

# PROJECT REVIEW REPORT

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

<b>Review Type</b>	Registration & Verification
<b>Project ID</b>	2706
<b>Project Name</b>	Shuangbaotai AWMS GHG Mitigation Project in Jiangsu Province
<b>Program(s)</b>	VCS
<b>Verification Period</b>	10-June-2020 to 31-December-2021
<b>Project Proponent</b>	Shuangbaotai Animal Husbandry Group Co., Ltd.
<b>Methodology</b>	ACM0001 ‘Flaring or use of landfill gas’ (Version 19)
<b>VVB</b>	Shenzhen CTI International Certification Co., Ltd
<b>Assessment Criteria</b>	VCS Standard, v4.2, ACM0010 v.19
<b>Date of First Issue</b>	01-October-2022
<b>Review Conclusion</b>	Approved
<b>Date of Final Issue</b>	16 December 2022

FINDINGS			
#	Description	Response	Status
<u>1</u>	<p><b>CDM Project Type incorrect</b></p> <p><u>Issue</u></p> <p>The statement ‘<i>The project type of this project belongs to Type III “Other project activities not included in Type I or Type II that result in GHG emission reductions not exceeding 60 kt CO2e per year in any year of the crediting period”</i>’, is not correct as it relates to SSC project activities</p> <p><u>Action item</u></p> <p>The VVB must ensure the statement is removed and the section is completed in line with the applied VCS template</p> <p><u>Program rule(s) or methodology section</u></p> <p>VCS Standard v4.2,                      Joint Project Description &amp; Monitoring Report, v4.1, Section 1.2</p>	<p><b>Round1:</b></p> <p>VVB Response:</p> <p>The project type of this project belongs to Type III “Other project activities not included in Type I or Type II”, which is confirmed as updated in Section 1.2 of the Joint PD &amp; MR and verified as in line with the request of VCS template.</p> <p>Verra Review:</p> <p>The revision requested is confirmed</p> <p><b>Round 2:</b></p>	Closed
<u>2</u>	<p><b>Incorrect baseline manure production value</b></p> <p><u>Issue</u></p> <p>In Section 1.11 (page 12), the Joint PD-MR includes a value of 33,7920 tons. The value shall be corrected</p> <p><u>Action item</u></p>	<p><b>Round1:</b></p> <p>VVB Response:</p> <p>The value of 33,7920 has been updated to be 337,920 in Section 1.11 of the Joint PD &amp; MR which is verified as correct.</p> <p>Verra Review:</p> <p>The value has been corrected to 337,920 tons of manure</p>	Closed

	<p>The VVB is required to ensure the value is corrected and the VR revised accordingly, where applicable.</p> <p><b><u>Program rule(s) or methodology section</u></b></p> <p><i>Joint Project Description &amp; Monitoring Report, v4.1, Section 1.11</i></p>	<p><b>Round 2:</b></p>	
<p><b>3</b></p>	<p><b>Inconsistent in treatment capacities</b></p> <p><b><u>Issue</u></b></p> <p>The treatment capacities total 685 tons/day (120+180+85+300). However, sections 1.1 and 1.4 state 676 tons/day.</p> <p><b><u>Action item</u></b></p> <p>The VVB must ensure that section 1.11 of the Joint PD-MR and other sections report consistent information</p> <p><b><u>Program rule(s) or methodology section</u></b></p> <p><i>Joint Project Description &amp; Monitoring Report, v4.1, Section 1.11</i></p>	<p><b>Round1:</b></p> <p>VVB Response:</p> <p>The treatment capacity of the AWMSs in this project has been updated to be 685 tons/day in the sections 1.1 and 1.4 of Joint PD &amp; MR which is verified as correct.</p> <p>Verra Review:</p> <p>Both sections have been corrected to 685 tons per day</p> <p><b>Round 2:</b></p>	<p>Closed</p>
<p><b>4</b></p>	<p><b>Applicability Condition</b></p> <p><b><u>Issue</u></b></p> <p>In the first applicability condition of TOOL14, the Joint PD-MR states that 'There was no biogas for flaring during this monitoring period. And 'So, the project meets the (a) and (c).'</p> <p><b><u>Action item</u></b></p> <p>The VVB must ensure that applicability conditions are not determined by one monitoring period. And note that there could be excess gas for flaring in the subsequent monitoring periods.</p>	<p><b>Round1:</b></p> <p>VVB Response:</p> <p>The updated JPM has been checked, VVB confirmed that the applicability condition of TOOL14 is revised in Section 3.2. If there is any surplus biogas for flaring during in the subsequent monitoring period, then the CH<sub>4</sub> emissions from flaring of biogas should be included into project emission. So, the project meets the (a), (c) and (d).</p> <p>The section 3.4.2 of the VVR has been updated accordingly.</p> <p>Verra Review:</p> <p>Applicability condition d) is now included</p> <p><b>Round 2:</b></p>	<p>Closed</p>

