PROJECT REVIEW REPORT

Project ID	2645
Project Name	Balıkesir Landfill Gas (LFG) Capture and Utilization Project
Program(s)	VCS
Project Proponent	1) BIOTREND Çevre ve Enerji Yatırımları Anonim Şirketi 2) BIO SOLUTIONS Yenilenebilir Enerji ve Danışmanlık Hizmetleri Sanayi ve Ticaret Limited Şirketi (LLC.)
Methodology	ACM0001 "Flaring or use of landfill gas" - Version 19
Sectoral Scope(s)	Scope 1: Energy Industries Scope 13: Waste handling and disposal
Validation/Verification Body (VVB)	TUV SUD South Asia Pvt Ltd.

Assessment Criteria	VCS Standard, v4.2
Date of First Issue	16 May 2022
Date of Final Issue	26 October 2022

Summary:

An accuracy review of the Balıkesir Landfill Gas (LFG) Capture and Utilization Project registration approval request has been conducted by Verra in accordance with Section 4.3 of the *Registration and Issuance Process*.

The accuracy review has raised 4 assessment findings and one minor findings, detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment findings presented in Section 1. The 4 assessment findings must be addressed to the satisfaction of Verra. The VVB need not address the minor findings during this review. Please note, however, that where Verra finds consistent minor findings by the VVB in future reviews, minor findings shall be escalated to assessment findings.

This project review report will be made publicly available. Confidential information may be provided as separate attachments.

1. ASSESSMENT FINDINGS

Finding 1
It was noted that the project description and validation report documents state that the project is exempted from publication for the public comment period. However, the exemption/extension approved for the project is not granting an exemption from the public comment period. The PP and VVB are required to update the project description and validation report including information on the comments received during the public comment period.
VVB Response: PP has updated the PD and same has been assessed in the revised VR. **PP Response:** PD. Section 2.4 Public comments: The project was open for public comment from 25/03/2022/ to 24/04/2022 as shown in the picture of section 2.4. No comments were received, there is no document in "other documents" Please find the statement here: https://registry.verra.org/app/projectDetail/VCS/2645
Verra Response: The PD and validation report were updated according to the requirement. The finding is closed and no further action is required.

Finding 2
As per the *VCS Project Description Template v4.0*, section 3.1 of the project description shall include the title and version number of any tools applied by the project. However, it was noted that the project description does not apply the latest version of the CDM Tool number 6: "Project emissions from Flaring". Also, the project description does not include the applicability conditions of the Tool, nor the monitoring parameters to account for the biogas sent to the flare. The VVB is required to refer to the latest version of the CDM Tool number 6: "Project emissions from Flaring" and to provide further information on its applicability. Also, please include further information in the project description document if the emission reductions from the methane burned in the flare are also included in the project boundary.
VVB Response: Version of the Tool number 6 is revised to the latest. PP has included the parameters in the monitoring parameters section to calculate the emissions from the flaring. Same has been assessed in the **revised VR.** **PP Response:**

PD. Section 3.1: the Listing of TOOL 06 Project emissions from flaring was updated to version 4 (latest version)

PD. Section 3.2. Table 1. The applicability conditions of TOOL 06 (version 4) was included

PD. Section 3.3 Table 5. Project emission due to flaring are included into the project boundary.

PD. Section 5.2. Parameters of the TOOL 06 (v 4) are listed in the section Parameters to be Monitored

The flaring system is designed to work only in exigencies

Verra Response:

The VVB must ensure that the project description document clearly indicates if emission reductions from flaring will also be considered in the calculation, and this shall be clearly described in sections 1.1 and 1.11 of the project description. In case the project proponent decides not to consider the emission reductions from flaring, the VVB must provide a justification on why this is considered conservative. In case the project proponent decides to include the emission reductions achieved in the flare, then:

a) The VVB is required to further explain why not all applicability conditions of the Tool 06 "Project emissions from flaring" were assessed in the PD document.
b) Further, the VVB must further explain why it considers that methane emissions from the flare are negligible, as stated in the PD section 3.3.
c) The VVB shall ensure that the parameter SPECflare includes all flare operating specifications set by the manufacturer, including the minimum and max flow rate, minimum and max temperatures, and max days between maintenance.
d) The VVB must ensure that the emissions from flaring the methane are also included in section 4.2 of the project description document, including all formulas and equations required for the calculation.
e) The VVB must ensure that the option selected to determine the flare efficiency is clearly reported in the project description document
f) The VVB must ensure that all monitoring parameters included in the project description documents include all requirements stated in the Tool. The finding remains open.PP response:

VVB response:

a) All three criteria stated in the latest version of the methodology Tool 06 "Project emissions from flaring" section 2.1. Paragraph 2, 3 and 4 are included in the PD document
b) A version 4. of PD is delivered with date 01.08.2022 based of the version 3, 22.06.2022 of the PD document . Flare working hours since 2020 have been 0, and so was after commissioning, please see 'Balikesir Data flare working hours'.
c) Specification and SPEC flare are updated in the latest version of PD Document with the data sheet of the flare manufacturer CONVECO. Same has been updated in the VR as well.
d) Section 4.2 of PD version 3 was updated and used formulas and equation required for calculation were as well added.
e) The option to select flare efficiency is clearly highlighted and reported in section 4.2 Project emissions/project emission from flaring
f) Monitoring parameters were updated and the parameter SPECflare was updated as well

Verra Response:

The PD was updated with all the required information. The finding is closed, and no further action is required.

Finding 3

As per the *VCS Project Description Template v4.0,* section 4.2, the project description document shall describe the procedure for quantification of project emissions and/or removals in accordance with the applied methodology, including all relevant equations.

However, it was noticed that the project description document does not include the quantification of the emissions from the diesel generators installed on site.

