reported on the MR are accurate and credible.

4.1.4 Net Positive Stakeholder Well-being Impacts

Via checking the MR, CTI confirmed that except for the potential threats described in Section 2.1.8 of MR, the impacts in Section 3.1 brought benefits for stakeholders and are net, long-term positive for them. Besides, all the risks mentioned have measures and mitigation, and the positive impacts below which is long-term and sustainable are more distinct than the potential risks on stakeholders' living life.

According to the MR, the positive impacts for this monitoring period are indicated below:

- Provide decent work for local residents, which is beneficial for local residents around the project site, and the local government. 14 permanent jobs (including 7 females and 7 males)/22/ for the local residents has been created during this monitoring period, which contributes to reducing unemployment rate.

- Promote justice in job recruitment, which is beneficial for local residents around the project site especially women, the equal job opportunities have been provided for the local residents regardless of gender/22/ during this monitoring period.
- Personal skills and environmental awareness have been improved through different training sessions have been provided to employees/24/ in this monitoring period.
- The economic conditions will be improved, which is beneficial for local residents around the project site, swine farms and the local government by created employments/22/,/23/, produce organic fertilizers and distributed nearby farmers free and pay tax to local government.

The site visit interviews with local stakeholders demonstrated that stakeholders were receiving benefits they would not otherwise have received in the absence of the project. Jobs were created and other income-producing opportunities and trainings of sustainable development were made available and have included the local people and women. In conclusion, the assessment of the anticipated net impacts is accurate and reflects faithfully the project benefits in stakeholder groups.

CTI has checked the net impact by their outcomes onsite: all the activities were visited during the field trip, and moreover, employees and local stakeholders representatives were interviewed. They confirmed the results mentioned, which is also supported in the extensive documentary evidences provided for the validation (see Appendix 3: list of evidences provided, in this report).

In conclusion, the net impacts of the project activities are positive for each related stakeholder group during this monitoring period.

5 BENEFITS FOR THE PLANET

5.1.1 Impacts on Natural Capital and Ecosystem Services

The PP monitored and quantified the impacts on natural capital and ecosystem services previously identified in the validated PD, during the monitoring period. The following table summarizes the means used to assess the reported impacts on the planet resulting from project activities:

Impacts	Project Activities	Affected Natural Capital and/or Ecosystem Service(s)	Impacts during this monitoring period	VVB Assessment Methods	+/-	SDG Target
#1: Avoid methane emissions direct release into the atmosphere	Biogas is captured for heat production, Organic fertilizer production	Carbon emissions and climate change	The project reduces the GHG emissions, which mitigate the climate change as well. During this monitoring period, 7 new sets of AWMSs which were installed to the 7 existing swine farms treat the manure and wastewater. Methane emissions generated in the baseline uncovered anaerobic lagoons have been avoided.	Site inspection of project implementation, Checking the VCS Joint-PD-MR/5/ and VCS Joint-validation-verification report/6/	+	13.0
#2: Reduce waste generation through resource utilization	Biogas is captured for heat production, Organic fertilizer production	Waste recycling and usage of renewable energy	During this monitoring period, 115,215 tons of organic fertilizers is produced, the solid is treated in aerobic composting system and the organic fertilizers have been produced, part of the fertilizer was distributed to local farmers for free,	Site inspection of project implementation, Interview with local farmers Checking the PER/8/ Checking the daily operation record of each treatment plant/17/	+	12.0

			which helps to increase the resource reuse of waste materials.			
#3: Reduce demand for fossil fuels	Biogas is captured for heat production	Usage of renewable energy	During this monitoring period, 4,678.05*10 ⁴ m ³ of biogas is generated, the liquid of the manure waste was treated through anaerobic digestion and the biogas generated during the treatment process is captured for heat generation in AWMSs and swine farms, which helps to reduce the using of fossil fuels for heating in the swine farms.	Site inspection of project implementation, Interview with representative of swine farms Checking the PER/8/ Checking the daily operation record of each treatment plant/17/	+	7.0
#4: Promote the use of renewable energy	Biogas is captured for heat production	Usage of renewable energy	During this monitoring period, 4,678.05*10 ⁴ m ³ of biogas is generated, the liquid of the manure waste was treated through anaerobic digestion and the biogas generated during the treatment process is captured for heat generation in AWMSs and swine farms, which helps to promote the use of renewable energy.	Site inspection of project implementation, Interview with representative of swine farms Checking the PER/8/ Checking the daily operation record of each treatment plant/17/	+	7.0

After reviewing the evidence provided by the PP and collecting the information through direct interviews and inspections during the site visit, the audit team is able to confirm that the reported impacts on natural capital and ecosystem services during the monitoring period resulting from project activities are accurate and credible. The impacts during the monitoring period were determined in compliance with the Natural

Capital and Ecosystem Services Monitoring Plan of the validated PD. In opinion of CTI, the PP has properly estimated the type and magnitude of the project's impacts on the natural capital and ecosystem services, as required by Criterion 3.2.4 of the SD VISTA v1.0.

5.1.2 Mitigation of Negative Impacts on Natural Capital and Ecosystem Services

The PP has not identified negative impacts on natural capital and ecosystem services as result of the implementation of project activities in PD and also in MR for this monitoring period, which is also verified by CTI through site inspection and interview with local farmers and officers. Therefore, it is not necessary to do action to mitigate it.