therefore, applicability condition d) is also applicable

**Program rule(s) or methodology section**

*Joint Project Description & Monitoring Report, v4.1, Section 3.2*

**5**

**Additionality Argument**

**Round1:**

Closed

**Issue**

VVB Response:

- a) It is not clear how the VCU income has been obtained.
- b) It is also not clear how avoided electricity import costs are factored in, if applicable
- c) In the sensitivity analysis, the PP is required to use IRR term consistently and not interchange with NPV

a) For demonstration the additionality, the VCU income will be estimated to estimate the IRR with carbon revenue, so the values are estimated ones not the actual income obtained. The price of VCU in JPM is 15 RMB/ton, which is sourced from Project Evaluation Report. Project Evaluation Report was completed in January 2020 by an authorized entity i.e., Jiangsu Engineering Consulting Center. This VCU price is estimated based on the market price at the time the report was completed. Furthermore, the price of global emission offset (GEO) is in the range of 3.76US Dollar/ton -4.0 US Dollar/ton according to the CBL website (<https://www.cmegroup.com/markets/energy/emissions/cbl-global-emissions-offset.quotes.html>), which equals to about 26RMB/ton. Therefore estimated 15 RMB/ton of the VCU Price in JPM is reasonable, and the VCU income is equal to the estimated ER value multiply with this price. So, the expected VCU revenue for the project is verified as reasonable and deemed as can be obtained.

**Action item**

- a) The VVB is required to explain the steps taken to validate the VCU price
- b) The VVB shall further explain why avoided electricity imports costs are not factored into the calculations
- c) The VVB shall also ensure that terms are applied consistently

b) Via site inspection, VVB confirmed that after the implementation of the project, the electricity generated through biogas are all used by the AWMSs and the swine farms, which can reduce the purchase of electricity from the grid company. However, via checking the paragraph 11 of the applied methodology ACM0010 (Version 08.0), VVB confirmed that the spatial extent of the project boundary encompasses the site of the AWMS(s), including the flare or energy and/or heat generation equipment and the power/heat source, which means that swine farms do not belong to the project and are not included in the project boundary. Hence, for this project, the only revenue and cash inflow is the sales of organic fertilizers for the project.

**Program rule(s) or methodology section**

*Joint Project Description & Monitoring Report, v4.1, Section 3.4*

In addition, although the swine farms and the project belong to the same company, they belong to different project departments of the company (Department of Livestock and Poultry and Department of Environmental Protection). The finances of each project department are settled independently. Via checking the document named "Offset agreement-Shuangbaotai Jiangsu" signed between the two project departments, it is confirmed that the income from manure raw materials and the revenue from electricity are almost equal according to the current market price of manure raw materials and the price of electricity. The swine farms therefore hand

over their manure to the project free of charge and the electricity generated by the project is also used by the swine farms free of charge. The two project departments no longer perform cost benefit calculations for these two parameters. Therefore, the fuel cost i.e., the cost of manure raw materials and the revenues from electricity saving of swine farms is not included in investment analysis, which is reasonable.

c) All the related description about NPV in the sensitivity analysis section of the Joint PD & MR has been updated to IRR accordingly which is verified by VVB as correct.