The VVB is required to explain why the project emissions from the on-site generators were not accounted for in the project description document.

VVB Response:

PP has included the project emission from the on site generator and related monitoring parameters has been added in the section 5.2. Same has been updated in the revised VR.

PP Response:

According to regulation there is to have a captive power plant or urgency diesel generator in case of shortage on methane or a break out. The usage reports show 0 times of usage of diesel generator and that will be reported in the monitoring report.

PD. Section 4.2. Equation 8. The PE FC,jmy is included into the equation.

PD. Section 5.2. Parameters of the TOOL 03 (v 3) are listed in the section Parameters to be Monitored

Verra Response:

Given that there is a diesel generator installed on site, the VVB shall ensure that the project description document, section 4.2, includes all formulas required to determine diesel emissions. Also, the VVB must provide further explanation on why the emissions from fossil fuel combustion were not included in the project boundary considering that the diagram in section 3.3 considers the possibility of using fossil fuels for electricity generation. Further, the VVB shall ensure that all emission reduction calculations are clearly described in the project description document in order to allow a third party to replicate the calculations. The finding remains open.

VVB Response:

The document “Balikesir : Generator Operation Schedule” was assessed by the VVB showing the working hours and diesel consumption of the generator. In the PD version 4 section 4.2 the emissions from fuels consumption are updated.

Verra Response:

The updated PD includes Equation 10 to account for project emissions. However, the PD is still not clear on the Option selected to determine the parameter COEF (considering that as per Tool 3, Option A is the preferred approach).

Further, the VVB must provide an assessment of the calculated project emissions as per tables 12 and 13 of the PD, providing the references used and calculation procedure for determining the diesel consumption.

Finally, the VVB must ensure that the estimated emission reduction values mentioned in the PD are corrected based on the project emissions estimations from the diesel consumption, and the new values are also reflected in the validation report. The finding remains open.

VVB Response:

To determine the parameter COEF, option selection has been stated with its approach considering that as per tool 3, Option A has been selected due to the necessary value is available.

For the estimated emission reduction calculation, diesel generator has been considered for project emissions and values have been corrected in the PD same has been assessed in the VR.

Verra Response:

The PD was completed with all the required information. The finding is closed, and no further action is required.

Finding 4

The VVB in the validation report section 3.6.6, states that the grid emission factor is calculated annually and for the year 2019 the combined emission factor is 0.5706 tCO2/MWh.

However, the VVB did not confirm if the value applied is the latest available at the time of submission of the documents for registration. Also, the VVB did not confirm the source of the grid emission factor applied. Finally, there is no confirmation on the weighting factors applied to the Operational Margin and Build Margin emission factors.

Thus, the VVB is required to provide confirmation on all the above in a revised verification report.

VVB Response:

PP has used the Grid emission factor available at the time of first submission of the PD. Same has been verified by the VVB. Also, EF was taken from the data published by the TURKEY NATIONAL ELECTRICITY NETWORK. The documents clearly state it has used operating and Build margin to calculate the combined margin. Hence, VVB found it appropriate.

PP Response:

The emission factor is so far the latest publication, please see the emission factor document it was published on the 06.10.2021 for period 2019. (In English)

The source of the emission factor value: Energy Efficiency and Environment Department (EVÇED) Environment and Climate Department, Climate Group Calculation Methodology:
The Clean Development Mechanism Tool 07-V06.0 method of the Intergovernmental Panel on Climate Change (IPCC) was used.

Source of the INSTALLED CAPACITY OF TURKEY BY PRIMARY ENERGY SOURCES FOR 2009 AND 2019
https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri

Verra Response:

The VVB confirmed that the EF applied was the latest available at the time of submitting the PD. However, the project description is still not clear on the weighting factors applied to the Operational Margin and Build Margin emission factors in the last formula on page 59. The VVB must ensure that the PD clearly states the factors used for the calculation of the combined emission factor. The finding remains open.

VVB Response:

As per the applicable "Tool to calculate the emission factor for an electricity system", version 07.0, the default weighting factors for the operating margin and build margin emission factors for the proposed project activity is defined as:

wOM = 0.50

wBM = 0.50

The above information was added to the latest PD for the default values used for the Weighing factors applied to the OM and BM.

Verra Response:

The VVB clarified the weighting factors applied, which are in line with the requirements. The finding is closed, and no further action is required.

2. MINOR FINDINGS

Finding 1

The following minor findings shall be corrected in the documents provided:

1) The summary and section 3.1 of the Verification Report, states the wrong project title: "Liling LFG Power Generation Project "
2) Please correct the project description document, page 54, as the table states that the values in the column are MWh, and they seem to be the installed capacity.

PP Response:

PD. Section 4.4 Table in pag 53 the column MWh was corrected to the title MWe Installed capacity

3. ASSESSMENT CONCLUSION

On 16 May 2022, Verra concluded a review of the registration approval request for project Balıkesir Landfill Gas (LFG) Capture and Utilization Project and raised the 4 assessment findings detailed above.

On 16 May 2022 Verra submitted the review report to the VVB TUV SUD South Asia Pvt Ltd. and the project proponents BIOTREND Çevre ve Enerji Yatırımları Anonim Şirketi and BIO SOLUTIONS Yenilenebilir Enerji ve Danışmanlık Hizmetleri Sanayi ve Ticaret Limited Şirketi (LLC.).

On 30 June 2022 the VVB provided answers to the review report, however, the answers were not sufficient to close all findings.

On 13 July 2022 Verra submitted the second round of the review report to the VVB TUV SUD South Asia Pvt Ltd.

On 6 September 2022 Verra submitted the third round of the review report to the VVB TUV SUD South Asia Pvt Ltd

On 26 October Verra closed all assessment findings.