5.1.3 Natural Capital and Ecosystem Services Impact Monitoring

The PP designed a monitoring plan to track the effects of the project activities on the natural capital and ecosystem services. The monitoring plan is structured according to the project activities, and allow to track the contributions on the SDG, described in section 1 of the MR, and to support all impacts and claims. All variables are directly linked to the impacts on community stakeholders expected by the project.

The project is also validated and regularly verified under the Verified Carbon Standard (VCS) and has developed and implemented a robust monitoring system for the monitoring period.

The audit team checked the monitoring plans contained in the project and supporting documents and compared them with the MR to verify whether there was any discrepancy with the Natural Capital and Ecosystem Services Monitoring Plan of the validated PD that would alter the quantification of the project's impacts on the planet for the monitoring period or that would prevent the monitoring of any project activity to achieve the sustainable development goals. CTI confirmed that there are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the validated PD.

Refer to below table for detail assessment of the monitoring of each SDG indicator.

SDG Monitoring parameter	Corresponding impacts	Affected Natural Capital and/or Ecosystem Service(s)	Impacts during this monitoring period	VVB Methods	Assessment
GHG emission reductions	Impact #1 Avoid methane emissions direct release into the atmosphere	Carbon emissions and climate change	During this monitoring period, the Net GHG emission reduction is 444,807 tCO ₂ e.	Site inspection of project implementation, Checking the VCS Joint-PD-MR/5/ and Joint-validation-verification report/6/	
The amount of the organic fertilizers generated	Impact #2 Reduce waste generation	Waste recycling and usage of	In the first monitoring period from 15-July-2020 to 31-March-	Interview with employees	

	through resource utilization	renewable energy	2022, the amount of organic fertilizer generation is 115,215 tonnes.	Site inspection of project implementation, Checking the daily operation record of each treatment plant/17/ Checking the calibration report of electronic truck scale/19/ Checking the Certificate of Metrological Authorization of calibration party /20/
The amount of the biogas recycled	Impact #3 Reduce demand for fossil fuels Impact #4 Promote the use of renewable energy	Usage of renewable energy	4,678.05*10 ⁴ m ³ of biogas is recycled by the project for heat generation during this monitoring period.	Site inspection of project implementation, Checking the daily operation record of each treatment plant/17/ Checking the VCS Joint-PD-MR/5/ and Joint-validation-verification report/6/

Therefore, CTI ensured that all necessary parameters required to support all impacts and claims described and net impacts were properly monitored, and the values reported on the MR are accurate and credible.

5.1.4 Net Positive Natural Capital and Ecosystem Services Impacts

To evaluate the impacts to natural capital and ecosystem services that may be caused by the project, the PP has monitored the waste quantities recycled and emissions reduced which will provide for a net positive ecological impact on the natural capital in the project area. No negative environmental impacts have been identified for the monitoring period. Thus, the net impact for natural capital and ecosystem services is positive.

This MR concludes the first monitoring period, from 15-July-2020 to 31-March-2022. Total 4,678.05*10⁴m³ of biogas is generated by the project for heat generation, the amount of organic fertilizer generation is 115,215 tonnes and project have generated net GHG emission reduction is 444,807 tCO_{2e} over this first monitoring period.

After visiting the project region, CTI confirmed that the project has adequately identified all potentially negative natural capital and ecosystem services impacts and confirmed all them are positive.

Thus, CTI deems that the claim that the net impacts of the project activities during the monitoring period are positive for natural capital and ecosystem services is credible and is appropriately substantiated with evidence.

CAR 07 was raised and successfully closed. Refer to Appendix 4 for detail assessment.

6 OPTIONAL: CLIMATE MODULE

Not Applicable.

7 OPTIONAL: SD VISTA ASSETS

Not Applicable.

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8 VERIFICATION CONCLUSION

Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. has commissioned the CTI to carry out the Sustainable Development Verified Impact Standard (SD VISTA) verification assessment of the project activity “Muyuan WJZ AWMS GHG Mitigation Project in Henan Province” (VCS ID 2876), in Nanyang City and Zhumadian City, Henan Province, China for the 1st monitoring period from 15-July-2020 to 31-March-2022 and is able to affirm with a reasonable level of assurance that the project is in compliance with the Sustainable Development Verified Impact Standard v1.0 requirements and all its associated guides and definitions, without qualifications or limitations.

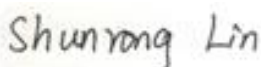
The objective of the verification was to conduct an independent assessment of the project implementation, project activities and impacts in order to determine its compliance with the requirements of the SD VISTA Program, and with the validated Project Description. The scope of the verification was the review of the sustainable development impacts generated by the project, their contribution to the UN Sustainable Development Goals (SDG), and the benefits for people and prosperity and the benefits for the planet that they imply, reported for the period from 15-July-2020 to 31-March-2022.

The review of the Monitoring Report and additional documents related to the project management and monitoring; and the subsequent background investigation, interviews and testimonies of stakeholders and project site inspections have provided to verification team with sufficient evidence to verify the fulfilment of the stated criteria.

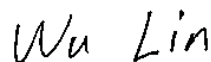
In detail the conclusions can be summarized as follows:

- The project is in line with all criteria of the SD VISTA v1.0, the SD VISTA Program Guide v1.0 and the SD VISTA Program Definitions v1.0.
- All claims made by the project, including its contribution to the SDG, associated SDG indicators and net impacts on People and Prosperity and on the Planet, are credible and appropriately substantiated with historical data and information.
- The monitoring plans for tracking the impacts on stakeholders and on natural capital and ecosystem services are transparent and adequate to support all impacts and claims of the project during the monitoring period, and have been implemented in accordance with the monitoring plans described in the validated PD.

