

PROJECT REVIEW REPORT

This project review report includes findings raised during Verra’s review of the project specified below. The VVB must address the findings before the project request can be considered for approval by Verra. The project review report will be made publicly available on the Verra Registry. Confidential information may be provided in separate attachments.

Project ID	3950
Project Name	GANSU HUI COUNTY MUGE SWINE FARM MANURE MANAGEMENT SYSTEM GHG MITIGATION PROJECT
Review Type	Registration & Verification Approval
Program(s)	VCS Program
Verification Period	01 June 2021 – 31 January 2023
Project Proponent	Hui County Xingjiang Muge Breeding Co., LTD.
Methodology	ACM0010“GHG emission reductions from manure management systems (Version 08.0)”
VVB	CTI Certification Co., Ltd
Assessment Criteria	VCS Standard, v4.4
Date of First Issue	06 September 2023
Review Conclusion	Approved
Date of Final Issue	04 March 2024

FINDINGS

1 Further information on existing scenario prior to implementation			
	<u>Issue</u> The Joint Project Description and Monitoring Report (Joint PD-MR) (e.g. page 10 and 26) states that project activity is to install a new AWMS to treat the swine manure in an existing swine farm commenced on 01/01/2021. However, it is not clear whether there was an existing anaerobic manure treatment system (e.g. open lagoon) prior to the construction of AWMS, considering the time gap between AWMS construction on 01/03/2021 and the pig farm commencement on 01/01/2021.	Round 1	Closed
	<u>Action Required</u> 1.The VVB must ensure that PP provides information on the treatment of the swine manure prior to the project implementation. The VVB shall provide information on how it has validated that information. 2. The VVB must validate this information and update Joint Validation and Verification Report (JVVR) as required.	<u>VVB Response</u> By reviewing the swine farm’s the record certificate, the start order, construction contract, the invoices for swine purchased in 01/2021, the photos of the uncovered anaerobic lagoon and on-site interview with PP, the assessment team confirmed that before the commencement of this project, the waste from the swine farm was managed by an uncovered anaerobic lagoon measuring 100m x 90m x 4m. PP has added the information on the treatment of the swine manure prior to the project implementation in section 1.11 of revised Joint PD-MR (Version 03 dated 15/10/2023), which also confirmed in Section 3.1 of revised Joint Validation and Verification Report (JVVR) (Version 1.1 dated 16/10/2023).	
	<u>Program Rule(s)</u> <u>Section 1.11 of Joint Project Description & Monitoring Report Template v4.2.</u>	<u>Verra Response</u> VVB has confirmed the baseline scenario and additional information has been provided. This finding is closed.	
2 Assessment is missing on the appropriateness of data and parameters used in financial calculations			
	<u>Issue</u> The JVVR (i.e. section 3.4.5 and 3.4.4) does not provide information on how the VVB has validated the appropriateness of all input values applied in the investment analysis.	Round 1	Closed
	<u>Action Required</u> 1. The VVB must ensure that the assumed input values applied	<u>VVB Response</u> CTI has confirmed that all assumed input values in the investment analysis are appropriate and has provided a detailed supplementary validation process in Section 3.4.4 of the revised JVVR (Version 1.1 dated 16/10/2023).	