Verra Review:

- a) The justification for the estimated VCU price is accepted
- b) The project boundary encompasses the AWMS and the site of electricity/flaring/heat generation. Therefore, avoided electricity costs is not considered relevant
- c) The NPV reference is still found in several pages such as 39,41,42 & 44 of the PD as well as the spreadsheet calculation. The VVB is required to explain why two financial indicators are applied and referred in the document

**Round 2:**

VVB Response:

Two alternative scenarios are identified in Step2 in Section 3.4 of Joint PD & MR as per the methodological tool O2 “Combined tool to identify the baseline scenario and demonstrate additionality (Version07.0), then investment comparison is applied to demonstrate the most attractive the baseline scenario in Step 3. Hence, in the updated Joint PD & MR, only the financial indicator of NPV has been kept by PP and confirmed by VVB as correct and reasonable. And the IRR has been deleted as below reason:

The IRR shall be used as an indicator in apply the investment analysis as per paragraph 19 of Methodology ACM0010(Version 08.0). However, the latest version of Methodological Tool O2 should be used to identify the baseline scenario and demonstrate additionality as per paragraph 14 of the applied Methodology. As per paragraph 24 of Tool O2, benchmark analysis is mandatory for the following two situations,

- (a) The proposed project activity is developed as part of a portfolio of technologies delivering electricity to the power grid;
- (b) The project proponent is the only power supplier to supply power to the grid in the applicable geographical area (i.e., monopoly).

Via site inspection and checking the project design, VVB confirmed that the electricity generated will not be delivered to the power grid, so the benchmark analysis is not mandatory for the project. Then IRR is deleted reasonably.

Investment comparison analysis was selected for the investment analysis and sensitivity analysis. As per paragraph 25 of Tool 02, NPV is an eligible financial indicator and it is the most suitable indicator for decision making of the project activity. In summary, the financial indicator of NPV applied in the project is appropriate.

The updated Joint PD & MR is checked, VVB confirmed that the net cash flow of uncovered anaerobic lagoon is negative. As a result, the financial analysis is based on NPV comparison. By checking the updated NPV calculation sheet, VVB confirmed that NPV of project activity without VCS revenues is much lower than the NPV of current uncovered anaerobic lagoon. Therefore, the uncovered anaerobic lagoon is much more economic attractive and should be chosen as baseline scenario.

The sensitivity analysis is conducted to further demonstrate that the financial attractiveness of the two scenarios is robust to reasonable variations in the critical assumptions as per Paragraph 32 of Tool 02. To avoid any confusion, financial indicator of NPV is applied in sensitivity analysis and all the information related IRR has been deleted accordingly the revised Joint PD & MR and NPV calculation sheet are checked as confirmed by VVB as correct, also the related section in VVR has been updated too.

Verra Review:

The finding is sufficiently addressed to close

<p><b>6</b></p> <p><b>Inconsistent Leakage Provisions</b></p> <p><u>Issue</u></p> <p>Provisions for leakage calculations are included in Section 4.3. However, the same is excluded from the project boundary in Table 3-1 (Section 3.3)</p> <p><u>Action item</u></p> <p>The VVB must ensure that leakage provisions are provided in line with the applied methodology, and consistent with</p>	<p><b>Round1:</b></p> <p>VVB Response:</p> <p>As per paragraph 49 of the applied methodology ACM0010 (Version 08.0), leakage covers the emissions from land application of treated manure as well as the emissions related to anaerobic digestion in a digester, occurring outside the project boundary. The treated manure is applied to the soil as fertilizer by the project, which occurs outside the project boundary. Therefore, leakage should be calculated as per the requirement of applied methodology.</p> <p>As per paragraph 11 of the applied methodology ACM0010 (version 08.0), the spatial extent of the project boundary encompasses the site of the AWMS(s), including the flare or energy and/or heat generation equipment and the power/heat source. Therefore, the project boundary only includes the GHG</p>	<p>Closed</p>
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<p>Section 3.3 of the Joint PD-MR, and the VR</p> <p><b><u>Program rule(s) or methodology section</u></b></p> <p><i>Joint Project Description &amp; Monitoring Report, v4.1, Section 4.3</i></p>	<p>emissions from the anaerobic digesters, GHG emissions from the power generation equipment, GHG emissions from sludge treatment by aerobic composting and GHG emissions from opened flaring system in the 4 swine farms. Leakage occurs outside the project boundary. In summary, the description for project boundary in section 3.3 and emission sources in Table 3-1 are consistent with the applied methodology.</p> <p>Related information of Leakage has been added into the section 3.3 of JPM and corresponding description has been added into section 3.4.3 of the VVR accordingly.</p> <p>Verra Review:</p> <p>The Table 3-8 of the Joint PD-MR is found to be consistent with leakage provisions of the methodology</p> <p><b>Round 2:</b></p>	
<p><b>7</b></p> <p><b>Incorrect GWP values</b></p> <p><b><u>Issue</u></b></p> <p>In Sections 4.4, 6.2 and 6.3, the baseline, project and leakage ex-ante emission calculations do not take into account that the <math>GWP_{CH_4} / GWP_{N_2O}</math> values for the vintage 2020 are from AR4.</p> <p><b><u>Action item</u></b></p> <p>The VVB must ensure that the PP has revised the calculations, and the parameter tables in Section 5.1 indicate both values per vintage, and the VVB shall ensure that Section 3.4.8 is revised accordingly</p> <p><b><u>Program rule(s) or methodology section</u></b></p>	<p><b>Round1:</b></p> <p>VVB Response: Via checking the paragraph 3.14.4 of VCS standard 4.2, VVB confirmed that only the project that complete validation on or before 31 July 2021 may use GWP values from AR4 for ex-ante emission reduction estimate, and it shall use AR5 for ex-post calculation. For the project, the validation is confirmed as complete after 31 July 2021.</p> <p>Therefore, GWP value from AR5 should be applied for both ex-ante estimate and ex-post calculation for vintage 2020 which is verified as compliance with the requirement of the VCS standard 4.2.</p> <p>Then the original values in both JPM and VVR are verified as correct and no need to be changed.</p> <p>Verra Review:</p> <p>The <math>GWP_{CH_4} / GWP_{N_2O}</math> values are applied correctly following the guidance of the VCS Standard Section 3.14.4</p> <p><b>Round 2:</b></p>	<p>Closed</p>

*Joint Project Description & Monitoring Report, v4.1, Section 4.4, Section 6.2, Section 6.3*

**8** **Fixed MCF<sub>j</sub> Value** **Round1:** **Closed**

**Issue**

- a) In Section 4.4 and 6.2, in the B<sub>CH4,y</sub> table, MCF<sub>j</sub> applies the unadjusted value of 74%. This is at odds with the parameter table in Section 5.1
- b) Further, in Section 4.4, it is noted that different values (40%/45%) of the parameter F<sub>gasMS,j,LT</sub> have been applied in the parameter tables
- c) The tables are not labelled

**Action item**

- a) The VVB must ensure correct MCF<sub>j</sub> value is applied
- b) The VVB shall provide an appropriate assessment or explanation how it validated the values.
- c) All the tables and diagrams in the Joint PD-MR shall be labelled for easier referencing.