The conclusion of this verification report is that the project, as it was reported in the Monitoring Report for the period from 15-July-2020 to 31-March-2022, conforms with all criteria applicable for verification set by the Sustainable Development Verified Impact Standard and the SD VISTA Program Guide, without any qualification nor limitation.



Lin Shunrong
CTI



Lin Wu
CTI

Verification Team Leader
25-July-2024

Technical Reviewer
25-July-2024

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
AWMS	Animal Waste Management System
BE	Baseline Emission
CAR	Corrective Action Request
CCER	China Certified Emission Reduction
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO ₂	Carbon dioxide
CP	Crediting Period
DNA	Designated National Authority
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ETS	Emission Trading Scheme
FAR	Forward Action Request
PER	Project Evaluation Report
GHG	Green House Gas
GS	Gold Standard
GSC/GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
JPM	Joint-PD-MR
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
MoV	Means of Validation
MP	Monitoring Plan
PA	Project Activity
PE	Project Emission
PP	Project Participant
QC/QA	Quality control/Quality assurance
SD	Sustainable Development
SDG	Sustainable Development Goals
SD VISta	Sustainable Development Verified Impact Standard
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation/Verification Body

APPENDIX 2: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Ms. Shunrong LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

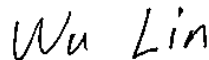
Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 14: Afforestation and reforestation	TA 14.1: Afforestation and reforestation
SS 15: Agriculture	TA 15.1: Agriculture

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN



Technical Competent Manager

Shenzhen, 01/01/2021

Mr. Wu LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation
	TA 1.2: Energy generation from renewable energy sources
SS 2: Energy distribution	TA 2.1: Electricity distribution
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 10: Fugitive emissions from fuels (solid, oil and gas)	TA 10.1: Fugitive emissions from oil and gas
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:



Lu ZHOU

General Manager

Shenzhen, 01/01/2021

APPENDIX 3: DOCUMENTS REVIEWED OR REFERENCED

No	Author	Title	References to the document	Provider
1.	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	SD VISta MR	SD VISta MR of Muyuan WJZ AWMS GHG Mitigation Project in Henan Province - Draft Version 1.0, dated 18-July-2022 - Final Version 2.0, dated 22-February-2023 - Final Version 03, dated 01-July-2024 after VERRA Review round 1 - Final Version 04, dated 24-July-2024 after VERRA Review round 2	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.
2.	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	Emission Reduction Calculation Sheets	Emission Reduction Calculation sheet (related to ex-ante VCU calculation) Version No. 02, dated 07-July-2022	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.
3.	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	SD VISta PD	SD VISta PD of Muyuan WJZ AWMS GHG Mitigation Project in Henan Province Version 02, dated 22-February-2023	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.
4.	CTI	SD VISta Joint-validation-verification report	SD VISta Joint-validation-verification report of Muyuan WJZ AWMS GHG Mitigation Project in Henan Province Version 01, dated 31-January-2023	
5.	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	VCS Joint-PD-MR	VCS Joint-PD-MR of Muyuan WJZ AWMS GHG Mitigation Project in Henan Province, Version No. 02, dated 07-July-2022	VCS website
6.	CTI	VCS Joint-Validation-Verification Report	VCS Joint-Validation-Verification Report of Muyuan WJZ AWMS GHG Mitigation Project in Henan Province, Version 1.0, dated 08-July-2022	VCS website
7.	Local Administrative Examination and Approval Bureau	Business License of PP	Business License of Muyuan Foods Co., Ltd. and Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	PP

No	Author	Title	References to the document	Provider
8.	Henan Tutian New Energy Technology Co., Ltd.	Project Evaluation Report	Issued on 22-March-2019	PP
9.	Nanyang Environmental Protection Research Institute Co., Ltd.	Environment Impact Assessment (EIA)	Issued in November 2018	PP
10.	Henan Provincial Department of Ecology and Environment	EIA approval	Issued on 30-May-2019	PP
11.	Local County Agriculture and Rural Affairs	Licenses for production and operation	Licenses for production and operation of the breeding livestock and poultry of 7 swine farms	PP
12.	PP and manufacturers	Equipment purchase contracts	Equipment purchase contracts of all the involved main equipment including biogas boiler, solid-liquid separators, anaerobic tanks and flare system etc.	PP
13.	PP and Henan Guanyu Environmental Protection Technology Co., Ltd.	General design and construction contract	Signed on 24-October-2019	PP
14.	Manufacturers	Technical agreement	Technical agreement of main equipment	PP
15.	PP	Operation log of the project	Operation log of the 7 AWMSs plants	PP
16.	Project Owner and Henan Yimu Liangtian Fertilizer Industry Co., Ltd.	Sale agreement of organic fertilizer	Sale agreement of organic fertilizer dated 30-June-2020	PP
17.	PP	Daily operation record	Daily operation record of each treatment plant covering this monitoring period	PP
18.	PP	Grievance Book	Input / Grievance Expression Process Book put at the entrance of each swine farm	PP
19.	Henan Institute of Metrology	Calibration Reports	Calibration Reports to electronical truck scale with validity covering this monitoring period	PP
20.	General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China	Certificate of Metrological Authorization	Certificate of Metrological Authorization of Henan Institute of Metrology issued on 01-November-2017 valid to 31-October-2022	PP
21.	PP	Local Stakeholder Consultation Records during	Local stakeholder consultation process evidences: 70 filled questionnaires by attendance in the Meeting	PP

