

## 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.

<b>Project ID</b>	2603
<b>Project Name</b>	Composting of organic waste project in Guangxi
<b>Review Type</b>	Verification
<b>Program(s)</b>	VCS Program
<b>Verification Period</b>	06 January 2020 to 31 December 2022
<b>Project Proponent</b>	Guangxi Liyuanbao Science and Technology Co., Ltd.
<b>Methodology</b>	ACM0022 "Alternative waste treatment process" Version 03.0
<b>VVB</b>	LGAI Technological Center, S.A. (Applus+ Certification)
<b>Assessment Criteria</b>	VCS Standard, Version 4.5
<b>Date of First Issue</b>	8 December 2023
<b>Review Conclusion</b>	Closed
<b>Date of Final Issue</b>	18 March 2024

## FINDINGS

#	Finding Description	VVB Response	Status
<b>1</b>	<b>Missing information and assessment on no net harm</b>		
	<p><u>Issue</u> Section 2.1 of the monitoring report (MR) does not include the information related to the measures taken during the monitoring period in order to mitigate the potential impacts on environment (which are described under Section 2.3 of the project description).</p> <p><u>Action item</u></p> <ol style="list-style-type: none"> <li>The VVB must ensure that the project proponent provides information on any potential negative environmental and socio-economic impacts and the steps taken to mitigate them under Section 2.1 of the MR.</li> <li>The VVB must verify this information and update section 4.2.1 of the verification report (VR) as needed.</li> </ol> <p><u>Program Rule(s)</u> VCS Monitoring Report Template v.4.2, Section 2.1 VCS Verification Report Template v.4.2, Section 4.2.1</p>	<p><b>Round 1</b></p> <p><u>VVB Response</u> The project has taken environmental protection measures to meet national environment protection standard. Section 2.1 focus on the impact result of the project. The environmental protection measures taken are added in section 2.1 of the updated MR and confirmed to be correct. Revisions have been made in updated MR and FVR.</p> <p><u>Verra Response</u> Section 2.1 of the MR has been updated to include information about the mitigation measures applied during the monitoring period. This finding is now closed.</p>	Closed
<b>2</b>	<b>Incorrect scope included</b>		
	<p><u>Issue</u> Section 1.2 of the MR includes the Sectoral Scope 1 (energy) whereas the project activity does not have any energy generation component.</p> <p><u>Action item</u></p> <ol style="list-style-type: none"> <li>The VVB must ensure that the project proponent includes only applicable sectoral scopes under Section 1.2 of the MR.</li> </ol>	<p><b>Round 1</b></p> <p><u>VVB Response</u> The sectoral scope is revised to 13 in section 1.2 of the updated MR and FVR.</p> <p><u>Verra Response</u> Section 1.2 of the MR has been updated to state the correct sectoral scope of the project. This finding is now closed.</p>	Closed

<p>2. The VVB must assess this information and update the VR as needed.</p> <p><u>Program Rule(s)</u> VCS Monitoring Report Template v.4.2, Section 1.2 VCS Verification Report Template v.4.2, Section 3.1</p> <p><u>Background</u> Section 1.2 of the validated project description does not list project as under Sectoral Scope 1.</p>		
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3 Further information on monitored values of electricity consumed in Instance 1		
<p><u>Issue</u> As per the ER calculation spreadsheet provided for Instance 1 (TAG-Electricity), it is not clear why the electricity consumed in 2022 (229,884MWh) is much lower compared with the consumption during 2020 (900,513MWh) and 2021 (775,713MWh).</p> <p><u>Action item</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the project proponent explains the much lower electricity consumption in Instance 1 during 2022 as compared with the consumption of 2020/2021 in Section 3.1 of the MR.</li> <li>2. The VVB must further verify this information (including cross-checks with invoices issued by the grid company/electricity provider) and update the VR as needed.</li> </ol> <p><u>Program Rule(s)</u> VCS Monitoring Report Template v.4.2, Sections 3.1 and 4.2 VCS Verification Report Template v.4.2, Section 4.5</p>	<p><b>Round 1</b></p> <p><u>VVB Response</u> The total electricity consumed in 2022 was actually 976.110 MWh, while 229.884 MWh is the electricity consumption for fermentation. The purchase receipts of total electricity consumption in 2022 have been verified and confirmed to be 976.110 MWh. the electricity consumption, PE<sub>EC,y</sub> and ER<sub>y</sub> haven revised in the updated ER and MR. Basically, there is no big difference on electricity consumption between 2020 and 2022. Revision has been made in updated MR, ER and FVR.</p> <p><u>Verra Response</u> The VVB has shared an updated ER calculation spreadsheet and clarified the differences in the electricity consumed. This finding has been addressed sufficiently, and thus, is closed.</p>	<p>Closed</p>