**Program rule(s) or methodology section**

*Joint Project Description & Monitoring Report, v4.1, Section 4.4, & Section 6.2*

**VVB Response:**

- a) The value of MCF<sub>j</sub> is updated to 69.56% in Section 4.4 of the Joint PD & MR which is verified as consistent in the whole JPM.
- b) Parameter F<sub>gasMS,j,LT</sub> is used to calculate both of the baseline emissions and project emissions. It is sourced from IPCC 2006 Table 10.22, Chapter 10, Volume 4 as per the applied methodology ACM0010(Version 08.0). And the value of it should be chosen by different treatment technology. The baseline technology is uncovered anaerobic lagoons, the value of F<sub>gasMS,j,LT</sub> is taken. Anaerobic-aerobic combined treatment technology is adopt in the project scenario, and the value of F<sub>gasMS,j,LT</sub> is 40% ( anaerobic lagoon ) and 45% ( solid storage ) to calculate the project emission separately. Related assessment has been added into the section 3.4.8 of the VVR.
- c) The updated JPM is checked, VVB confirmed that all the tables and diagrams in the Joint PD-MR have been labelled accordingly.

**Verra Review:**

- a) The MCF<sub>j</sub> has been revised in the Joint PD-MR, and found the adjusted value consistently applied in the calculations
- b) The F<sub>gasMS,j,LT</sub> is applied 40% for baseline case and 45% for the project case in line with the different technologies employed.
- c) All tables are now labelled

**Round 2:**

**9** **Regulatory Surplus & Additionality** **Round1:** **Closed**

**Issue**

In Section 3.1 of the VR, no information on how the VVB checked regulatory surplus.

**Action item**

**VVB Response:**

A total of 4 swine farms are included in this project activity, which belongs to multiple project activity instances. And VVB verified that this project is not a grouped project. Therefore, Section 3.5.13 of VCS Standard 4.2 (corresponding to the grouped project) is not applicable.

The VVB is required to include an explanation on the steps taken to check regulatory surplus

**Program rule(s) or methodology section**

VCS Standard v4.2, Section 3.5.13

Joint Project Description & Monitoring Report, v4.1, Section 3.1

Verra Review:

The VVB is required to offer an appropriate response to the issue raised

**Round 2:**

VVB Response:

The section 3.5.13 of VCS Standard 4.2 has been checked by VVB again, and the related assessment has been provided as below,

This project is not a grouped project. All of the four subsidiary farms involved in the project are located in Jiangsu Province and it belongs to the same project owner. Similar feeding patterns and living conditions (temperature, humidity etc.) are provided to the swine.

Besides, via checking the 2019 China regional power grid carbon dioxide baseline emission factor calculation instructions, VVB confirmed that Jiangsu province belongs to region of East China Power Grid, all the swine farms involved in the project are eligible to use the same region grid emission factor.

Furthermore, the same laws and regulations are required to determine the baseline scenario and demonstrate additionality, which includes but not limit to *Regulations on Prevention and Control of Pollution from Livestock and Poultry Farming* issued by the State Council, *Technical specification for sanitation treatment of livestock and poultry manure*(GB/T 36195), *Jiangsu Province's Work Plan for Promoting the Return of Livestock and Poultry Manure to Land Use and Strengthening the Supervision of Farming Pollution in accordance with the Law* issued by Department of Agriculture and Rural Affairs of Jiangsu Province, Department of Ecology and Environment of Jiangsu Province and *Notice on adjusting financial benchmark rate of return of construction projects in some industries* issued by NDRC and the ministry of housing and urban-rural development of PRC, all the laws and regulations have been verified by VVB and it is confirmed that laws, statutes, regulatory frameworks or policies relevant to demonstration of regulatory surplus and determination of regional grid emission factors have been provided in line with the Section 3.5.13 of VCS Standard 4.2.

Verra Review:

The finding is sufficiently addressed to close

**10** Missing NPV and ERR spreadhseet

**Round1:**

Closed

**Issue**

The IRR and ERR calculation spreadsheets have not been provided

**WVB Response:**

The IRR calculation sheet, ER calculation sheet for both ex-ante and ex-post in 1<sup>st</sup> monitoring period are provided with this reply.

**Action item**

The VVB must ensure that the spreadsheets are furnished to Verra for review

**Verra Review:**

The spreadsheets have been provided and found to be internally consistent, and with the Joint PD-MR

**Program rule(s) or methodology section**

N/A

**Round 2:**