No	Author	Title	References to the document	Provider
		1 st monitoring period		
22.	PP and employees	Labor contracts	Labor contracts signed with employees for implementation of this project	PP
23.	PP	Pay rolls	Monthly salary slips for employees	PP
24.	PP	Technical Training Records	Technical Training Records of project 1. Training Notices 2. Training register list	PP
25.	PP	Record Keeping Book	Record Keeping Book including employees information	PP
26.	UNFCCC	CDM Approved Methodology ACM0010	“GHG emission reductions from manure management systems” (Version 08.0)	UNFCCC website
27.	VERRA	SD VISTA MR template	SD-VISTA-Project-Description-Template-v1.0	VERRA
28.	VERRA	VCS Standard	VCS Standard version 4.4	VCS website
29.	VERRA	SD VISTA Program Definitions	SD VISTA Program Definitions, v1.0	SD VISTA website
30.	VERRA	SD VISTA Program Guide	SD VISTA Program Guide, v1.0	SD VISTA website
31.	VERRA	SD VISTA	Sustainable Development Verified Impact Standard, v1.0	SD VISTA website
32.	Google	Google Earth Map	earth.google.com	Website
33.	State Administration for Market Regulation	National Enterprise Credit Information Publicity System	https://www.gsxt.gov.cn/	Website
34.	GS	Gold Standard	http://www.goldstandard.org/	Website
35.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website
36.	VCS	VCS	https://verra.org/project/vcs-program/	Website
37.	National Government	Law&Regulation	1. Farmland Irrigation Water Quality Standard (GB5084-2005); 2. Odor Pollutant Discharge Standard (GB14554-93); 3. Comprehensive Emission Standards for Air Polluted Areas (GB16297-1996); 4. Boiler Air Pollutant Emission Standard (GB13271-2014); 5. Environmental Noise Emission Standard for Industrial Enterprise Boundary (GB12348-2008) 6. Environmental Protection Law of P.R. China	Public Website

No	Author	Title	References to the document	Provider
			7. Law of the People's Republic of China on the Environmental Impact Assessment 8. Labor Law of the People's Republic of China 9. Constitution of the People's Republic of China 10. Law of the People's Republic of China on Land Administration	
38.	International Labor Organization	ILO	https://www.ilo.org/global/lang-en/index.htm	Public Website
39.	On-site VVB team	Photographs of Project Site	Photo taken by VVB during site visit including main equipment, swine farms, monitoring devices, etc.	On-site VVB team

APPENDIX 4: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	N/A	Section no.		Date:
Description of FAR				
Project participant response				Date:
Documentation provided by project participant				
VVB assessment				Date:

Table 2. CL from this verification

CL ID	01	Section no.	2.2.1	Date : 20/01/2023
Description of CL				
It is observed that the demonstration in section 2.2.1 is not in line with the request from SD VISta MR template. Clarification is requested.				
Project participant response				Date : 22/02/2023
The project maintains communication with four main stakeholders in the first monitoring period. These stakeholders are the local government, residents near the project site, raw material suppliers and equipment providers. Each group has adapted a different consultation process. The details are described below: Local government The project owner has provided or updated company qualification information financial auditing and environmental monitoring reports to government at the end of the year. This information was communicated via government affair platforms. In addition, the government regularly invited local companies to attend business service seminars via on-line meeting or site meeting, which provide assistance for business problems. Local residents near the project site During monitoring period of the project, questionnaire survey was conducted for stakeholder consultation from 30-August-2020 to 03-September-2020. From 09-August-2020 to 13-August-2020, The project proponent put up public announcements at the villages near the project site, and contacted the local authorities and other stakeholder groups to participate the survey by phone. The general information about the introduction of project, the date and the purpose of the questionnaire survey as well as the project proponent's phone number and email address were clearly conveyed via these public announcements and phone calls. In addition, there are no marginalized and /or vulnerable groups identified during this monitoring period, the project owner has established the mechanism for on-going communication with local stakeholders and marginalized and /or vulnerable groups. That is, a continuous Input / Grievance Expression Process Book is prepared at the entrance of each swine farm, and any stakeholders can express their opinions and views on the project. During this monitoring period, no comments or Input / Grievance Expression received from stakeholder. Raw material suppliers				

During the first monitoring period, the project arranged relevant liaison officer to be responsible for the communication with each swine farms, the liaison officer has established a communication line with the swine farm via emails, telephone calls and WeChat and provided real-time feedback. Equipment providers A long-term communication mechanism with the equipment providers has established before the implementation of the project. This part of communication mainly consists of timely feedback on problems found through the daily inspection of the company staffs and regular monthly or yearly equipment maintenance. In this monitoring period, there is no equipment failure occurs in project activities affecting baseline emissions.	
Documentation provided by project participant	
/1/- version 2.0	
VVB assessment	Date: 27/02/2023
The revised MR is checked, CTI confirmed that the demonstration has been updated which has been checked as in line with the SD VISta MR template. Refer to section 3.3.1 of this report for detail assessment. CL 01 is closed.	