in the investment analysis are appropriate; 2. The VVB must clarify how it has validated the appropriateness of each input value applied in the investment analysis, e.g. through methods including but not limited to cross-checking with the actual values. <u>Program Rule(s)</u> Section 3.4.5 of Joint Validation and Verification Report Template, v4.2.	<u>Verra Response</u> VVB has provided confirmation on investment analysis. This finding is closed.	
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3 Further information on the correctness and appropriateness of the investment analysis		
<u>Issue</u> 1. The biogas generated (i.e. 4.8259 million m³ per year) by the project activity is captured for heat generation, which will be used for daily operation of the swine farm. However, no cost savings due to the heat supply to the swine farm is considered in the investment analysis. <u>Action Required</u> 1. The VVB must ensure that the investment analysis conducted is correct and appropriate. 2. The VVB must clarify how it has validated the correctness and appropriateness of the investment analysis, in particular not considering the cost savings as part of the project revenue. <u>Program Rule(s)</u> Section 3.4.5 of Joint Validation and Verification Report Template, v4.2.	Round 1 <u>VVB Response</u> After reviewing the PER, contracts for the construction and procurement of equipment for the AWMS, contracts for the renovation and procurement of equipment for the swine farm's heating system , annual O&M cost details for AWMS, biogas heating equipment maintenance contracts, inspection labor contracts, and disinfectant purchase contracts, CTI confirms that all input parameters used in the initial investment analysis of the project (as detailed in Section 3.4.4 of this report) are derived from the PER. Notably, the initial investment analysis and the PER did not include data on investment, operational costs, or income related to biogas utilization. This implies that the PP did not consider any income generated from biogas utilization nor the investment and operational costs of the heating system as cash outflows in their initial investment analysis. The PP recalculated the IRR by including coal-saving income, actual investment in the heating system's renovation, and actual operational costs as inputs. This recalculation is detailed in Annex 2 of the Joint-PD-MR and the IRR Calculation Table Considering Coal-Saving Income. CTI validated the reasonableness of these new inputs by examining the aforementioned contracts and cost details. It was confirmed by CTI that even when considering the cost savings from biogas utilization, the IRR still remains below the	Closed

		benchmark. PP has added the investment analysis, considering the cost savings as part of the project revenue in Annex 2 of revised Joint PD-MR (Version 03 dated 15/10/2023), which also confirmed in Annex 5 of revised JVVR (Version 1.1 dated 16/10/2023).	
		<u>Verra Response</u> The cost savings have now been added to IRR calculation. This finding is closed.	

4 Completeness and consistency of monitoring plan			
	<u>Issue</u> The monitoring parameter listed in section 6.2 of the JPM and those listed in section 3.4.8 of the JVVR are not consistent, e.g. parameter $\rho_{i,t}$ (Density of greenhouse gas i in the gaseous stream in time interval t). <u>Action Required</u> The VVB must explain how it has validated the completeness and consistency of the monitoring plan. <u>Program Rule(s)</u> <u>Section 6.2 of Joint Project Description & Monitoring Report Template v4.2.</u>	Round 1 <u>VVB Response</u> Upon reviewing the project's monitoring manual and comparing it with the monitoring parameters required by the methodology and relevant tools, and through on-site visits with the project's monitoring staff, CTI has confirmed that the project's monitoring plan complies with the methodology and tool requirements. While the Section 6.2 of the initial Joint PD-MR (Version 02 dated 30/04/2023) omitted the parameter $\rho_{i,t}$, CTI confirmed that the Section 6.2 of the revised JPM (Version 03 dated 15/10/2023) now includes the parameter $\rho_{i,t}$. Additionally, CTI has supplemented the validation process for the $NEX_{LT,y}$ parameter in the Section 3.4.8 of revised JVVR (Version 1.1 dated 16/10/2023). <u>Verra Response</u> The parameters have now been consistently reported. This finding is closed.	Closed

5 Project emissions from the consumption of fossil fuels			
	<u>Issue</u> The Joint PD-MR indicates that the project emissions from the use	Round 1 <u>VVB Response</u>	Closed