4	Further information on monitored values of fy, F, DOCj and BMP		
	<p><u>Issue</u></p> <p>Under Section 4.2 of the MR it is unclear:</p> <ul style="list-style-type: none"> <li>(a) Why a value of 0 has been considered suitable for fy given that as per page 18 of the VR, the technical code GB50869-2013, clauses 11.1.3 and 11.5.1 <i>the landfill gas should be utilized (for gas that can be utilized) or flared (for gas that cannot be utilized)</i>, whereas para. 33 (iii) of ACM0022 states that “If the requirement does not specify any amount or percentage of LFG that should be destroyed but require the installation of a system to capture and flare the LFG, then it is assumed fy = 0.2”.</li> <li>(b) Why F has been measured given that as per the applied TOOL04 (Data parameter 3), F has to be fixed at 0.5.</li> <li>(c) Whether BMP has been measured as per the requirements under TOOL04 (Data Parameter Table 8).</li> <li>(d) Whether DOCj has been measured as per the requirements under TOOL04 (Data Parameter Table 6).</li> <li>(e) Whether the equipment used to measure F, DOCj and BMP was calibrated as per the applicable requirements.</li> </ul> <p><u>Action item</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the project proponent provides the information required as per points a to e above and updates the MR as needed.</li> <li>2. The VVB must further verify this information and update the VR as needed.</li> </ol> <p><u>Program Rule(s)</u></p> <p>VCS Monitoring Report Template v.4.2, Section 4.2 VCS Verification Report Template v.4.2, Section 4.4</p>	<p><b>Round 1</b></p> <p><u>VVB Response</u></p> <p>a) There is no compulsory requirement in China on LFG utilization. “Technical Code for Municipal Solid Waste Sanitary Landfill” (GB 50869-2013) provides clarifications about the site selection, general design of landfill site, landfill gas discharge and utilization, etc. As mentioned in the forward section, <b>only paragraph 11.1.1 is mandatory</b>, which states that landfill gas <b>discharge facilities must be built</b> in the landfill site for safety reasons.</p> <p>Other related clauses are listed below. However, they are recommended but not mandatory:</p> <p>11.1.2. For the landfill site whose designed landfill volume is more than 2.5 million tons and the landfill depth is more than 20 meters, the methane utilization facility or flaring should be built to treat the methane-containing landfill gas.</p> <p>11.1.3. When the landfill site does not have the conditions for landfill gas utilization, the flare shall be used to combust the landfill gas, and the landfill process that can effectively reduce methane generation and emission should be used.</p> <p>11.1.4. The old landfill sites that has not reached safety and stability should be equipped with effective landfill gas discharge facilities.</p> <p>Also, in Annex section (page 80) of GB 50869-2013, a further clarification is given to the mandatory provision 11.1.1. It states that the landfill site must be equipped with effective landfill gas exhaust facilities to guide and exhaust the landfill gas in a centralized manner to reduce the risk of fire and explosion in the landfill site. If conditions permit,</p>	<p>Closed</p>

<p>TOOL04, v.8.1 ACM0022, v.03.0, para. 33</p>	<p>it can be used or intensively burned. The assessment team deemed that this explanation emphasizes the utilization and combustion (by flare) of landfill gas as specified in the recommended provisions 11.1.2 - 11.1.4 are encouraged by the government, not mandatory. Therefore, the assessment team deemed those provisions 11.1.2-11.1.4 are recommended provisions.</p> <p>Further, by double checking “Provisions on the enforcement of mandatory provisions in mandatory standards” (Zhijijianjubiaofa [2000] No. 36) issued by Standardization Administration of P. R. China on 22/03/2000, which was effective at the issuance of GB16889-2008 and GB50869-2013, it stated that when mandatory provisions are fewer in the standard than recommended provisions, the format of “Chapter X, Article X and Article X of this standard are mandatory, the rest are recommended” shall be used for explanation. And “Technical Code for Municipal Solid Waste Sanitary Landfill” (GB 50869-2013) follows such format.</p> <p>And in “Standardization Law of the People's Republic of China”, which passed at the Fifth Session of the Standing Committee of the Seventh National People's Congress on 29/12/1988 and amended at the 30<sup>th</sup> Session of the Standing Committee of the Twelfth National People's Congress on 04/11/2017, it was stated that provisions other than mandatory provisions are recommended provisions, mandatory provisions must be implemented while the State encourages the adoption of recommended provisions.</p> <p>Besides, according to "2021 Urban Construction Statistical Yearbook" and "2021 Urban and Rural Construction Statistical Yearbook", in the cities, there are a total of 1,407 harmless treatment plants, of which only 282 landfill</p>	
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		<p>The VVB has clarified that fy, F, DOCj and BMP have been monitored per ACM0022 and TOOL04 in 2019 and determined for the crediting period. Further, the VVB has clarified the monitoring methods used for each data/parameter and assessed them against the requirements of the tool and methodology. This finding is now closed.</p>	
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5 Further information on calculation of project emissions for instance 2			
	<p><u>Issue</u> As per the ER calculation spreadsheet provided for in Instance 2 it remains unclear why the PE (CELLS C, D and E13) have been multiplied by 352 and divided by 366 given that they are calculated based on real amounts measured for the corresponding period from 15/01/2020 to 31/12/2020.</p> <p><u>Action item</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the project proponent clarifies the apportioning conducted for the PE calculated during 2020.</li> <li>2. The VVB must verify this information and update the VR as needed.</li> </ol> <p><u>Program Rule(s)</u> VCS Monitoring Report Template v.4.2, Section 5.2 VCS Verification Report Template v.4.2, Section 4.4</p>	<p><b>Round 1</b></p> <p><u>VVB Response</u> When calculate <math>PE_{N20,y}</math>, <math>EF_{N20,y}</math> is the emission factor for N<sub>2</sub>O emissions from the composting process in year y. it is a yearly data based on <math>B13*J41*J42</math>. Therefore, C13 must multiply by 352/366. D13 is the same reason as above. <math>EF_{CH4, default}</math> is the default value based on yearly emission of methane. Therefore, D13 must multiply by 352/366. While E13 is not multiply by 352/366. E13 is based on the actual electricity consumption, and <math>EF_{grid,CM,y}</math> is the emission factor based on one MWh, not a yearly factor.</p> <p><u>Verra Response</u> The VVB has explained why the adjustment factor of 352/366 was applied. However, there is still lack of clarity on the values applied.</p> <p><u>Issue</u> The data in the tab “Amount of Organic Waste” C3 (used to calculate C13 and D13 in the “Emission Reductions” tab) is the sum (D22) of data that covers 15 Jan 2020 – 13 Dec 2020. Thus, the raw data appears to reflect the actual fresh waste consumption of 2020.</p> <p><u>Action item</u></p>	<p>Closed</p>