CL ID	02	Section no.	2.2.3	Date : 20/01/2023
Description of CL				
It is observed that the actual training provided during this monitoring period is not clarified with detail information. Clarification is requested.				
Project participant response				Date : 22/02/2023
Trainings provided during this monitoring period are described as follow: In August 2020, training was conducted on the labour rights and interests. The training content mainly included introducing basic knowledge related to China's workers' rights, laws, regulation and the Core Labor Conventions of the International Labor Organization, and how to protect their own rights and interests. After the training, employee appeal channel was established, and arranged professional person to provide regular assistance to all workers. The biogas safe production trainings were conducted by safety department of the company in August 2020, March 2021 and May 2022, respectively. In addition to reducing company risks, safe production is also an important part of protecting labor rights. The training is aimed at enhancing safety awareness, operating technical specifications, biogas safety management, emergency response measures and other aspects to strengthen employees' safety knowledge. Otherwise, the safety production manuals were distributed to all employees The technical skills of composting trainings were conducted on September 2020 and June 2021, respectively. The trainings were invited industry experts to introduce the knowledge of resource utilization of livestock and poultry manure waste, organic fertilizer production process, fermentation process control, rot maturity judgement (water, temperature, material ratio), raw materials selection and the utilization of bacterial agents. In August 2020 and December 2021, training on plant fire safety were organized respectively for safety department of company. In February 2021, training on GHG emission from the manure was conducted to management of company by the third-party consulting firm. The training included negative effect of GHG emission introduction, background of carbon emission reduction and climate change, basic requirements of Verra for issuance of carbon credits.				
Documentation provided by project participant				
/1/- version 2.0				
/24/				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the actual training provided during this monitoring period have been clarified which is verified as actual by checking the training records/24/. Hence, it is confirmed that the trainings have been provided to employees during this monitoring period. CL 02 is closed.				

CL ID	03	Section no.	2.2.4	Date : 20/01/2023
Description of CL				
It is observed that the work opportunities demonstration is not provided completely in line with the request of the SD VISta MR template. Clarification is requested.				
Project participant response				Date : 22/02/2023
Modify the content based on the SD VISta MR template as follows: The project provides equal job opportunities for local residents regardless of gender, race, religion, sexual orientation or any other basis. Prior to the project started, by posting the labor law propaganda materials, broadcasting in the village, the local residents are aware of their right to participate in the work, more residents could participate in the recruitment. A total of 14 people including 7 females and 7 males have been recruited since the project started. All the project policy on human resource, including but not limit to recruitment, salary and benefits, takes into account the labour laws of China to build an inclusive workplace and culture. In addition, the project owner established some rules about employee mutual assistance, aiming to improve the working skills, especially for women, marginalized and/or vulnerable groups.				
Documentation provided by project participant				
/1/- version 2.0				
/22/				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the demonstration has been clarified. The PP stated that the hiring profile is established according with the vacant position given an equal opportunity without any discrimination of age, sex, marital status, ethnicity, social status or religious convictions, political ideas or sexual orientation, and in compliance with the local law. The project makes an effort to hire locally as evidenced by the onsite interview with project developer and project workers. Hiring criteria are based on skill sets without any discrimination as defined in the labor contract/22/. During this monitoring period, the total number of the local residents who were provided by long-term technician jobs for project implementation and management is 14, and 7 of them are confirmed as women and they are paid monthly and equally with man for same positions. This is confirmed via checking the labor contract/22/ and on site interview with women employees. Hence, CTI confirmed that the project's hiring practices provide equal employment opportunities including management opportunities to all stakeholders, including women and marginalized and vulnerable people. It concludes that the project provides equal employment opportunities to all stakeholders. CL 03 is closed.				

CL ID	04	Section no.	2.2.5	Date : 20/01/2023
Description of CL				
It is observed that the worker's right demonstration is not provided completely in line with the request of the SD VISta MR template. ILO requirement and how to inform workers about their rights under relevant laws are all missing. Clarification is requested.				
Project participant response				Date : 22/02/2023
This project abides by all relevant China's workers' rights, laws, and regulations. The project ensures that any project employment is in conformance of the Core Labor Conventions of the International Labor Organization (ILO). The following conventions of the ILO have been ratified by the Government of China and are judged to be "In Force" in China by the ILO. 1) C029–Forced Labour Convention, 1930 (No. 29) 2) C100–Equal Remuneration Convention, 1951 (No.100) 3) C105–Abolition of Forced Labour Convention, 1957 (No. 105) 4) C111–Discrimination (Employment and Occupation) Convention, C1958 (No.111) 5) C138–Minimum Age Convention, 1937 (No.138)				

6) C182–Worst Forms of Child Labor Convention, 1999 (No.182)	
Contract will be signed with each employee to state specific rights, obligations and benefits of the job. Forced labour and child labour are forbidden by the project. Everyone is free to join or the leave the project. The project owner abides labour laws and local requirements of China to provide a safe and fair work environment for the employees. There can be regular new-employee training provided to workers before they started the job, which clearly indicates their rights and mechanism for grievance appeal, including the regulation about rest and vacation, promotion, security, welfare, etc, and the workers' rights are guaranteed in the labour contracts for each worker.	
Documentation provided by project participant	
/1/- version 2.0 /22/ /37/ /38/	
VVB assessment	Date: 27/02/2023
The revised MR is checked, CTI confirmed that the demonstration has been clarified. The PD/1/ states that the project shall meet or exceed all applicable laws and regulations regarding workers' rights. Relevant law < Labor Law of the People's Republic of China>/37/ and Core Labor Conventions of the International Labor Organization (ILO)/38/ to which the PP have to comply is checked by CTI, this law is confirmed as the national law to guarantee the employment's right, health and safety. The hiring process is governed by the labour code and all workers have a contract in which its duties, rights and laws that protect them are reported. This is confirmed via checking the labor contract/22/ and on site interview with representatives from employees. Thus CTI is able to confirm that the project has exceeded all local labor requirements and ensured that all workers were apprised of their rights, complying with the Core Labour Conventions of the ILO/38/. No labor conflicts were evidenced during the interviews with employees. CL 04 is closed.	