	of fossil in the calculation of emission reductions is Zero. However, there is lack of clear explanation of how the VVB has verified that no fossil fuel usage occurred during the monitoring period. <u>Action Required</u> 1) The VVB shall confirm how they have verified that no fossil fuel usage happened during the current monitoring period and that the emission reduction claims are conservative in nature. 2) The VVB shall confirm how project emissions from use of fossil fuel will be accounted in emergency situations when grid electricity is not available. <u>Program Rule(s)</u> Section 5.2 of Joint Project Description & Monitoring Report Template v4.2.	1) After reviewing the operational records, conducting onsite inspections, and interviewing with staff, CTI confirmed that there was no equipment that uses fossil fuels on project site, so no fossil fuels were used at the project site, meaning $PE_{FC}=0$. CTI has provided additional details on this validation process in Section 4.1 of the revised JVVR (Version 1.1 dated 16/10/2023). 2) After reviewing the PER and EIA, conducting onsite inspections, and interviewing with local officials, CTI confirmed that the local electricity supply is reliable, with infrequent power outages that do not last long. The project's primary equipment – the anaerobic digestion tank – will not be affected by these brief power interruptions. Therefore, no equipment that consumes fossil fuels, such as diesel generators, has been installed at the project site. PP has added the information about no equipment used fossil fuels in Section 5.2 of revised Joint PD-MR (Version 03 dated 15/10/2023), which also confirmed in Section 3.4.6 of revised JVVR (Version 1.1 dated 16/10/2023). <u>Verra Response</u> VVB has confirmed that now fossil fuel consuming equipments have been installed. This finding is closed.	
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6 Incomplete assessment on option used to calculate $NEX_{LT,y}$			
	<u>Issue</u> ACM0010, v.08.0, Appendix 2 Procedure for estimating $NEX_{LT,y}$ requires that for the selection of Option 2, the absence of availability of project specific information on protein intake, should be justified in the project description. However, the Joint PD-MR does not justify this lack of information. <u>Action Required</u> 1) The VVB must ensure that the project proponent clearly justifies the absence of availability of project specific information on protein intake in the project description.	Round 1 <u>VVB Response</u> As outlined in Appendix 2 of the applied methodology, two options are provided. For this project, after reviewing related national standards and other public information, CTI confirmed that neither specific information on the portion of nitrogen intake nor site-specific national or regional data is available. Consequently, Option 2 has been adopted for calculating $NEX_{LT,y}$. While the Section 5.1 of the initial Joint PD-MR (Version 02 dated 30/04/2023) omitted the justification about the absence of	Closed

	2) The VVB must validate that the selection of Option 2 to calculate NEXLT,y has been properly justified by the project proponent.	availability of project specific information on protein intake , CTI confirmed that PP has added the justification in Section 5.1 of revised Joint PD-MR (Version 03 dated 15/10/2023), which also confirmed in Section 3.4.6 of revised JVVR (Version 1.1 dated 16/10/2023).	
	<u>Program Rule(s)</u> ACM0010, v.08.0, Appendix 2	<u>Verra Response</u> The justification for selected option has been provided. This finding is closed.	

7	Identified sectoral scope of the project.		
	<u>Issue</u> Section 1.2 of the project description includes scope 13 as a scope applicable to the project activity, however, as per the methodology the applicable scopes are 13 and 15. <u>Action Required</u> The VVB must ensure that the project proponent identifies applicable sectoral scopes to the project activity. The VVB must validate that the sectoral scopes identified by the project proponent are applicable to the project activity. <u>Program Rule(s)</u> ACM0010, v.08.0	Round 1	Closed
		<u>VVB Response</u> Through the onsite visit, interviewing the project developer and reviewing the Joint-PD-MR, it was confirmed that the project aims to replace the current open anaerobic lagoons with a new Animal Manure Management Systems featuring closed anaerobic digesters at the existing swine farm in Gansu Province. The system will treat the manure and wastewater from the swine farm to avoid methane emissions generated in the baseline uncovered anaerobic lagoons and the biogas produced is recovered and combusted for heat generation and used by the swine farm and AWMS. Therefore, it was confirmed that the sectoral scope are Scope 13 Waste handling and disposal and Scope 15 as per ACM0010 (Version 08), the UNFCCC Standard “Applicability of sectoral scopes version 01.0” and para. A.1.2 in Appendix 1 of VCS standard (VError! Reference source not found.). PP has revised the information on applicable sectoral scopes to the project activity in section 1.2 of revised Joint PD-MR (Version 03 dated 15/10/2023), which also confirmed in Section 3.1 of	

		revised JVR (Version 1.1 dated 16/10/2023).	
		<u>Verra Response</u> The sectoral scopes have been corrected. This finding is closed.	