		<p>The VVB is requested to clarify whether the dates of the “Amount of Organic Waste” tabs, for Instance 2, represent actual consumption. The VVB must ensure the same method is applied to Instance 1 as well.</p> <p><u>Program Rule(s)</u>  <i>VCS Monitoring Report Template v.4.2, Section 5.2</i>  <i>VCS Verification Report Template v.4.2, Section 4.4</i></p> <p><u>Background</u>          The EF factors for CH<sub>4</sub> and N<sub>2</sub>O are based on tonnes of waste composted wet basis, not on an annually basis.</p> <p><b>Round 2</b></p> <p><u>VVB Response</u>          The adjustment factor of 352/366 has been removed in the ER calculation for instance 2, the approach is consistent with ER calculation for instance 1 and confirm to be correct, and the same correction have been made in both ER, MR and FVR accordingly.</p> <p><u>Verra Response</u>          The VVB confirms that the adjustment factor has been removed ant the quantification approach is consistent across both project instances. This finding is now closed.</p>	
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6 Inconsistent values in GHG ERR spreadsheet and monitoring and verification reports			
	<p><u>Issue</u></p> <ol style="list-style-type: none"> <li>The 2020 baseline emissions in Section 5.1 of the monitoring report do not match the values reported in the GHG ERR calculation spreadsheet.</li> <li>The 2022 PE<sub>EC,y</sub> values in Table 12 do not match the GHG ERR calculation spreadsheet.</li> </ol>	<p><b>Round 1</b></p> <p><u>VVB Response</u></p> <ol style="list-style-type: none"> <li>Table 3 is the whole year (365 or 366 days)’s baseline emissions. The value is same with sheet named ‘BE<sub>y</sub> from biomass’ of ER-instance 1. While the sheet named “baseline emissions” of ER-instance 1 is the actual baseline emission of each year, not the 365 days.</li> </ol>	<p>Closed</p>

<p><u>Action item</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that all 2020 baseline emission values in Section 5.1 for Instances 1 and 2 are consistent with those reported in the GHG ERR calculation spreadsheets. The quantification must be specific to the monitoring period.</li> <li>2. The VVB must ensure that the 2022 PE<sub>EC,y</sub> values in Table 12 are consistent with the GHG ERR calculation spreadsheet.</li> <li>3. The VVB must ensure all dependent values are updated and assessed as needed.</li> </ol> <p><u>Background</u></p> <p>An example of Issue 1: The value for 2020 BE<sub>biomass,y</sub> value in Table 3 of the MR is 160,017. However, the “Baseline Emissions” tab of the “ER_Instance1_Tiandong” spreadsheet, Cell C2 reports the value as 157,831.</p>	<p>In the table 9 and 10 of MR, the actual baseline emissions are stated. And there is footnote for each value.</p> <ol style="list-style-type: none"> <li>2. As stated in comment 3 above, the previous value of ERR sheet was wrong, it was the electricity consumption for fermentation not the whole company’s consumption. It is revised in the updated ERR and the value of MR is updated accordingly.</li> </ol> <p>Update has been made in MR, ER and FVR.</p> <p><u>Verra Response</u></p> <p>The VVB has clarified the values presented in Table 3 of the MR. Further, the PE<sub>EC,y</sub> are now updated so that the value is consistent across the MR and GHG ERR calculation spreadsheet. Thus, this finding is closed.</p>	
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