CL ID	05	Section no.	2.2.6	Date : 20/01/2023
Description of CL				
PP stated that project is in compliance with local and national laws on Environmental, Health and Safety, however, the exact laws are not provided. Clarification is requested.				
Project participant response				Date : 22/02/2023
The project owner has referenced Labor Law of the People's Republic of China and adapted them to meet the local conditions to ensure workers' health and safety. The workers' health and safety policy, including items covering the health insurance scheme for workplace accidents and evacuation plans is made available for workers.				
Documentation provided by project participant				
/1/- version 2.0 /37/				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the exact laws has been clarified which has been verified as correct by checking the related laws and regulations /37/. CL 05 is closed.				

CL ID	06	Section no.	2.2.8	Date : 20/01/2023
Description of CL				
The actual status of how the stakeholder access to project documentation during this monitoring period is not clarified.				
Project participant response				Date : 22/02/2023
The website link (https://registry.terra.org/app/projectDetail/VCS/2876) is added.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023

The revised MR is checked, CTI confirmed that the access approach to project documentation has been clarified.

The full project documentation has been published on VERRA website for public comments as per checking the VCS website (<https://registry.verra.org/app/projectDetail/VCS/2876>). Thus the local stakeholders can easily download documents from the website. The project document, monitoring reports including the monitoring results and other relevant documents will be provided as requested in a timely manner once requested by local stakeholders which is confirmed by PP and interview with local stakeholders. Furthermore, all the stakeholders can contact the project owner via telephone, email or We Chat regarding project documentation of every milestone of the project development, including registered, issuance, etc.

In conclusion, based on the testimonies of local stakeholders regarding the well-established communication channels with the project management, that the project has and will continue to make project documentation accessible to all stakeholders.

CL 06 is closed.

CL ID	07	Section no.	2.2.9	Date : 20/01/2023
Description of CL				
The information to stakeholders on assessment process is not clarified based on the actual process.				
Project participant response				Date : 22/02/2023
The validation and verification site visit were held on 02-June-2022, PP have informed all stakeholders to attend this meeting on 20-May-2022, to ensure that assessor would be able to independently ask questions of all stakeholders regarding project consultations.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the information to stakeholders on assessment process has been clarified based on the actual process.				
In particular the project proponent informed and explained about the means of the verification process through email, telephone or We Chat as requested before the verification site visit took place as confirmed by site interview with local stakeholders and they will call if they have any issues about the project at anytime. This was also confirmed by the PP and interview with local stakeholders during the site visit.				
All interviewees were well aware of the nature of the audit process and declared being informed of the auditors visit with anticipation. Hence CTI confirmed that all stakeholders are likely to know of future assessments.				
CL 07 is closed.				

CL ID	08	Section no.	2.3.4	Date : 20/01/2023
Description of CL				
PP is not clarify that why there are no negative effects on the land or resources due to the project activity.				
Project participant response				Date : 22/02/2023
Before the construction of the project, the project land belongs to the state-owned land. PP had granted permission to operate in their areas of jurisdiction and paid land use tax in accordance with The Law of Land Administration of the People's Republic of China. So, there are no negative effects on the land or resources due to the project activity, and allocation of restitution or compensation to any parties is not required.				
Documentation provided by project participant				
/1/- version 2.0				
/37/				
VVB assessment				Date: 27/02/2023

The revised MR is checked, CTI confirmed that the clarification has been added.
As assessed above, the project land belongs to the state-owned land. PP had granted permission to operate in their areas of jurisdiction and paid land use tax in accordance with Law of the People's Republic of China on Land Administration/37/, hence there are no negative effects on the land or resources due to the project.
Therefore, the allocation of restitution or compensation to any parties is not required.
CL 08 is closed.

CL ID	09	Section no.	2.3.5	Date : 20/01/2023
Description of CL				
PP is not clarify that why no removal or relocation will occur as a result of this project.				
Project participant response				Date : 22/02/2023
During the first monitoring period, the project activities have not lead to removal or relocation of property rights holders from their lands or territories, and have not force rights holders to relocate activities important to their culture or livelihood.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the clarification has been added. As assessed above, project land belongs to the state-owned land, before the construction of the project, the land here was vacant and didn't have any negative effects on their livelihood and culture. Hence there are no activities lead to involuntary removal or relocation of property rights holders from their lands or territories, or force rights holders to relocate activities important to their culture or livelihood involved in the project. Therefore, no removing property rights holders from their lands or territories occurred under the project implementation. CL 09 is closed.				

CL ID	10	Section no.	3.1	Date : 20/01/2023
Description of CL				
It is observed that the actual training provided during this monitoring period is not clarified to support the actual impacts. Clarification is requested.				
Project participant response				Date : 22/02/2023
The training provided during this monitoring period is added as follows: In August 2020, training was conducted on the labour rights and interests. The training content mainly included introducing basic knowledge related to China's workers' rights, laws, regulation and the Core Labor Conventions of the International Labor Organization, and how to protect their own rights and interests. After the training, employee appeal channel was established, and arranged professional person to provide regular assistance to all workers. The biogas safe production trainings were conducted by safety department of the company in August 2020, March 2021 and May 2022, respectively. In addition to reducing company risks, safe production is also an important part of protecting labor rights. The training is aimed at enhancing safety awareness, operating technical specifications, biogas safety management, emergency response measures and other aspects to strengthen employees' safety knowledge. Otherwise, the safety production manuals were was distributed to all employees The technical skills of composting trainings were conducted on September 2020 and June 2021, respectively. The trainings were invited industry experts to introduce the knowledge of resource utilization of livestock and poultry manure waste, organic fertilizer production process, fermentation process control, rot maturity judgement (water, temperature, material ratio), raw materials selection and the utilization of bacterial agents. In August 2020 and December 2021, training on plant fire safety were organized respectively for safety department of company. In May 2021, training on GHG emission from the manure was conducted to management of company				

by the third-party consulting firm. The training included negative effect of GHG emission introduction, background of carbon emission reduction and climate change, basic requirements of Verra for issuance of carbon credits. In addition, the positive impacts on economic conditions and agriculture are added, please refer to the table impact #4 and impact #5 in section 3.1 for details, and there is no negative impact on the stakeholders.	
Documentation provided by project participant	
/1/- version 2.0 /24/	
VVB assessment	Date: 27/02/2023
The revised MR is checked, CTI confirmed that the actual training provided during this monitoring period have been clarified which is verified as actual by checking the training records/24/. Hence, it is confirmed that the trainings have been provided to employees during this monitoring period. CL 10 is closed.	

Table 3. CAR from this verification

CAR ID	01	Section no.	Cover	Date : 20/01/2023
Description of CAR				
In cover page, 1. Information of Assessor Contact is missing. 2. History of SD VISta Status is not provided. 3. Expected Future Assessment Schedule is not clear as PP intend to combine the validation and 1 st verification process of the SD.				
Project participant response				Date : 22/02/2023
1. The Information of Assessor Contact is added in the latest JPM. 2. The SD VISta is under validation and verification. 3. The initial SD VISta verification is happening concurrently with the validation. It is estimated that the Project will verify every year subsequently.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
1. The revised MR is checked, CTI confirmed that Assessor Contact information has been added accordingly. 2. The revised MR is checked, CTI confirmed that history has been correctly provided. 3. The revised MR is checked, CTI confirmed that Expected Future Assessment Schedule has been updated to be reasonable. CAR 01 is closed.				

CAR ID	02	Section no.	1	Date : 20/01/2023
Description of CAR				
For table 1, 1. The contribution value on SDG indicator for 7.2.1 is not correct. 2. The net impact on SDG indicator for 8.5.2 is not correct.				
Project participant response				Date : 22/02/2023
1. The contribution value on SDG indicator for 7.2.1 is revised to increase. 2. The net impact on SDG indicator for 8.5.2 is revised to decrease.				
Documentation provided by project participant				
/1/- version 2.0 /5/				
VVB assessment				Date: 27/02/2023

1. The revised MR is checked, CTI confirmed that the value is revised to be correct and same to the VCS Join-PD-MR/5/.
2. The revised MR is checked, CTI confirmed that the revision is reasonable for the indicator. CAR 02 is closed.

CAR ID	03	Section no.	2.1.2	Date : 20/01/2023
Description of CAR				
The project activities involved in the project that will achieve net sustainable development benefits are not listed clearly and how these activities achieve the SD benefits are not specified clearly.				
Project participant response				Date : 22/02/2023
The activity is achieved through the implementation of the following core project activities: Biogas is captured for heat production The biogas generated during the treatment process is captured for heat generation, the heat generated are all used by the operation of AWMSSs and the 7 swine farms, which was provided by the coal-fired boiler without the project. Prior to the implementation of the project, all manure waste produced from the existing 7 swine farms was left to decay in 7 uncovered anaerobic lagoons at the swine farms and methane is emitted to the atmosphere directly without any methane recovery and destruction facility. The project activity reduces of GHG and provides clean energy. Compared with coal, biogas is a kind of clean and renewable energy. The project provides useful reference for the resourceful treatment technology of animal manure. total 333,770 heads of market swine, 34,650 heads of breeding swine are included in these 7 swine farms and total 4,678.05*104m3 of biogas are produced. Provide employment opportunity Muyuan WJZ AWMSS GHG Mitigation Project in Henan Province Project currently employs 14 full time staff members. This includes 7 female staff and 7 male staff responsible for daily managing, data recording and operation maintaining when necessary. The project activity contributes to SDG 8 – Decent Work and Economic Growth, by aiming to increase well-paying employment opportunities by hiring residents in the area. Furthermore, the project is implementing an Anti-Discrimination Recruitment Policy ensuring that the hiring and recruitment process does not discriminate based on gender and makes sure that an adequate number of women and members of other underrepresented groups are encouraged and have the opportunity to apply. Organic fertilizer production The project installs 7 sets of animal waste management system (AWMSSs) to treat the manure which product the bio-organic fertilizers. The reuse of swine manure reduces the methane emissions from uncovered anaerobic lagoons in the project scenario. After liquid-solid separation, the solid will be treated in aerobic composting system and the organic fertilizers will be produced, which partly will be supplied to the farmers living around free and partly will be sold as fertilizer. The project activity would help ease their pressures in the economy. The project activity reduces of GHG in the atmosphere through avoiding methane emissions from anaerobic treatment of swine manure and wastewater. Total emission reductions achieved in this monitoring period are 444,807 tCO2e. Otherwise, 115,215tons of organic fertilizers is produced during the first monitoring period. The project activity has identified that it supports SDG 12 (Responsible Consumption and Production). This is because the swine manure can be reused and recycled to produce organic fertilizers. The activity also contributes to SDG 13 -Climate Action as the composting process avoid potential GHG emissions that would have been generated if the manure treated in uncovered anaerobic lagoons.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the project activities have been correctly provided which is consistent with the PD. CAR 03 is closed.				

CAR ID	04	Section no.	2.1.3	Date : 20/01/2023
Description of CAR				
For the implementation schedule of the project,				
- The time period of the project activities that achieves net sustainable development benefits during this monitoring period re not listed. - The project start date is not defined as per the SD VISta version 1.0. - The process of the VCS and SD VISta need to be provided as per the actual status of the two schemes.				
Project participant response				Date : 22/02/2023
- The time period of the project activities involved in SDG targets are added. The details can refer to the table in section 2.1.3 of the latest JPM. - The project start date which activities that lead to the generation of sustainable development benefits are implemented is 15-July-2020. - The process of the VCS and SD VISta are added. The details can refer to the table in section 2.1.3 of the latest JPM.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
- The revised MR is checked, CTI confirmed that time period of the project activities have been added and verified as correct and actual. - The revised MR is checked, CTI confirmed that project start date has been defined correctly in line with the SD VISta version 1.0. - The revised MR is checked, CTI confirmed that process of the VCS and SD VISta have been provided as per the actual status of the two schemes.				
CAR 04 is closed.				

CAR ID	05	Section no.	2.1.8	Date : 20/01/2023
Description of CAR				
- For all the threats listed in the table, the results that created by the threats are missing. - For the last row, the threat of Leakage of manure waste into ground water is not specified clearly.				
Project participant response				Date : 22/02/2023
- The results created by threats is added. - Add the following description : Leakage of manure waste into ground water that will cause the water pollution.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
- The revised MR is checked, CTI confirmed that results that created by the threats have been provided. - The revised MR is checked, CTI confirmed that description has been updated to be reasonable. Refer to section 3.2.6 of this report for detail assessment.				
CAR 05 is closed.				

CAR ID	06	Section no.	2.1.9	Date : 20/01/2023
Description of CAR				
The description in section 2.1.11 is not in line with the SD VISta MR template that need to describe the plan to maintain and enhance project benefits after project activities have ceased.				
Project participant response				Date : 22/02/2023
To maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime, the project proponent has taken a series of actions.				
Project adopts the advanced technology and equipment to reuse the animal manure, which is in line with the current policies and local development plans. Thus, even if the project is ceased, the				

project will serve as a reference for the local government to further develop similar projects and improve the local ability in waste recycling.	
2) As the project runs, local residents will feel the benefits of carbon reduction project, such as the project activities reduce odors from animal waste, get the fertilizers for free, etc. At the same time, during the annual training, the project proponent has also repeatedly emphasized the importance of carbon reduction and carbon neutrality and popularized related knowledge. Therefore, local residents have a deeper understanding of the significance of environmental protection and carbon reduction. Beyond the lifetime of this project, local residents can continue to improve themselves in this area because they already have the knowledge base.	
Documentation provided by project participant	
/1/- version 2.0	
VVB assessment	Date: 27/02/2023
The revised MR is checked, CTI confirmed that the description has been updated to be in line with the SD VISta PD template request. Refer to section 3.2.7 of this report for detail assessment. CAR 06 is closed.	

CAR ID	07	Section no.	4.3	Date : 20/01/2023
Description of CAR				
The information provided in section 4.3 is not in line with the SD VISta MR template.				
Project participant response				Date : 22/02/2023
The description of this section is revised in updated version according to the SD VISta PD template. The details as follows: The anticipated net impact of project activity is positive for natural capital and ecosystem services, since the project activity is mainly through introducing an aerobic composting system to treat the swine manure, thereby realizing the recycling of waste and reducing its methane emissions during the anaerobic treatment. And all the heat generated will be used by swine farms which was provided by the coal-fired boiler without the project. The project activity will help to promote the use of renewable energy. This project is put into operation on 15-July-2020, the GHG emission reduction generated is about 3,216,630 tCO ₂ e from 15-July-2020 to 14-July-2030, with an average annual GHG emission reduction of 321,663 tCO ₂ e. It is estimated that approximately 1,637 tons of animal manure will be handled daily by the AWMS. The biogas released during the anaerobic digestion will be collected and used for heat production. The heat production is estimated to be 657,340GJ. 3,287.15*10 ⁴ m ³ of biogas are expected to be generated by the project. In the first monitoring period from 15-July-2020 to 31-March-2022, the actual amount of GHG emission avoided is 444,807 tCO ₂ e. The amount of the organic fertilizers generated are 115,215tons that has been generated during the monitoring period. The amount of biogas recycled are 4,678.05*10 ⁴ m ³ that has been captured for heat generation during the monitoring period.				
Documentation provided by project participant				
/1/- version 2.0				
VVB assessment				Date: 27/02/2023
The revised MR is checked, CTI confirmed that the information provided in section 4.4 is in line with the SD VISta MR template request. Refer to section 5.1.4 of this report for detail assessment. CAR 07 is closed.				

Table 4.FAR from this verification

FAR ID	N/A	Section No.	-	Date: -
Description of FAR				
Project participant response				Date: -

Documentation provided by project participant	
VVB assessment	Date: