

**GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)  
REPORT  
-  
DESIGN CERTIFICATION (RENEWAL)**



**Project Title:** Bolu Landfill Gas to Energy Project, Turkey  
**GS project ID:** GS 764  
**Internal ID:** A+SH\_SYST\_TQC\_GS\_RCP\_2125  
**Customer:** Climate Balanced – FZCO (PP: CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.)  
**Date:** 11/08/2025  
**Revision:** 02

| SUMMARY  |  |   |                     |
|--|--|---|---------------------|
| Reference No.  | Date (first version)                                       | Version No.   | Date (last version) |
| A+SH_SYST_TQC_GS_RCP_2125  | 02/08/2025   | 02  | 11/08/2025          |
| <b>Client</b>  | Climate Balanced İklim Enerji Ticaret ve Eğitim Ltd. Şti.  |   |                     |
| <b>Project Title</b>   | Bolu Landfill Gas to Energy Project, Turkey                |   |                     |
| <b>Project Participants</b>  | CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.           |   |                     |
| <b>Project Location</b>  | Marmara Region, Bolu Province, Yukarısoku Village , Turkey |   |                     |
| <b>Contact Person</b>  | <b>Mr. Burak Senturk</b>                                   |   |                     |
| GS4GG Version: <b>GS4GG Version:</b> GS4GG Principles and Requirements, version 2.1 <sup>/19/</sup><br>GS4GG Activity Requirements: RE Activity Requirements, version 1.4 <sup>/21/</sup><br><br>Applied Methodology: <ul style="list-style-type: none"> <li>AMS-III.G. "Landfill Methane Recovery" version 10.0<sup>/9/</sup></li> <li>AMS-I.D. "Grid connected renewable electricity generation" version 18.0<sup>/10/</sup></li> </ul> The following tools and guidance's have been followed (References): <ul style="list-style-type: none"> <li>"TOOL07:Tool to calculate the emission factor for an electricity system" version 07.0<sup>1</sup></li> <li>TOOL04:Emissions from solid waste disposal sites" version 08.1<sup>2</sup></li> <li>"TOOL05:Tool to calculate baseline, project or leakage emissions from electricity consumption and monitoring of electricity generation" version 03.0<sup>3</sup></li> <li>"TOOL11:Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" version 03.0.1<sup>4</sup></li> </ul> |  | GS4GG Sectoral Scope: 2<br>UNFCCC CDM Sectoral Scope: 1, 13<br>Technical Area: 1.1 and 13.1<br>Project scale: Small-scale project |                     |
| GS4GG First PDD Version: 01<br>Date: 13/06/2025  |  | GS4GG Final PDD Version: 3<br>Date: 31/07/2025  |                     |
| Estimated Annual SDG Impacts:  |  |   |                     |

<sup>1</sup><https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

<sup>2</sup><https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v8.1.pdf>

<sup>3</sup><https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf>

<sup>4</sup><https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

| Sustainable Development Goals Targeted   | SDG Impact                         | Estimated Annual Average                             |
|--|------------------------------------|--|
| SDG 13 Take urgent action to combat climate change and its impacts   | Emission reductions                | 15,259 tCO <sub>2</sub> /year (GS VER)               |
| SDG 7 Ensure access to affordable, reliable, sustainable and modern energy for all   | MWh of renewable energy generated  | 8,483 MWh/year                                       |
| SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all | Number of trainings and employment | 9 No. of employee<br>1 No. of training/employee/year |

Selected Sustainable Development Goals (SDGs): 7; 8; 13

### Design Certification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Climate Balanced – FZCO (PP: CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.) to perform the GS validation (Renewal of GS Crediting Period) of “Bolu Landfill Gas to Energy Project, Turkey” applying the UNFCCC approved methodologies – AMS-I.D., Version 18.0 <sup>/10/</sup> and AMS-III.G, Version 10.0. <sup>/9/</sup>

The management of Climate Balanced – FZCO (PP: CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.) is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review, Onsite audit, document review has been conducted to validate the data submitted in the GS4GG PDD (RCP). Applus+ Certification confirms the following have been reviewed:

- Registered GS PDD<sup>/1/</sup> and previous monitoring period report<sup>/3/</sup> and the corresponding validation and verification report <sup>/2//4/</sup>
- The applied monitoring methodologies;
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board<sup>/17//18/</sup>;
- The Gold Standard for Global Goals “Principles and Requirements” Version 2.1 <sup>/19/</sup>
- All information and references relevant to the project activity’s resulting in estimated emission reductions.

The scope of the RCP validation is defined as an independent and objective review of the project design document, against the Kyoto Protocol requirements, UNFCCC rules, applicable CDM requirements and requirement of Gold Standard. The validation report is finalized based on the assessment of the GS4GG PDD, and applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g., Onsite audit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.

The report and the annexed validation checklist describe a total of 11 findings which include:

- 06 Corrective Action Requests (CARs);
- 04 Clarification Requests (CLs/CRs);
- 01 Forward Action Requests (FARs)

The Project Developer (PD) has responded these findings by modifying the GS4GG PDD and providing adequate additional explanations and evidences. Applus+ Certification confirms that all the findings have been “closed out” before submitting the request for renewal to GS board (Renewal of Crediting period).

As a summary of the RCP validation, the review of the GS4GG PDD and the subsequent follow-up interviews & site visit inspection have provided Applus+ Certification with sufficient evidence for the determination of the project’s fulfillment with all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and requirement of Gold Standard. Therefore, Applus+

Certification recommends the project for renewal of crediting period by the GS Registry as GS VER project.

| ASSESSMENT TEAM   |  |   |
|---|--|---|
| Team Members  | Type of Resource <sup>5</sup>  | Organization (for OEs)                          |
| Lead Auditor: Mr. Amit Rai                                  | <input type="checkbox"/> IR <input type="checkbox"/> EI <input checked="" type="checkbox"/> OE | M/s True Quality Certifications Private Limited |
| Technical Expert in Tranee: Mr. Amit Rai                    | <input type="checkbox"/> IR <input type="checkbox"/> EI <input checked="" type="checkbox"/> OE | M/s True Quality Certifications Private Limited |
| Technical Expert & GS approved Auditor: Mr. Atul Takarkhede | <input type="checkbox"/> IR <input type="checkbox"/> EI <input checked="" type="checkbox"/> OE | M/s True Quality Certifications Private Limited |
| Technical Reviewer: Mr. Nikunj Agarwal                      | <input type="checkbox"/> IR <input checked="" type="checkbox"/> EI <input type="checkbox"/> OE | -   |

<sup>5</sup> IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

| <b>ABBREVIATIONS</b>          |   |
|-------------------------------|---|
| <b>AMS</b>                    | Approved Methodology Small Scale  |
| <b>Applus+ LGAI / Applus+</b> | LGAI Technological Center, S.A. (Applus+ Certification)                               |
| <b>BM</b>                     | Build Margin  |
| <b>CAR</b>                    | Corrective Action Request   |
| <b>CDM</b>                    | Clean Development Mechanism   |
| <b>CDM EB</b>                 | CDM Executive Board   |
| <b>CER</b>                    | Certified Emission Reduction  |
| <b>CL / CR</b>                | Clarification Request   |
| <b>CM</b>                     | Combined Margin   |
| <b>CMP</b>                    | Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol |
| <b>DNA</b>                    | Designated National Authority   |
| <b>EF</b>                     | Emission Factor   |
| <b>EIA</b>                    | Environmental Impact Assessment   |
| <b>ER</b>                     | Emission Reductions   |
| <b>FAR</b>                    | Forward Action Request  |
| <b>GHG</b>                    | Greenhouse Gas(es)  |
| <b>GS4GG (or GS)</b>          | Gold Standard for Global Goals  |
| <b>IPCC</b>                   | Intergovernmental Panel on Climate Change   |
| <b>KP</b>                     | Kyoto Protocol  |
| <b>MP</b>                     | Monitoring Plan   |
| <b>NGO</b>                    | Non-Governmental Organization   |
| <b>RCP Validation</b>         | Validation for Renewal of Crediting Period  |
| <b>SDG</b>                    | Sustainable Development Goal  |
| <b>TAC</b>                    | Gold Standard Technical Advisory Committee  |
| <b>OM</b>                     | Operational Margin  |
| <b>PP</b>                     | Project Participant   |
| <b>PS</b>                     | Project Standard  |
| <b>UNFCCC</b>                 | United Nations Framework Convention on Climate Change                                 |
| <b>VVB</b>                    | Validation and Verification Body  |
| <b>VER</b>                    | Verified Emission Reduction   |
| <b>TEIAS</b>                  | Turkish Electricity Transmission Company  |

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## **1. INTRODUCTION**

Climate Balanced – FZCO (PP: CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.) has contracted Applus+ Certification to perform validation for Renewal of Crediting Period (RCP) of "Bolu Landfill Gas to Energy Project, Turkey" (hereafter referred to as the project activity). This validation report summarizes the findings of the RCP validation of the project, performed on the basis of GS4GG Validation and Verification Standard<sup>/16/</sup> version 2.0, Principles & Requirements<sup>/19/</sup> Version 2.1, Renewable Energy Activity Requirements<sup>/21/</sup> version 1.4, as well as all relevant requirements of Gold Standard.

PD has developed Bolu Landfill Gas to Energy Project which is located at the Bolu landfill site, Turkey which is the main landfill area of the Bolu province of Turkey. The landfill currently holds more than 2 million tons of waste. In 2008, the disposed waste amount reached 42,926 tones, corresponding to 160-180 t/day on average. In recent years (2023-2024), the disposed waste amount reached approximately<sup>/18/</sup> 80,000 tones, corresponding to 219 t/day on average.<sup>6</sup> In the baseline scenario, The landfill is equipped with eight venting pipes through which LFG is released into the atmosphere without any flaring or utilization activity. This has been verified by the assessment team based on the onsite visit<sup>/27/</sup>, the registered PDD<sup>/1/</sup>, and previous monitoring reports<sup>/3//4</sup> assessment team has verified the same based on onsite visit, registered PDD and previous monitoring reports.

By recovering methane from a landfill site in order to produce energy in the process displacing fossil fuel-based power grid generation with renewable energy, the project results in reductions of CO<sub>2</sub> emissions and non-CO<sub>2</sub> emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario as there is no universal mandate regulations for flaring in Turkey or for the generation of energy from landfill gas as validated through the analysis of relevant local environmental and waste management legislations such as the official website of the Ministry of Environment, Urbanization and Climate Change's General Directorate of Environmental Management provides a list of regulations<sup>7</sup>, Academic and Research Paper<sup>8</sup> such as "Landfill Gas to the Energy Potential of Turkey" which shows a shift from basic waste storage to more advanced management, but describes the "gas to energy" approach as a developing potential rather than a nationwide, mandatory requirement. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The project activity, promoted by CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti., involves the generation of electricity through renewable means, with a total installed capacity<sup>/35/</sup> of 1.131<sup>9</sup> MWe. The project is connected to the Turkish National Grid and is located in Bolu. The electricity generated is sold to the grid. CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti. acts as the Project Developer and is responsible for the implementation and operation of the project. This initiative

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<sup>6</sup> Please see the ER Calculation sheet for the waste amount.

<sup>7</sup> <https://cygm.csbb.gov.tr/yonetmelikler-i-440>

<sup>8</sup> <https://www.tandfonline.com/doi/abs/10.1080/15567249.2011.584113>

<sup>9</sup> The Project Developer added another generation unit with a capacity of 1.413 MWe. However, this unit is only added to the project as a backup unit to deal with potential operational pauses resulting from the existing engine in the future and does not contribute to the electricity generation activity. Therefore, the plant's total capacity is the same as the registered capacity.

contributes to the sustainable management of energy resources and aligns with climate security and development goals

The project is estimated to generate approximately 8,483 MWh of renewable electricity annually. Consequently, the project is expected to achieve greenhouse gas (GHG) emission reductions of 15,259 tCO<sub>2e</sub> per year, resulting in a total estimated emission reduction<sup>6/</sup> of 106,814 tCO<sub>2e</sub> over the crediting period.

Assessment team checked the technical parameters of the project equipment during Onsite audit and confirm that the details as mentioned in the GS PDD (RCP) submitted for third crediting period are correct.

### **Technology Transfer**

No technology transfer from other countries is involved in the project which has been verified by the assessment team from the review of registered PDD<sup>1/</sup>, previous monitoring documents<sup>10</sup> and on the basis of site inspection and interviews.

The main purpose of the project activity is to generate electrical energy through sustainable means using landfill gas, to deliver the generated output to the Turkish national grid to contribute to climate change mitigation efforts.

The project activity has started operation/generation of electricity on 12/08/2011<sup>20/</sup>

The geo-coordinates of the Project activity - 40° 45' 8" N , Longitude: 31° 38' 28" E which are cross-checked during Onsite audit on the basis of approved PDD<sup>1/</sup> and google map software.

## **1.1 Objective**

The purpose of an RCP validation is to have an independent third-party assessment of the GS4GG PDD for renewal of crediting period and compliance with the GS requirements as described in the Gold Standard documentation and supporting documents by the client. Validation is part of the GS VER project cycle and will finally result in a conclusion by Applus+ Certification whether a project activity is valid and should be submitted for registration/renewal of crediting period of a proposed project activity rests at the GS and the parties involved.

## **1.2 Scope**

The RCP validation scope is defined as an independent and objective review of the project PDD(RCP), the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable GS requirements including the approved baseline and monitoring methodologies – AMS-I.D., Version 18.0<sup>10/</sup> and AMS-III.G version 10.0<sup>9/</sup> The validation was based on the requirements in the GS4GG Principles and Requirements<sup>19/</sup>.

The validation is not meant to provide any consulting towards the project developers. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the GS PDD.

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<sup>10</sup> <https://assurance-platform.goldstandard.org/project-documents/GS764>

## 2. METHODOLOGY

The project assessment is based on the GS4GG validation and verification standard, Version 02.0/16/ Gold Standard requirement for GS4GG and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the project activity are appointed. Once the project is made available for Applus+ Certification, the members of the assessment team carried out:

1. A desk review of the PDD;
2. Follow-up interviews with project stakeholders;
3. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The prepared validation report and other supporting documents then undergo an internal quality control before being submitted to the GS Registry.

The GS overview documents which is referred as DVR is as below

| Validation Checklist Table 3: Resolution of Audit Findings  |                              |                                |                              |                |
|---|------------------------------|--------------------------------|------------------------------|----------------|
| <b>Type:</b>  | <input type="checkbox"/> CAR | <input type="checkbox"/> CL/CR | <input type="checkbox"/> FAR | <b>Number:</b> |
| <b>Raised by:</b>   |                              |                                |                              |                |
| <b>Description of the audit finding</b>   |                              |                                | <b>Date:</b>                 |                |
| The description of the audit finding should be clearly included here.   |                              |                                |                              |                |
| <b>Project Participant's response</b>   |                              |                                | <b>Date:</b>                 |                |
| The responses given by the project participants during the communications with the validation team should be included here. |                              |                                |                              |                |
| <b>Documentation provided as evidence by Project Participant</b>  |                              |                                |                              |                |
| The evidences provided by the project participants should be included here.   |                              |                                |                              |                |
| <b>Auditor's assessment comment</b>   |                              |                                | <b>Date:</b>                 |                |
| This section should include how the audit finding is assessed by the assessment team.                                       |                              |                                |                              |                |

This report describes a total of 11 findings which include:

- 06 Corrective Action Requests (CARs);
- 04 Clarification Requests (CLs/CRs);
- 01 Forward Action Request (FARs);

The Complete List of CAR/CL/FAR is included as Appendix 1 of this report.

## 2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center, S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center, S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center, S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The following qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Technical Expert in Training (TEiT)
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

| Name                              | Role    | SS Coverage | TA Coverage | Financial aspect | Host country experience |
|-----------------------------------|---------|-------------|-------------|------------------|-------------------------|
| Mr. Amit Rai                      | LA/TEiT | NO          | NO          | NO               | NO                      |
| Mr. Atul Takarkhede <sup>11</sup> | TE      | YES         | YES         | YES              | YES                     |
| Mr. Nikunj Agarwal                | TR      | YES         | YES         | Yes              | NA                      |

The complete list of CVs is included as Appendix 2 of this report.

## 2.2 Document review

The GS4GG PDD<sup>5/</sup> submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in Section 4 of this report.

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<sup>11</sup> GS Approved Auditor

### 2.3 Onsite Assessment and Follow up Interviews

As a part of on-site visit which was conducted on 16/06/2025, VVB interviewed project developer representatives, stakeholders and conducted following activities as a part of pre and post on-site visit which involved renewal of design certification of the current project activity.

- A complete desk review of the PDD-RCP<sup>5/</sup> as well as all applicable host country legal requirements and respective supportive evidences have been checked by the Assessment team.
- Assessment team performed on-site inspection in order to check implementation, current situation, evaluation of data management, QA/QC system, project technology, training provided, monitoring etc. PD representatives were interviewed and cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.
- Monitoring procedures for ex-ante and Ex-post parameters, SDG goals and sustainable monitoring parameters to be followed as a part of Project Activity.
- To review VPA local stakeholder consultation report and grievance mechanism from review of documents and interaction with CME representatives, local stakeholders.

GS4GG document “site visit and on-site visit requirements and procedures” version 2.0<sup>16/</sup> was available at time of on-site visit which mandates VVB to explain means of validation in their assessment which is presented in this report.

A site visit was conducted on 16/06/2025, details of the same are as below:

The details activity done during Onsite audit is as below:

| Duration of Onsite Audit: 16/06/2025 |  |   |            |  |
|--------------------------------------|--|---|------------|--|
| No.                                  | Activity performed during Onsite audit   | Site location                             | Date       | Team member  |
| 1.                                   | <p>Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. (Discussion with PP)</p> <p>Assessment team interviewed the local stakeholder and confirmed that there is no grievance resulted from the project activity in and out of the project location. The stakeholder confirmed that the project resulted in employment and improves lifestyles of the personal/families in the nearby villages. (Discussion with Stakeholder)</p> | Yukarisoku Village, Bolu Province, Turkey | 16/06/2025 | Mr. Atul Takarkhede (TE) and Yusuf Serengil (Local Expert) |

The stakeholder interaction during Onsite audit is described below:

|  |                                 |
|--|---------------------------------|
| Name of the stakeholder  | Filkriye Keskin & Zeynep Keskin |
| Occupation   | Villager (Yukarisoku)           |
| <p>VVB QUESTION: Did this landfill project cause any pollution?</p> <p>Answer: No, the plant does not cause any pollution.</p> <p>VVB QUESTION: Did local villagers getting benefitted due to project activity?</p> <p>Answer: Yes, peoples are getting benefitted through CSR activities. Company providing various trainings to youths and also helping local schools for buildings and study material etc.</p> <p>VVB QUESTION: Did PD promised employment opportunity?</p> <p>Answer: Yes, employment is generated for local peoples. The landfill plant and electricity generation plant have provided various direct and indirect employment opportunities to the locals.</p> <p>VVB also like to conclude that during the interviews with PP, that local people were employed for security and operation related work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.</p> |                                 |

|  |                       |
|--|-----------------------|
| Name of the stakeholder  | Nebahat Camlioglu     |
| Occupation   | Villager (Yukarisoku) |
| <p>VVB QUESTION: Did this landfill project cause any pollution?</p> <p>Answer: No, the plant does not cause any pollution.</p> <p>VVB QUESTION: Did local villagers getting benefitted due to project activity?</p> <p>Answer: Yes, peoples are getting benefitted through CSR activities. Company providing various trainings to youths etc.</p> <p>VVB QUESTION: Did PD promised employment opportunity?</p> <p>Answer: Yes, employment is generated for local peoples. The landfill plant and electricity generation plant have provided various direct and indirect employment opportunities to the locals.</p> <p>VVB also like to conclude that during the interviews with PP, that local people were employed for security and operation related work. VVB also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.</p> |                       |

During interviews with locals and employees for project developer, verbal consent for disclosing private information, such as names of interviewees, technology users, Stakeholders on the Gold Standard Impact Registry have been obtained in line with the requirement of 7.16.6.e of GS VVS<sup>16/</sup>, Version 2.0

Moreover, VVB also discussed labour conditions at project site during Onsite audit by means of interviewing local stakeholders and confirmed that Project Developer is in compliance with national labour code/ national labour<sup>12</sup> and occupational health and safety laws and no major

<sup>12</sup> <https://mevzuat.gov.tr/>

accidents recorded at project site. All the employees at project site also given training on Occupational health and safety issues regularly.

## **2.4 Resolution of Clarification and Corrective Action requests**

The objective of this phase of the RCP validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needs to be clarified for Applus+ Certification positive conclusion on the PDD (RCP). The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the validation process, the concerns raised and responses given are summarized in Appendix 1 below.

However, this report describe a total of 11 findings which include:

- 06 Corrective Action Requests (CARs);
- 04 Clarification Requests (CLs/CRs);
- 01 Forward Action Request (FARs);

The Gold Standard GS4GG PDD version 03<sup>5/</sup> submitted on 31/07/2025 for renewal of crediting period serves as the basis for the final assessment presented. Additional changes to the GS4GG PDD (RCP) during the RCP validation process are not considered to be significant with respect to the main CDM and Gold Standard objectives.

## **2.5 Internal Quality Control**

As final step of a validation the final documentation including the validation report and the protocol have to undergo an internal quality control by the technical review committee. Each report has to be finally approved either by the head of technical review committee or the deputy. In case one of these two persons is a part of the audit team, approval can only be given by the other one.

After confirmation from the Project Developer, the validation opinion and relevant documents are submitted to the GS4GG Registry by the VVB.

### **3. PROJECT DESIGN CERTIFICATION ASSESSMENT**

#### **3.1 Approval**

The host country of the project activity is Turkey which is validated from the registered PDD.

The Republic of Turkey is the host country. Turkey has ratified the Kyoto Protocol (28/05/2009)<sup>13</sup>. Turkish National Focal Point to the UNFCCC is the Ministry of Environment and Forestry.

#### **3.2 Participation**

CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti. is the project developer from the host party Turkey. The host country involved is parties to the Kyoto Protocol and meet and requirements to participate in the Gold Standard.

#### **3.3 Scale of the project**

The project activity is identified as a small-scale project in section A.4 of the GS4GG PDD (RCP) applying a small-scale methodology AMS-I.D., Version 18.0 <sup>/10/</sup> and AMS-III.G., Version 10.0. <sup>/9/</sup> The total capacity of the power project is 1.131 MWe as confirmed based on commissioning certificate dated 12/08/2011<sup>/24/</sup>.

a) Type of project In accordance with the project scale definitions set out under the Gold Standard for the Global Goals (GS4GG), the proposed activity qualifies as a small-scale renewable energy project, with a total installed capacity of 1.131 MWe, which is well below the applicable 15 MW threshold as outlined Renewable Energy Activity Requirements<sup>/21/</sup> v1.4 para. 3.3.2 (b).

Furthermore, in alignment with the CDM eligibility criteria for Type III project activities, which require annual GHG emissions reductions not to exceed 60,000 tCO<sub>2e</sub>, this project achieves estimated reductions of 15,259 tCO<sub>2e</sub> per year, thereby meeting the scale threshold for small scale project activities.

Assessment team also checked the requirements of latest applicable methodologies i. e. AMS-I.D., Version 18.0 <sup>/10/</sup> and AMS-III.G, Version 10.0 <sup>/9/</sup> and confirms that the project qualifies the requirement of the latest methodology also (i.e., scale, applicability, baseline, additionality and monitoring).

Type of project: The project involves is extracting and utilizing landfill gas (LFG), which is an eligible project type as it is in accordance with para 1.3.1 of the Annex A – Additional Eligibility Criteria for Specific Project Types under Gold Standard for The Global Goals Renewable Energy Activity Requirements<sup>/21/</sup>, Version 1.4

The project involves the extraction and utilization of landfill gas (LFG). Since it includes methane recovery, the project accounts for emission reductions from both the avoidance of methane emissions and the utilization of the recovered methane for the delivery of energy services (electricity).

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<sup>13</sup> <https://unfccc.int/node/61221>

General Eligibility Criteria under Renewable Energy Activity Requirements:

Assessment team reviewed the general eligibility criteria under Renewable Energy Activity Requirements, version 1.4 and found that criteria appropriately provided & justified in the Section A.1.1 of the GS PDD(RCP) <sup>/5/</sup>. Assessment team confirmed that project does not differ from general eligibility criteria under activity requirement. Thus accepted.

Moreover, PD utilized the most recent and valid template, version 1.5 dated 29/06/2023, for the preparation of the Project Design Document (PDD) for the design certification renewal. The assessment team noted that PD meticulously adhered to all instructions outlined in the template, leading to its acceptance

### 3.4 Greenhouse Gases

The project activity leads to displacement of electricity generation from fossil fuel-based power plants connected to the regional grid by renewable energy generated utilizing landfill gas (LFG) waste handl. The operation of the project activity will result in reduction of carbon-dioxide from the atmosphere due to displacement of electricity in grid by the renewable energy. Hence, the greenhouse gas identified in the PDD is carbon dioxide which is duly validated by the VVB.

The GHG emission sources considered for the project boundary and their explanations are as follows:

| Source  | GHGs             | Included? | Justification/Explanation   |
|---|------------------|-----------|---|
| Baseline scenario<br>Emissions from decomposition of waste at the SWDS site | CH <sub>4</sub>  | Yes       | The major source of emissions in the baseline   |
|   | N <sub>2</sub> O | No        | N <sub>2</sub> O emissions are small compared to CH <sub>4</sub> emissions from landfills. Exclusion of this gas is conservative. |
|   | CO <sub>2</sub>  | No        | CO <sub>2</sub> emissions from the decomposition of organic waste are not accounted.  |
| Baseline scenario<br>Emissions from electricity consumption                 | CO <sub>2</sub>  | Yes       | Main emission source  |
|   | CH <sub>4</sub>  | No        | Minor emission source   |
|   | N <sub>2</sub> O | No        | Minor emission source   |
| Project scenario<br>Emissions from on-site electricity use                  | CO <sub>2</sub>  | Yes       | This is an important source of emissions in the project activity  |
|   | CH <sub>4</sub>  | No        | Excluded for simplification. This emission source is assumed to be very small   |
|   | N <sub>2</sub> O | No        | Excluded for simplification. This emission source is assumed to be very small   |
| Project scenario<br>Direct emissions from the waste treatment process       | N <sub>2</sub> O | Yes       | Emissions from anaerobic digestion of the waste   |
|   | CO <sub>2</sub>  | No        | CO <sub>2</sub> emissions from the decomposition of organic waste are not accounted.  |
|   | CH <sub>4</sub>  | Yes       | CH <sub>4</sub> leakage from the anaerobic digester   |

### 3.5 Project timeframe

**Other certification scheme:** The project activity has not applied, confirmed by project developer, for any other certification like Green or White certification. While Turkey does not have a widely adopted, tradable "white certificate" scheme in the same way as countries like France or Italy, it has a national system for promoting energy efficiency in buildings. This system is centered on the **Energy Performance Certificate (EPC)**, known in Turkey as the **Enerji Kimlik Belgesi – (EKB)**<sup>14</sup>. Similar to white certificates, Turkey has a national system for green certificates, although it's not a direct, tradable market in the same way as some international schemes. The web-page like "Borusan EnBW", demonstrate that major Turkish energy company discusses Renewable Energy Certificates and specifically mentions the **I-REC** (International Renewable Energy Certificate) system. This shows that Turkish companies can and do participate in international green certificate schemes, even if they have their own national system. Therefore, the validation team concluded that the project activity meets the applicability criteria of GS4GG Gold Standard. Assessment team checked the double counting clarification vide GS guideline on double counting in the context of Green Certificate Schemes, 22/01/2015<sup>15</sup>. A declaration<sup>16/</sup> submitted by PD confirms that the project activity is not taking any GHG emissions under any other mechanism. Assessment team also checked the GHG programs (i.e, CDM<sup>16</sup>, VCS<sup>17</sup>, GCC<sup>18</sup> etc.) and confirms that the project is not undertaking any GHG benefits at present nor intended to take it in near future.

### 3.6 Public announcement

Assessment team is in opinion, taking note of the validation report and PDD (RCP) that the incentive in the form of carbon credits was seriously considered in the decision to proceed with the project activity. The project is registered under GS4GG mechanism<sup>19</sup>.

### 3.7 Project Boundary

PD has applied 2 methodologies for the current project activity.

According to AMS-I.D-, version 18.0 <sup>10/</sup> para 18 i. e. *"The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to"*. And According to AMS-III.G, Version 10.0 <sup>9/</sup> para 12, the project boundary is, *"The project boundary is the physical, geographical site of the landfill where the gas is captured and destroyed/used"* .

The project boundary consists of Landfill cover, LFG collection system, electricity generation unit (gas engine, step-up transformer, and other system protection device), and measuring equipment (electricity meters, mass flow meter, and gas analyzer). The project not only contributes to climate change mitigation efforts but also targets SDGs 13, 7 and 8.

<sup>14</sup> <https://www.endustriyelenerji.com.tr/en/our-services/energy-identity-certification/>

<sup>15</sup> [Microsoft Word - 2015 12 Double Counting Guideline Published V1.doc](#)

<sup>16</sup> <https://cdm.unfccc.int/Projects/projsearch.html>

<sup>17</sup> <https://registry.verra.org/app/search/VCS>

<sup>18</sup> <https://projects.globalcarboncouncil.com/>

<sup>19</sup> <https://assurance-platform.goldstandard.org/project-documents/GS764>

PD has clearly defined and identified the project boundary correctly which is checked and accepted by VVB. The supplied documentation included a technical description<sup>/35/</sup> and design of the methane collection system and the LFG energy plant<sup>/35/</sup> and The national grid electricity importing statistics are clearly demonstrated in section B.4 of the PDD(RCP)<sup>/5/</sup>.

Further, the geographic and system boundaries for the relevant electricity grid can be clearly identified under section 3.10 of this report and information on the characteristics of the grid is available as required by the "Tool to calculate the emission factor for an electricity system" (version 07.0).<sup>/15/</sup> The electricity produced on-site will be delivered to the Turkish national grid verified by the assessment based on the onsite inspection<sup>/27/</sup> and cross check of electricity generation records/TEIAS monthly reading reports<sup>/29/</sup>.

### 3.8 Baseline Identification

This is 3<sup>rd</sup> renewal of crediting period and PD has established baseline as per the registered GS PDD version 12 dated 20/12/2017 (applicable for 2<sup>nd</sup> crediting period)<sup>/1/</sup> which is validated by VVB through its validation report<sup>/2/</sup>.

PD has discussed baseline scenario identification in the current GS PDD (RCP) which was further checked against applicable methodologies and tools and found correct and hence accepted.

As this is renewal of crediting period, VVB need to access PD's demonstration of the validity of baseline in line with Tool for "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" Version 03.0.1.<sup>/11/</sup>

The evaluation of the original baseline is performed in 4 steps, namely:

- Assessment of compliance of the baseline with relevant mandatory national and/or sectoral policies – PD has clearly demonstrated in section B.4 that the original baseline complies with all relevant national and sectoral policies. PP has referred the following policies which were cross checked to confirm that the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period:
  - Electricity Market Law<sup>20</sup>
  - Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy<sup>21</sup>
  - Environmental Law<sup>22</sup>
  - Regulation on Solid Waste Control<sup>23</sup>
  - Regulation on Managed Waste Landfilling<sup>24</sup>

<sup>20</sup> [Law Number: 4628 Ratification Date: 20/02/2001 Enactment Date: 03/03/2001] Reference: The official web page of EMRA; [http://www.epdk.org.tr/mevzuat/kanun/elektrik/elektrik\\_piyasalari\\_kanunu.pdf](http://www.epdk.org.tr/mevzuat/kanun/elektrik/elektrik_piyasalari_kanunu.pdf)

<sup>21</sup> [Law Number: 5346 Ratification Date: 10/05/2005 Enactment Date: 18/05/2005] Reference: The official web page of EMRA; [www.epdk.org.tr/mevzuat/diger/yenilenebilir/yenilenebilir.doc](http://www.epdk.org.tr/mevzuat/diger/yenilenebilir/yenilenebilir.doc)

<sup>22</sup> [Law Number: 2827 Ratification Date: 09/08/1983 Enactment Date: 11/08/1983] Reference: The official web page of the Ministry of Environment and Forestry; [www.cevreorman.gov.tr/yasa/k/2872.doc](http://www.cevreorman.gov.tr/yasa/k/2872.doc)

<sup>23</sup> [Last updated on 05/04/2005] Reference: The official web page of the Ministry of Environment and Forestry; <http://www.cygm.gov.tr/CYGM/Files/mevzuat/yonetmelik/kaky.doc>

<sup>24</sup> [Regulation number 27533 Enactment Date: 26/03/2010] Reference: The official web page of the Ministry of Environment and Forestry; [http://www.cygm.gov.tr/CYGM/Files/mevzuat/yonetmelik/Duzenli\\_Depolama.doc](http://www.cygm.gov.tr/CYGM/Files/mevzuat/yonetmelik/Duzenli_Depolama.doc)

- Assessment team has conducted a comprehensive assessment to determine whether the conditions used to establish the project's baseline in the previous crediting period (2<sup>nd</sup>) remain valid for the renewal period (3<sup>rd</sup>). This evaluation focused on the legislative and policy environment, electricity sales prices, and the prevalence of similar project activities. With the assessment of submitted PDD (RCP)<sup>5/</sup>, onsite inspection and cross check of registered GS4GG PDD<sup>1/</sup>, VVB confirms that there have been no significant changes in the national legislation, energy policies, or market conditions that would invalidate the original baseline scenario. The electricity sales prices have not changed in a way that would make the project's activity a common practice confirmed from the TEIAS monthly reading reports<sup>29/</sup>, and the market for similar projects does not indicate a shift in the baseline. However, a quantitative reassessment of the baseline is necessary. Therefore, baseline emission factor, which reflects the carbon intensity of the national electricity grid, has been recalculated using para 72 of Tool to calculate the emission factor of an electricity system<sup>15/</sup> (version 07.0). This recalculation is standard practice for crediting period renewals to ensure the most current and accurate data is used. Therefore, VVB concludes that the conditions for determining the baseline emissions are still valid, with the necessary update to the baseline emission factor. The project remains in full compliance with the Gold Standard requirements for baseline validity.
- Assessment whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested – the step has been correctly noted as not relevant for the proposed project activity as the technical life time of the equipment that would have continued to be used in the absence of the project activity exceeds the crediting period for which renewal is requested.
- Assessment of the validity of the data and parameters – PD has evaluated validity of the implemented data and parameters and concluded that the Global Warming Potential for CH<sub>4</sub> as well as the ex-ante determined combined margin emission factor for the 2<sup>nd</sup> crediting period shall be updated for the requested renewal period (3<sup>rd</sup> crediting period). The updated values for combined margin from 0.484 tCO<sub>2</sub>e/MWh to 0.504 tCO<sub>2</sub>e/MWh (as per para 72 of Tool 7, V7.0) and Global Warming Potential of CH<sub>4</sub> from 21 tCO<sub>2</sub>e/tCH<sub>4</sub> to 28 tCO<sub>2</sub>e/tCH<sub>4</sub> (according to the IPCC Fifth Assessment Report, 2014 (AR5)).

Therefore, it has been concluded that there is no need to update the original baseline scenario and is valid for the 3<sup>rd</sup> crediting period, though data and parameter shall be updated.

### 3.9 Eligibility Principles Assessment

- **Principle 1. Contribution to Climate Security & Sustainable Development**

The Republic of Turkey is the host country. Turkey has ratified the Kyoto Protocol on 28/05/2009<sup>25</sup>. Turkish National Focal Point to the UNFCCC is the Ministry of Environment, Urbanization and Climate Change<sup>26</sup> (MoEUCC).

The project's contribution towards sustainable development has been addressed based on the following sustainable development aspects:

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<sup>25</sup> <https://unfccc.int/node/61221>

<sup>26</sup> <https://iklim.gov.tr/en/coordination-committee-of-climate-change-adaptation-i-76>

**I. Social well-being:**

Implementation of this project enhance local employment during the construction and operation of landfill gas capture and its utilization. As a result, increased job opportunities and project trade activities partially eliminated local poverty and unemployment. As a contribution of the Project to the region's welfare, the quality of the electricity consumed in the region is increased by local electricity production, which also contributes to decreasing distribution losses.

**II. Economic well-being:**

Implementation of the project will accelerate the growth of the LFG capture and its utilization projects. Other entrepreneurs, irrespective of the sector, are encouraged to invest in this sector. It also assists in reducing Turkey's increasing energy deficit and diversify the electricity generation mix while reducing import dependency. Importantly, rural development is maintained in the areas around the project site by providing infrastructural investments to these Onsite areas.

**III. Environmental well-being:**

The project activities replace the grid electricity, which comprises different fuel sources causing greenhouse gas emissions. By substituting in the consumption of these fuels, it contributes to the conservation of water, soil, flora, and faunas. It transfers these natural resources and the additional supply of these primary energy sources to future generations. In the absence of the project activity, an equivalent amount of electricity would have been generated from the power plants connected to the grid, most of which are based on fossil fuels. Thus, the Project is replacing the greenhouse gas emissions (CO<sub>2</sub>, CH<sub>4</sub>) and other pollutants (SO<sub>x</sub>, NO<sub>x</sub>, particulate matters) from extraction, processing, transportation, and burning of fossil fuels for power generation connected to the national grid.

**IV. Technological well-being:**

Implementation of the project contributes to the broader deployment of the technology at a local and national level. It demonstrates the viability of the technology that supports improved energy security, alternative sustainable energy, and renewable energy industry development. This will also strengthen the pillars of the Turkish electricity supply based on ecologically sound technology.

**Principle 2: Safeguarding Principles**

The Safeguarding principles assessment is as below:

| Safeguarding principles   | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team  | Mitigation measure (if required) |
|---------------------------|---|---|---|----------------------------------|
| Principle 1: Human Rights | 1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined | No  | The project respects internationally proclaimed human rights including dignity, cultural property.<br><br>Turkey is a party to Universal Declaration of Human Rights: | Not applicable                   |

| Safeguarding principles                                       | Assessment questions   | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team   | Mitigation measure (if required)                              |
|---|--|---|--|---|
|   | <p>in the Universal Declaration of Human Rights.</p> <p>2. The Project shall not discriminate with regards to participation and inclusion.</p>   |   | <p><a href="http://ua.mfa.gov.tr/detay.aspx?2634">http://ua.mfa.gov.tr/detay.aspx?2634</a></p>   |   |
| Principle 2: Gender Equality                                  | <p>1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women</p> <p>2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work</p> <p>3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks</p> <p>4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)</p> | No  | <p>The project does not involve in any form discrimination in any kind of form.</p> <p>Turkey is also party to Convention on Discrimination since 1967 to prevent any form of discrimination;</p> <p><a href="http://ua.mfa.gov.tr/files.aspx?872">http://ua.mfa.gov.tr/files.aspx?872</a></p> | Not applicable  |
| Principle 3 – Community Health, Safety and Working Conditions | <p>1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the</p>  | Yes   | <p>The project leads to safe working condition and improvement in health as it will replace coal as fuel with LFG which is clean and safe. Further, periodic trainings are being implemented for all employees to ensure</p>   | <p>Training programmes will be arranged for better safety</p> |

| Safeguarding principles                                  | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team  | Mitigation measure (if required) |
|--|---|---|---|----------------------------------|
|  | workers and the community.  |   | prevention of any unsafe working condition.<br><br>Turkey has ratified ILO convention 155 and about work safety and precautions. VVB confirmed through the below web link and also during interview with PD representatives and stakeholders<br><a href="https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/WCMS_356966/lang--en/index.htm">https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/WCMS_356966/lang--en/index.htm</a> | understanding.                   |
| Principle 4 – Sites of Cultural and Historical Heritage, | Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)? | No  | NA  | NA                               |
| Principle 4.2: Forced Eviction and Displacement          | Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?   | No  | NA  | NA                               |
| Principle 4.3: Land Tenure and Other Rights              | Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage  | No  | NA  | NA                               |

| Safeguarding principles       | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team   | Mitigation measure (if required)  |
|-------------------------------|---|---|--|---|
|                               | rights or land ownership?   |   |  |   |
| Principle 5 – Corruption      | The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects   | Yes   | The project does not involve any kind of corruption.<br><br>Turkey is a party to United Nation Convention against Corruption since 2006; <a href="http://ua.mfa.gov.tr/detay.aspx?15042">http://ua.mfa.gov.tr/detay.aspx?15042</a>   | The Project owner has not any negative track record related to corruption or any such activity.   |
| Principle 6.1 – Labour Rights | <p>1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions.</p> <p>2. Workers shall be able to establish and join labour organisations.</p> <p>3. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise:</p> <p>(a) Working hours (must not exceed 48</p> | Yes   | <p>Project owner protects labours rights of all employees within this company. Workers might have occupational accidents during construction and operation phase. According to project developer, during construction and operational phase of the project “Health and Occupational Safety Regulation” will be followed.</p> <p>Regulation could be found under this link too: <a href="http://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf">http://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf</a></p> | <p>Necessary health and safety measures will be taken during operation phase according the regulation of health and safety requirements in construction Works (<a href="http://www.resmigazete.gov.tr/eskiler/2013/10/20131005-2.htm">http://www.resmigazete.gov.tr/eskiler/2013/10/20131005-2.htm</a>),. Additionally, relevant staff will be trained to be able to work with high voltages, high heights and heavy machineries ..</p> |

| Safeguarding principles | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team                         | Mitigation measure (if required) |
|-------------------------|---|---|--|----------------------------------|
|                         | <p>hours per week on a regular basis),<br/>           AND<br/>           (b) Duties and tasks,<br/>           AND<br/>           (c) Remuneration (must include provision for payment of overtime), AND<br/>           (d) Modalities on health insurance, AND<br/>           (e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND<br/>           (f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.</p> <p>4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)<br/>           5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.</p> |   |  |                                  |
| Principle 6.2 Negative  | 1. Does the project cause negative economic   | No  | The project does not involve any negative impacts and no any | Not applicable                   |

| Safeguarding principles                                  | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team  | Mitigation measure (if required) |
|--|---|---|---|----------------------------------|
| Economic Consequences                                    | consequences during and after project implementation?   |   | potential risk to local economy. The project leads to economic development of the local area by means of generating employment opportunities for local people either directly or indirectly.                                  |                                  |
| Principle 7.1 : Emissions                                | Will the Project increase greenhouse gas emissions over the Baseline Scenario?  | No  | On the contrary, it helps to reduce GHG emissions by producing green energy.  | Not applicable                   |
| Principle 7.2 : Energy Supply                            | Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?                              | Partially   | Plant sometimes can use energy from local grid. However, this amount is really less when it is compared with its production of green energy amount.   | Not applicable                   |
| Principle 8.1: Impact on natural water patterns and flow | Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity? | No  | VVB confirmed through Onsite interviews with stakeholders that are no protected aquifers close to the plant. No lakes, streams are located in the vicinity of the plant either.   | Not applicable                   |
| Principle 8.2: Erosion and/or water body stability       | 1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If  | No  | The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.2.2 Erosion and/or Water Body Instability): There is no interruption to the plant hydrological system in a | Not applicable                   |

| Safeguarding principles                        | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team  | Mitigation measure (if required) |
|--|---|---|---|----------------------------------|
|  | <p>'Yes' or 'Potentially' proceed to question 2.</p> <p>2. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?</p> |   | <p>landfill Gas recovery (LFG) plant.</p> <p>Also, during the site inspection, VVB has verified the waste will be covered with soil to block methane emissions to the atmosphere to provide sufficient containment and prevent air or rainwater to get into the waste. This cover will include clay, sand and soil layers for erosion control and plant growth.</p>   |                                  |
| Principle 9.1: Landscape modification and soil | Does the Project involve the use of land and soil for production of crops or other products?  | No  | <p>The project is being implemented in a proper way (by considering the concerns indicated via the entire principal Landscape Modification and Soil): Only potential impact to soil would be observed due to construction activities of the project, and these negligible impacts are not permanent. Furthermore, there is an access road to the project area so that there is no problem in accessing the area. The necessary attention to be paid to the speed limits of the trucks and the material inside the trucks will be covered. Trucks to be loaded in line with the axle load and will not be overloaded, the top 10% of the material to be moisturised.</p> | Not applicable                   |
| Principle 9.2: Vulnerability to                | Will the Project be susceptible to or lead to increased vulnerability,  | No  | <p>The project is being implemented in a proper way (by considering the concerns indicated via the</p>  | Not Applicable                   |

| Safeguarding principles              | Assessment questions   | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team  | Mitigation measure (if required)  |
|--------------------------------------|--|---|---|---|
| Natural Disaster                     | earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?  |   | entire principal Vulnerability to Natural Disaster): The project area is not a place to specific extreme climatic conditions and harmful natural events such as earthquake.   |   |
| Principle 9.3: Genetic Resources     | Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)? | No  | The project is renewable energy technology (LFG utilization technology). The Project not be negatively impacted by the use of genetically modified organisms or GMOs. Thus this section is Not Applicable   | Not Applicable  |
| Principle 9.4: Release of pollutants | Could the Project potentially result in the release of pollutants to the environment?  | No  | During Onsite audit, PD representative confirmed that during the crediting period, the Project Activity will produce domestic waste due to employee but it will be collected appropriately. Also, waste oil will be generated due to operation of turbines and they will also be collected and disposed following related regulations and precautions defined by the laws and the Municipality. Moreover, wastewater generated by the employee use will be collected and disposed appropriately following relevant regulations. | Wastewater will be vacuumed by vacuum truck regularly. By this way, discharge of plant sourced wastewater will not be allowed.<br><br>Waste oil will be vacuumed by vacuum truck regularly. By this way, discharge of plant sourced |

| Safeguarding principles                          | Assessment questions   | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team   | Mitigation measure (if required)  |
|--|--|---|--|---|
|  |  |   |  | waste oil will not be allowed.<br><br>Garbage bins' photos will be provided for solid household waste. By this way, solid waste disposal will not be allowed. |
| Principle 9.5: Hazardous and Non-hazardous Waste | Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials? | No  | The proposed project activity is a renewable energy project and doesn't involve any hazardous chemicals & other materials. the host party has its credible legislation "Health and Occupational Safety Regulation". Regulation could be found under this link too: <a href="http://www.resmigazete.gov.tr/eskiler/2012/06/20120630-1.htm">http://www.resmigazete.gov.tr/eskiler/2012/06/20120630-1.htm</a> | All relevant legal building codes will be applied appropriately.  |
| Principle 9.6: Pesticides and fertilizers        | Will the Project involve the application of pesticides and/or fertilisers?   | No  | NA   | Not Applicable  |
| Principle 9.7: Harvesting of forests             | Will the Project involve the harvesting of forests?  | No  | The project is renewable energy technology (LFG capture and utilization) power generation. The project activity does not involve any harvesting of forests. Thus this principle is Not Applicable.   | Not Applicable  |

| Safeguarding principles   | Assessment questions  | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team   | Mitigation measure (if required) |
|---|---|---|--|----------------------------------|
| Principle 9.8: Food   | Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?  | No  | The project is renewable energy technology (LFG capture and utilization) power generation. The Project does not modify the quantity or nutritional quality of food available. Thus this principle is Not Applicable                        | Not Applicable                   |
| Principle 9.9: Animal Husbandry                                     | Will the Project involve animal husbandry?  | No  | The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.3.9 Animal husbandry): The project does not involve any operation that disrupt husbandry and agriculture in the region. | Not Applicable                   |
| Principle 9.10: High Conservation Value Areas and Critical Habitats | Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?  | No  | NA   | Not Applicable                   |
| Principle 9.11: Endangered Species                                  | 1. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?<br><br>AND/OR<br>2. Does the Project potentially impact other areas where endangered species | No  | NA   | Not Applicable                   |

| Safeguarding principles | Assessment questions                           | Assessment of relevance to the project (Yes / potentially / no) | Justification of the Assessment team | Mitigation measure (if required) |
|-------------------------|--|---|--------------------------------------|----------------------------------|
|                         | may be present through trans boundary affects? |   |                                      |                                  |

The safeguarding principles relevant to the project activity are justified by PD based on supporting web links, references wherever applicable.

These safeguarding principles assessment is validated through references given by PD during the Onsite audit.

The SDG goals are also described below:

| SDG Indicator   | Assessment of Methodological choices/approaches for estimating the SDG outcome   |
|---|--|
| <p><b>SDG 7 –Affordable and Clean Energy:</b> Electricity produced and consumed.</p>  | <p><b>Measurement Method:</b> Electricity produced and supplied to the grid is monitored through energy meter. Monthly protocols will be signed by project participants and grid operator and stored. The amount of electricity produced by the project activity will be monitored directly at the engines.</p> <p><b>QA/QC Process:</b> This parameter is monitored monthly, and value of parameter is cross checked with invoices. The meters are calibrated on regular frequency.</p> <p><b>Relevant SDG Target:</b> 7.2 -By 2030, increase substantially the share of renewable energy in the global energy mix.</p> <p><b>Corresponding indicator:</b> Total Electricity produced (Renewable)</p> |
| <p><b>SDG 8 – Decent Work and Economic Growth:</b></p> <p>Employment generated due to project activity and training provided.</p> | <p><b>Measurement Method:</b> - Training and employment generation is monitored through training records; staff register or letter from O&amp;M contractor for training and employment details or HSE/HR records.</p> <p><b>QA/QC Process:</b> This parameter is based on records, data and no QA/QC procedure required. The VVB confirmed this parameter during Onsite interviews with employees for training and employment generation.</p> <p><b>Relevant SDG Target:</b> 8.5 – Quantitative employment and income generation/Quality of Employment.</p> <p><b>Corresponding indicator:</b> Total number of jobs (09, jobs) and trainings provided (01 Training/Year).</p>                          |
| <p><b>SDG 13 – Climate Action:</b> Emission</p>   | <p><b>Measurement Method:</b> - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor calculated as considering the EPIAS records for the net electricity generated(8,483 MWh/year) and the emission factor for the grid, 0.504</p>   |

| SDG Indicator  | Assessment of Methodological choices/approaches for estimating the SDG outcome  |
|--|---|
| <p>reductions in tCO<sub>2e</sub> from the project activity.</p> <p><b>Air Quality (emissions other than GHGs)</b></p> | <p>tCO<sub>2</sub>/MWh, (for the 3<sup>rd</sup> crediting period) which is calculated (based on para 72 of the TOOL 07 version 7.0) and published by the Ministry of Energy and Natural Resources of Turkey<sup>27</sup> which results average annual estimated emission reductions of 15,259 tCO<sub>2</sub>/year.</p> <p>This is in line with "Tool to calculate the emission factor for an electricity system, version 7"<sup>15/</sup>.</p> <p>The emission reductions are calculated as per registered PDD and as per methodology requirement.</p> <p><b>QA/QC Process:</b> This parameter is calculated, and no any QA/QC procedure required.</p> <p><b>Relevant SDG Target:</b> 13.2: Integrate climate change measures into national policies, strategies and planning</p> <p><b>Corresponding indicator:</b> Total greenhouse gas emissions per year</p> |

### **SDG Impact Tool Assessment**

Validation team has checked the SDG Impact tool<sup>6/</sup> and found that PD has correctly mentioned all the above SDGs and its calculation details. The same are found consistent in PDD<sup>5/</sup> (RCP).

- **Principle 3: Stakeholder Inclusivity**

The project is applying for the renewal of the crediting period i. e. Third crediting period from 12/08/2025 to 11/08/2032. Thus, reassessment of stakeholder's inclusivity not required.

- **Principle 4: Demonstration of real outcomes**

The Sustainable monitoring plan is described below:

| SDG Parameter/<br>Safeguarding principle      | Indicator  | Monitoring  |
|---|--|---|
| <b>SDG 7: Affordable and Clean Energy</b>     | Net Electricity Quantity to Turkish national grid delivered by the project (MWh) | Energy meter installed by Turkish grid company measure the electricity transferred to TEİAŞ substation. These meters are sealed by TEİAŞ and intervention by project developer is not possible. Measured hourly and readings monthly.               |
| <b>SDG 8: Decent Work and Economic Growth</b> | 1. Employment generated due to project activity.                                 | Project participant have Documentation pertaining to employment. Assessment team checked employment records <sup>30/</sup> and confirms that due to project activity peoples are getting more than minimum wages <sup>28</sup> as a salary and this |

<sup>27</sup>

[https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/Sebeke\\_EF\\_Bilgi\\_Formu\\_2022.pdf](https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/Sebeke_EF_Bilgi_Formu_2022.pdf)

<sup>28</sup> <https://www.csgb.gov.tr/en/news/>

| SDG Parameter/<br>Safeguarding principle | Indicator           | Monitoring   |
|--|---------------------|--|
|  |                     | <p>salary is better than local level salary which is confirmed during the interviews conducted at the time of site visit<sup>/27/</sup>. Based on the roles and responsibility of employee, the salary will be higher than the minimum salary of the region and hence the parameter monitoring is acceptable to the assessment team.</p> <p>Assessment team checked that 09 people are employed at site during Onsite audit &amp; employment records<sup>/30/</sup>. The employment opportunities generated are local or temporary or permanent as checked and confirmed by the assessment team.</p> <p>It will be ensured that safe working condition and safety equipment's has been provided for all skilled and unskilled Labor. It will be checked during verification through audit observations and interview with people if noise level is maintained within permissible limit.</p> <p>Safety equipment to be provided to workers both skilled and unskilled will be checked during the verification of the project activity. Assessment team however checked the same is already provided to the workers as part of companies CSR (EHS) policy.</p> |
| <b>SDG 13: Climate Action</b>            | Emission Reductions | The emission reduction calculation will be done as per the formula mentioned in the PDD. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.   |

### Principle 5: Financial Additionality & Ongoing Financial Need

The additionality of the project activity has been demonstrated in-line with “Tool for the demonstration and assessment of additionality”, Version 07.0. <sup>22</sup> All steps of the additionality tool have been demonstrated in the GS PDD and validation report.

Under conformance with applicable GS4GG principles and requirements guidelines for demonstrating ongoing financial needs (OFN) for a registered GS project activity at the time of its design certification renewal<sup>29</sup>, an OFN analysis is sufficiently and appropriately provided

<sup>29</sup> As per applicable GS4GG rules and procedures, registered GS projects requesting design renewal are requested to demonstrate Ongoing Financial Need (OFN) at its Design Certification Renewal phase. As part of the OFN demonstration,

(enclosed to the updated GS4GG PDD) by the project developer CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti.

As confirmed by the Applus+ Certification's assesment team, the main objective of the performed OFN analysis is to demonstrate that revenues derived Gold Standard Certification for the new and last GS crediting period of the GS project activity under GS4GG are material and relevant to its ongoing sustainability.

As outlined in the updated GS4GG PDD, the project developer CEV Marmara Enerji Üretim San. ve Tic. Ltd. Şti. demonstrated in section B.5.2 of PDD, that GS project activity indeed faced operational expenses<sup>/38/</sup>(signed OPEX breakup from project developer based on annual expenses occurred) are higher which leads to discontinuation without the continuation of its carbon revenues under GS4GG along its new and last crediting period under GS4GG (in addition to so far promoted carbon revenues)) by outlining the overall unfavorable (negative) economic/financial performance of the operation of the GS project activity (under its gradual/phased implementation schedule) even when the revenues associated to so far GS4GG carbon revenues are considered.

VVB has reviewed the financial data provided by the Project Participant regarding the anticipated carbon credit revenues and operational expenditures<sup>/38/</sup>. The quantification of the operational expenses are as follows:

Carbon Credit Revenue Calculation: The project's anticipated annual generation of 15,259 GS VERs, when multiplied by the assumed carbon market price of 4.5 USD per GS-VER (section B.5.2 of PDD \_RCP), results in an estimated annual carbon credit revenue of 68,665 USD. (15,259 GS VERs × 4.5 USD/GS VER=68,665.5 USD). The assessment team reviewed publicly available data<sup>30</sup> and found that the most recent credit rate for energy efficiency is approximately \$5.80. Therefore, the price of \$4.50 considered by the Project Developer (PD) was found to be comparable and acceptable to the assessment team.

Carbon Credit Revenue as a Percentage of OPEX: The annual carbon credit revenue of 68,665 USD was compared to the project's anticipated annual operational expenditures<sup>/38/</sup> (OPEX) of 574,400 USD. The calculation shows that the carbon credit revenue constitutes approximately 11.95% (i.e. (68,665 USD/574,400 USD×100=11.95%) of the total OPEX. This calculation is also confirmed to be mathematically consistent. Moreover, The assessment team reviewed publicly available sources<sup>31</sup> for operational expenses in the host country, Turkey. The approximate cost of **\$550,420 USD** for both units was found to be comparable to market rates and is therefore considered acceptable.

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*"(...) the project shall provide a qualitative narrative, supported by an overview of project finances, that demonstrates how the finance derived Gold Standard Certification is material to the ongoing sustainability of the Project. The narrative may include, but not limited to the following:*

- Information highlighting the key categories and amounts or relative proportions (%) of project income and outgoings, including the relative proportion of certification related cost and revenue.*
- Description on how finance derived Gold Standard Certification contributes to or is being used to sustain or enhance the project. Where no revenue is realized from Gold Standard certification during a given period, this would be considered a FAR for the next Issuance."*

<sup>30</sup> [https://www.regreener.earth/blog/voluntary-carbon-market-update?utm\\_source](https://www.regreener.earth/blog/voluntary-carbon-market-update?utm_source)

<sup>31</sup>

[https://lutpub.lut.fi/bitstream/handle/10024/144083/Effective%20LFG%20management%20with%20a%20case%20study.pdf?sequence=1&utm\\_source=](https://lutpub.lut.fi/bitstream/handle/10024/144083/Effective%20LFG%20management%20with%20a%20case%20study.pdf?sequence=1&utm_source=)

Based on the verification of the project documentation, the VVB confirms that the stated financial calculations are arithmetically accurate. The projected carbon credit revenue figures are consistent with the assumptions regarding the volume of GSVERs and the assumed market price.

Further, VVB noted that the PD is carrying out periodic verifications and the GS revenue plays a role in operational expenses<sup>/38/</sup> of the project activity which has been found acceptable.

VVB has assessed the Project Developer's declaration dated 04/07/2025 regarding the receipt of Official Development Assistance (ODA). The PD has formally declared that the project activity has not received any ODA funding. The VVB's assessment included a review of the project's financial records as per previous registered PDD<sup>/31//38/</sup> and registered documents<sup>32</sup>. Based on review & interviews during the onsite inspection, no evidence of any ODA contribution was identified. The VVB therefore confirms that, PD's declaration is consistent with the available evidence and that the project is in compliance with the Gold Standard for the Global Goals (GS4GG) requirements regarding ODA.

### **3.10 Calculation algorithm and/or formula used to determine emission reductions**

The GS4GG PDD (RCP) of the project activity is checked by the assessment team and found that approved methodologies AMS-III.G, version 10.0<sup>/9/</sup> and AMS-I.D., version 18<sup>/10/</sup> are used for the renewal of crediting period validation which is in line with the GS for Global Goals "Principles and Requirements" Version 2.1<sup>/19/</sup> which recommends the application of the latest version of the applied methodology along with the conservative argument of the approach followed. VVB confirms that the project activity is in line with the latest versions of the methodologies.

The formula used in the GS4GG PDD (RCP) was used for the calculation of emission reductions and same is found to be correct. Hence emission reduction calculation at this time of validation (RCP) is conservative and appropriate.

Assessment team checked net emission reductions for the project activity are calculated in line with the applied methodologies.

#### **LFG Capture and its Utilization for Power Generation as per AMS-III.G. Version 10.0 and, AMS-I.D., Version 18.0**

##### **Baseline Emissions**

The baseline emissions are:

1. Emissions from decomposition of waste at the landfill site
2. Emissions resulting from electricity consumption

PD has determined baseline emissions according to equation (1) of AMS-I.D., Version 18.0 as following:

$$ER_{y,estimated} = BE_y - PE_y - LE_y \text{ (equation 3 in AMS-III.G v10.0)}$$

Where:

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<sup>32</sup> <https://assurance-platform.goldstandard.org/project-documents/GS764>

ER<sub>y</sub>= Emission reductions in year y (tCO<sub>2</sub>e/year)  
 BE<sub>y</sub>= Baseline emissions in year y (tCO<sub>2</sub>e/year)  
 PE<sub>y</sub>= Project emissions in year y (tCO<sub>2</sub>e/year)  
 LE<sub>y</sub>=Leakage emissions in year y (tCO<sub>2</sub>e/year)

**Estimation of Baseline Emission of methane from the SWDS in year (BE<sub>CH<sub>4</sub>,y</sub>)**

For estimation of baseline emissions of methane from SWDS, equation 1 of AMS-III.G, Version 10.0 is used;

$$BE_y = \eta_{PJ} \times BE_{CH_4SWDS,y} \cdot (1 - OX) \times F_{CH_4,BL,y} \times GWP_{CH_4} \text{ (equation 1 in AMS-III.G)}$$

Where:

BE<sub>CH<sub>4</sub>SWDS,y</sub>= Methane emission potential of a solid waste disposal site (in t CO<sub>2</sub>e), calculated using the methodological tool “Emissions from solid waste disposal sites”.

This tool may be used:

- With the factor “f=0.0” because the amount of LFG that would have been captured and destroyed is already accounted for in this equation;
  - With the definition of year x as ‘the year since the landfill started receiving wastes, x runs from the first year of landfill operation (x=1) to the year for which emissions are calculated (x=y)’.
- The amount of waste type j deposited each year x (W<sub>j,x</sub>) shall be determined by sampling (as specified in the above-mentioned tool), in the case that waste is generated during the crediting period. Alternatively, for existing SWDS, if the pre-existing amount and composition of the wastes in the landfill are unknown, they can be estimated by using parameters related to the serviced population or industrial activity, or by comparison with other landfills with similar conditions at regional or national level:

BE<sub>CH<sub>4</sub>SWDS,y</sub>= Methane emission potential of a solid waste disposal site (in t CO<sub>2</sub>e), calculated using the methodological tool “Emissions from solid waste disposal sites”. This tool may be used:

- With the factor “f=0.0” because the amount of LFG that would have been captured and destroyed is already accounted for in this equation;
- With the definition of year x as ‘the year since the landfill started receiving wastes, x runs from the first year of landfill operation (x=1) to the year for which emissions are calculated (x=y)’.

The amount of waste type j deposited each year x (W<sub>j,x</sub>) shall be determined by sampling (as specified in the above-mentioned tool), in the case that waste is generated during the crediting period. Alternatively, for existing SWDS, if the pre-existing amount and composition of the wastes in the landfill are unknown, they can be estimated by using parameters related to the serviced population or industrial activity, or by comparison with other landfills with similar conditions at regional or national level.

- $OX =$  Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste) (dimensionless). A default value of 0.1 may be used.
- $\eta_{PJ} =$  Efficiency of the LFG capture system that will be installed in the project activity. It is used for ex ante estimation only. A default value of 50 per cent may be used.
- $F_{CH_4,BL,y} =$  Methane emissions that would be captured and destroyed to comply with national or local safety requirement or legal regulations in the year y (t CH<sub>4</sub>). The relevant procedures in “ACM0001: Flaring or use of landfill gas” may be followed, as well as taking into account the compliance with the relevant local laws and regulation if such laws and regulations exist.
- $GWP_{CH_4} =$  Global Warming Potential for methane

There is no regulation in Turkey to require the capture of methane emissions.

Therefore,

$$F_{CH_4,BL,y} = 0.$$

$BE_{CH_4,SWDS,y}$  calculation as per equation 01 of Tool 04, Version 08.1 as follows:

$$BE_{CH_4,SWDS} = \varphi_y \times (1 - f_y) \times GWP_{CH_4} \times (1 - OX) \times \frac{16}{12} \times F \times DOC_{f,y} \times MCF_y \times \sum_{x=1}^y \sum_j (W_{j,x} \times DOC_j \times e^{-k_j \times (y-x)} \times (1 - e^{-k_j}))$$

Where:

$BE_{CH_4,SWDS,y}$  =Methane emissions avoided during the year y from preventing waste disposal at the solid waste disposal site (SWDS) during the period from the start of the project activity to the end of the year y (tCO<sub>2</sub>e).

$\varphi_y$  =Model correction factor to account for model uncertainties

$f_y$  =Fraction of methane captured at the SWDS and flared, combusted or used in another manner  
 $GWP_{CH_4}$  =Global Warming Potential of methane valid for the commitment period (tCO<sub>2</sub>e/tCH<sub>4</sub>)

$OX$  =Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste)

$F$  = Fraction of methane in the SWDS gas (volume fraction)

$DOC_f$  =Fraction of degradable organic carbon (DOC) that can decompose

MCF =Methane correction factor

$W_{j,x}$  =Amount of organic waste type j prevented from disposal in the SWDS in the year x (tons)

$DOC_j$  =Fraction of degradable organic carbon (by weight) in the waste type j

$k_i$  =Decay rate for the waste type j

j =Waste type category (index)

x =Year during the crediting period: x runs from the first year of the first crediting period (x=1) to the year y for which avoided emissions are calculated (x=y)

y=Year for which methane emissions are calculated

### Electricity Generation

In accordance with AMS-I.D baseline missions include only CO<sub>2</sub> emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,y} \text{ (Equation 1 in AMS-I.D, Version 18.0)}$$

Where:

- $BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>)
- $EG_{PJ,y}$  = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
- $EF_{grid,y}$  = Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO<sub>2</sub>/MWh)

As per para 26 of AMS-I.D version 18.0, electricity generation for greenfield power plants demonstrated as follows:

$$EG_{PJ,y} = EG_{PJ, facility,y}$$

Where:

$EG_{PJ, facility,y}$  = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).

### Project Emissions

As per para 15 and 16, AMS-III.G, version 10.0, the project emissions are calculated as follows;

$$PE_y = PE_{Power,y} + PE_{Flare,y} + PE_{Process,y} \quad (\text{Equation 2 of AMS-III.G.})$$

Where:

$PE_y$  = Project emissions in year y (t CO<sub>2</sub>e).

$PE_{Power,y}$  = Emissions from the use of fossil fuel or electricity for the operation of the installed facilities in the year y (t CO<sub>2</sub>e).

$PE_{Flare,y}$  = Emissions from flaring or combustion of the landfill gas stream in the year y (t CO<sub>2</sub>e)

$PE_{Process,y}$  = Emissions from the landfill gas upgrading process in the year y (t CO<sub>2</sub>e), determined by following the relevant procedures described in annex 1 of AMS-III.H.

As there are no any landfill gas upgrading process, so the value for  $PE_{Process,y}$  is taken as zero. Moreover, There are no flaring of the LFG in the project activity thus, project emissions from flaring is taken as 0. However,  $PE_{power,y}$  calculated as explained in the below paragraphs.

Therefore, In line with the requirements of applied methodologies AMS-III.G and AMS-I.D, project emissions are calculated as follows:

$$PE_y = PE_{power,y}$$

Where,

$PE_{power,y}$  : Emission from consumption of electricity due to the project activity in year y (tCO<sub>2</sub>e/yr)

The project emissions from consumption of electricity by the project activity  $PE_{power,y}$  (also referred as  $PE_{EC,y}$ ) shall be calculated using the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”. When applying the tool, electricity sources j in the tool corresponds to the sources of electricity consumed due to the project activity.  $PE_{EC,y}$  is calculated as follows:

As per para 16 of TOOL 05 v3.0 ,

$PE_{EC,y}$  is calculated as follows:

$$PE_{EC,y} = \sum EC_{PJ,y} * EF_{EL,j,y} * (1 + TDL_{j,y}) \quad (\text{equation 1 in TOOL05 v3.0})$$

Where:

- $PE_{EC,y}$  = Project emissions from electricity consumption in year y (tCO<sub>2</sub>e/year)
- $EC_{PJ,y}$  = Quantity of electricity consumed by the project electricity consumption source j in year y (MWh/year)
- $EF_{EL,j,y}$  = Emission factor for electricity generation for source j in year y (tCO<sub>2</sub>e/MWh)
- $TDL_{j,y}$  = Average technical transmission and distribution losses for providing electricity to source j in year y

### Leakage

As there is no transfer of methane recovery technology equipment and no displacement or leakage of biomass due to the implementation of the project activity, the leakage emissions are

considered to be zero in accordance with Paragraph 42 of AMS-I.D Version 18.0 and Paragraph 18 of AMS-III.G Version 10.0

**Ex-post determination of  $F_{CH_4,PJ,y}$**

In line with para 20 of AMS-III.G, Version 20.0, The actual emission reduction achieved by the project activity during the crediting period will be calculated using the amount of methane recovered and destroyed/gainfully used by the project activity, calculated as:

$$ER_{y,calculated} = (1-OX) \times F_{CH_4,PJ,y} - F_{CH_4,BL,y} \times GWP_{CH_4} - PE_y - LE_y \text{ (equation 4 in AMS-III.G)}$$

Where:

$F_{CH_4,PJ,y}$  = Methane captured and destroyed/gainfully used by the project activity in the year y (tCH<sub>4</sub>)

Since there are no legal requirements in Turkey to destroy methane and the LFG was not captured prior to the proposed project activity. Therefore:

$$F_{CH_4,BL,y} = 0$$

Further, In accordance with applicable methodology,  $F_{CH_4,PJ,y}$  will be calculated based on the amount of monitored electricity generation, without monitoring methane flow and concentration as follows:

$$F_{CH_4,pj,Y} = \frac{EG_y \times 3600}{NCV_{CH_4} \times EE_y} \times D_{CH_4} \times GWP_{CH_4}$$

Where:

- $EG_y$  Electricity generation in year y (MWh)
- 3600 Conversion factor (1MWh=3600MJ)
- $D_{CH_4,y}$  Density of methane at the temperature and pressure of the landfill gas in year y (tonnes/m<sup>3</sup>). If LFG<sub>i,y</sub> is reported at normal conditions of temperature and pressure, the density of methane is also determined at normal conditions.
- $NCV_{CH_4}$  NCV of methane (MJ/Nm<sup>3</sup>). A default value : 35.9 MJ/Nm<sup>3</sup> is used.
- $EE_y$  Energy Conversion Efficiency of the project equipment determined as 40% default.

The values of the parameters and the calculations presented below were checked and confirmed by VVB,

The waste composition of the organic waste in the Landfill for the ex-ante estimation of the amount of methane that would have been captured/destroyed is presented as followed:

**Waste composition of organic waste at the Landfill, including DOC and k values**

| Wood / Wood waste |      | Pulp, paper, cardboard |      | Food waste, sewage organics |      | non food organics |       | Textile |      |
|-------------------|------|------------------------|------|-----------------------------|------|-------------------|-------|---------|------|
| DOC               | k    | DOC                    | k    | DOC                         | k    | DOC               | k     | DOC     | k    |
| 43%               | 0.02 | 40%                    | 0.04 | 15%                         | 0.06 | 24%               | 0.050 | 20%     | 0.05 |

**Other parameters applied in the calculation**

| $\varphi$ | f | GWP <sub>CH4</sub> | OX  | F   | DOC <sub>f</sub> | MCF |
|-----------|---|--------------------|-----|-----|------------------|-----|
| 0.75      | 0 | 28                 | 0.1 | 0.5 | 0.5              | 0.8 |

**Ex-ante estimation of the amount of methane that would have been destroyed/combusted during the third crediting period (tCO<sub>2</sub>e/year)**

| Crediting Period      | BE <sub>CH4, SWDS,y</sub> | F <sub>CH4,PJ,y</sub> | 1 – OX <sub>top_layer</sub> | (1 – OX <sub>top_layer</sub> ) × F <sub>CH4,PJ,y</sub> | F <sub>CH,BL,y</sub> | GWP <sub>CH4</sub> | BE <sub>CH4</sub> |
|-----------------------|---------------------------|-----------------------|-----------------------------|--|----------------------|--------------------|-------------------|
|                       | tCO <sub>2</sub> e        | tCH <sub>4</sub>      |                             | tCH <sub>4</sub>                                       | tCH <sub>4</sub>     |                    |                   |
|                       |                           | B                     | A                           | C=A×B  | D                    | E                  | F=(C-D)*E         |
| 12/08/2025-31/12/2025 | 9,315                     | 166.33                | 0.9                         | 149.70   | 0                    | 28                 | 4,191             |
| 01/01/2026-31/12/2026 | 25,338                    | 452.47                | 0.9                         | 407.22   | 0                    | 28                 | 11,402            |
| 01/01/2027-31/12/2027 | 26,675                    | 476.34                | 0.9                         | 428.71   | 0                    | 28                 | 12,003            |
| 01/01/2028-31/12/2028 | 25,578                    | 456.74                | 0.9                         | 411.07   | 0                    | 28                 | 11,509            |
| 01/01/2029-31/12/2029 | 24,535                    | 438.12                | 0.9                         | 394.31   | 0                    | 28                 | 11,040            |
| 01/01/2030-31/12/2030 | 23,544                    | 420.43                | 0.9                         | 378.38   | 0                    | 28                 | 10,594            |
| 01/01/2031-31/12/2031 | 22,602                    | 403.60                | 0.9                         | 363.24   | 0                    | 28                 | 10,170            |
| 01/01/2032-11/08/2032 | 13,321                    | 237.87                | 0.9                         | 214.09   | 0                    | 28                 | 5,994             |

### **Ex-post Baseline Emissions from Generation of Electricity Displaced by the Project Activity**

The baseline emissions for the project activity involves emissions resulting from electricity generated by fossil fuel fired power plants connected to the Turkish National grid. The Baseline emissions from generation of electricity is estimated as product of electricity generation and grid emission factor.

The amount of electricity generated from the utilization of LFG extracted from the landfill area will be monitored during the project activity. The emission factor of the Turkish grid ( $EF_{grid,CM,y}$ ) is calculated by Ministry of Energy and Natural Resources in accordance with The Clean Development Mechanism method of the Intergovernmental Panel on Climate Change (IPCC) and published in Turkey National Network Grid Emission Factor for 2022<sup>33</sup>, was used .

According to the datasheet published, operating margin is provided below:

- Operating Margin: 0.7108 tCO<sub>2</sub>/MWh

Further as per para 72 of TOOL 07, for the third crediting period,

*"In terms of vintage of data, project participants can choose between one of the following two options: (a) Option 1 - for the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. **For the third crediting period**, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period;*

*(b) Option 2 - For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. **For the third crediting period**, the build margin emission factor calculated for the second crediting period should be used".*

Therefore,

Build margin emission factor for 3<sup>rd</sup> crediting period has been used as same utilized under for the second crediting period. Build margin emission factor has been considered are as follows:

- **Build Margin: 0.4350 tCO<sub>2</sub>/MWh**

As per para 85 of Tool 07, Version 7.0, Combined Margin Emission Factor is calculated as follows:

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<sup>33</sup>[https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/Sebeke\\_EF\\_Bilgi\\_Formu\\_2022.pdf](https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/Sebeke_EF_Bilgi_Formu_2022.pdf)

$$EF_{grid,CM,y} = EF_{grid,OM,y} * w_{OM} + EF_{grid,BM,y} * w_{BM}$$

EF<sub>grid,BM,y</sub> = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)  
 EF<sub>grid,OM,y</sub> = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)  
 w<sub>OM</sub> = Weighting of operating margin emissions factor (%)  
 w<sub>BM</sub> = Weighting of build margin emissions factor (%)

As per para 85 of Tool 07, Version 7.0, The following default values should be used for w<sub>OM</sub> and w<sub>BM</sub>:

- (a) Wind and solar power generation project activities: w<sub>OM</sub> = 0.75 and w<sub>BM</sub> = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods;
- (b) All other projects: w<sub>OM</sub> = 0.5 and w<sub>BM</sub> = 0.5 for the first crediting period, and w<sub>OM</sub> = 0.25 and w<sub>BM</sub> = 0.75 for the second and third crediting period, unless otherwise specified in the approved methodology which refers to this tool.

Therefore:  
 w<sub>OM</sub>=0.25  
 w<sub>BM</sub>=0.75

$$EF_{grid,CM,y} = 0.7108 \text{ tCO}_2/\text{MWh} * 0.25 + 0.4350 \text{ tCO}_2/\text{MWh} * 0.75$$

$$EF_{grid,CM,y} = 0.504 \text{ tCO}_2/\text{MWh}$$

Thus, baseline emissions due to electricity generation from landfill gas as follows:

| Crediting Period      | Annual Generation (MWh/year) | Emission Factor (tCO <sub>2</sub> /year) | Baseline Emission (tCO <sub>2</sub> e/year) |
|-----------------------|------------------------------|--|---|
| 12/08/2025-31/12/2025 | 3,300                        | 0.5040                                   | 1,663                                       |
| 01/01/2026-31/12/2026 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2027-31/12/2027 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2028-31/12/2028 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2029-31/12/2029 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2030-31/12/2030 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2031-31/12/2031 | 8,483                        | 0.5040                                   | 4,275                                       |
| 01/01/2032-11/08/2032 | 5,206                        | 0.5040                                   | 2,623                                       |

### Ex-post Project Emissions

Project emissions are calculated using equation 2 of AMS-III.G., Version 10.0 <sup>/9/</sup>

$$PE_y = PE_{Power,y} + PE_{Flare,y} + PE_{Process,y}$$

Where:

PE<sub>y</sub>= Project emissions in year y (t CO<sub>2</sub>e).

$PE_{Power,y}$  = Emissions from the use of fossil fuel or electricity for the operation of the installed facilities in the year y (t CO<sub>2e</sub>).

$PE_{Flare,y}$  = Emissions from flaring or combustion of the landfill gas stream in the year y (t CO<sub>2e</sub>)

$PE_{Process,y}$  = Emissions from the landfill gas upgrading process in the year y (t CO<sub>2e</sub>), determined by following the relevant procedures described in annex 1 of AMS-III.H.

Since, As verified during the onsite visit & interviews, there are no any landfill gas upgrading process, so the value for  $PE_{Process,y}$  is taken as zero. Moreover, There are no flaring of the LFG in the project activity thus, project emissions from flaring is taken as 0. However,  $PE_{power,y}$  calculated as explained in the below paragraphs.

Therefore, In line with the requirements of applied methodologies AMS-III.G and AMS-I.D, project emissions are calculated as follows:

$$PE_y = PE_{power,y}$$

Project Emissions due to electricity generation/consumption from landfill gas capturing SWDS plant are as follows:

| Crediting Period      | Electricity Consumption (MWh/year) | Emission Factor (tCO <sub>2</sub> /year) | TDL <sup>34</sup> | $PE_{LFG,y}$ (tCO <sub>2e</sub> /year) <sup>35</sup> |
|-----------------------|------------------------------------|--|-------------------|--|
| 12/08/2025-31/12/2025 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2026-31/12/2026 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2027-31/12/2027 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2028-31/12/2028 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2029-31/12/2029 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2030-31/12/2030 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2031-31/12/2031 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |
| 01/01/2032-11/08/2032 | 5.43                               | 0.5040                                   | 11.00%            | 3.04   |

The values of the parameters and the calculations presented above were checked and confirmed by VVB.

### Ex-post Leakage emissions

In accordance with accordance with Paragraph 42 of AMS-I.D, Version 18.0 and Paragraph 18 of AMS-III.G Version 10.0 no leakage effects are accounted.

<sup>34</sup> Please refer to the TEDAS Report page 20.

<sup>35</sup> Please refer to the ER Calculation sheet for detailed calculation.

**As per equation 3 of AMS-III.G, Version 10.0, emission reductions are calculated as,**

$$ER_{y,Estimated} = BE_y - PE_y - LE_y$$

Where:

$ER_y$  = Emissions reductions in year y (t CO<sub>2</sub>e)

$BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>e)

$PE_y$  = Project emissions in the year y (t CO<sub>2</sub>e)

$LE_y$  = Leakage emissions in year y (t CO<sub>2</sub>e)

As there are no leakage effects are accounted

Therefore, ex-ante ER is calculated according to the equation below:

$$ER_y = BE_y - PE_y$$

Baseline emissions from methane avoidance and electricity generation from Landfill gas.

| Crediting Period      | Baseline Emission (Methane Avoidance LFG) (tCO <sub>2</sub> e /year) <sup>36</sup> | Baseline Emission from Power Generation (tCO <sub>2</sub> e /year) <sup>37</sup> | Baseline Emission (tCO <sub>2</sub> e /year) |
|-----------------------|--|--|--|
| 12/08/2025-31/12/2025 | 4,191  | 1,663  | 5,854  |
| 01/01/2026-31/12/2026 | 11,402   | 4,275  | 15,677                                       |
| 01/01/2027-31/12/2027 | 12,003   | 4,275  | 16,278                                       |
| 01/01/2028-31/12/2028 | 11,509   | 4,275  | 15,784                                       |
| 01/01/2029-31/12/2029 | 11,040   | 4,275  | 15,315                                       |
| 01/01/2030-31/12/2030 | 10,594   | 4,275  | 14,869                                       |
| 01/01/2031-31/12/2031 | 10,170   | 4,275  | 14,445                                       |
| 01/01/2032-11/08/2032 | 5,994  | 2,623  | 8,617  |

Total baseline emissions are as follows:

| Crediting Period      | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Emission reductions (tCO <sub>2</sub> e) |
|-----------------------|---|--|--|
| 12/08/2025-31/12/2025 | 5,854                                   | 3                                      | 5,851                                    |
| 01/01/2026-31/12/2026 | 15,677                                  | 3                                      | 15,674                                   |

<sup>36</sup> Please refer to the ER Calculation sheet for detailed calculation.

<sup>37</sup> Please refer to the ER Calculation sheet for detailed calculation.

|                       |                |           |                |
|-----------------------|----------------|-----------|----------------|
| 01/01/2027-31/12/2027 | 16,278         | 3         | 16,275         |
| 01/01/2028-31/12/2028 | 15,784         | 3         | 15,781         |
| 01/01/2029-31/12/2029 | 15,315         | 3         | 15,312         |
| 01/01/2030-31/12/2030 | 14,869         | 3         | 14,866         |
| 01/01/2031-31/12/2031 | 14,445         | 3         | 14,442         |
| 01/01/2032-11/08/2032 | 8,617          | 3         | 8,614          |
| <b>Total</b>          | <b>106,839</b> | <b>24</b> | <b>106,814</b> |

VVB accessed and confirmed the parameters considered ex-ante and ex-post in the current GS PDD (RCP) and the assessment is presented below:

| Sr. No. | Data / Parameter   | Description   | Value                                    | Assessment  |
|---------|--------------------|---|--|---|
| 1       | OX                 | Fraction of methane that would be oxidized in the top layer of the SWDS in the baseline | 0.1                                      | The value is consistent with how oxidation is accounted for in the methodological tool "Emissions from solid waste disposal sites" VVB has cross checked the same and found correct.                                  |
| 2       | GWP <sub>CH4</sub> | Global warming potential of CH <sub>4</sub>   | 28 tCO <sub>2</sub> e/tCH <sub>4</sub>   | The value applied is as per Default value from IPCC Sixth Assessment Report (AR6) available at <a href="https://www.ipcc.ch/assessment-report/ar6/">https://www.ipcc.ch/assessment-report/ar6/</a> and found correct. |
| 3       | n <sub>pj</sub>    | Efficiency of the LFG capture system that will be installed in the project activity     | 50%                                      | The value applied is as per default value under methodology AMS-III.G, Version 10.0 and found correct.  |
| 4       | GWP <sub>N2O</sub> | Global warming potential of N <sub>2</sub> O  | 265 tCO <sub>2</sub> e/tN <sub>2</sub> O | The value applied is as per Default value from IPCC Sixth Assessment Report (AR6) available at <a href="https://www.ipcc.ch/assessment-report/ar6/">https://www.ipcc.ch/assessment-report/ar6/</a> and found correct. |
| 5       | D <sub>CH4</sub>   | Density of methane  | 0.67 kg/m <sup>3</sup>                   | The value is confirmed to be based on value provided in Chapter 4, Fugitive Emissions of "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories".                                       |

|    |                            |  |   |  |  |
|----|----------------------------|--|---|--|--|
| 6  | $\varphi_{\text{default}}$ | Default value for the model correction factor to account for model uncertainties | 0.75                                    | The value is confirmed to based on Tool 04, "Emissions from solid disposal sites" Version 08.1 (Application A)   |  |
| 7  | F                          | Fraction of methane in the SWDS gas (volume fraction)                            | 0.5                                     | This value is based on tool 04: Emissions from solid waste disposal sites, version 08.1. The value was cross checked and confirmed.  |  |
| 8  | DOC <sub>f</sub>           | Fraction of degradable organic carbon (DOC) that can decompose                   | 0.5                                     | This value is based on tool 04: Emissions from solid waste disposal sites, version 08.1. The value was cross checked and confirmed.  |  |
| 9  | MCF                        | Methane correction factor  | 0.8                                     | This value is based on tool 04: Emissions from solid waste disposal sites, version 08.1 for unmanaged solid waste disposal sites – deep. This comprises all SWDS not meeting the criteria of managed SWDS and which have depths of greater than or equal to 5 meters. The value was cross checked and confirmed. |  |
| 10 | DOC <sub>j</sub>           | Fraction of degradable organic carbon (by weight) in waste type j                | <b>Waste type j</b>                     | <b>DOC<sub>j</sub> (%wet waste)</b>  | The values are based on tool 04: Emissions from solid waste disposal sites, version 08.1. The value was cross checked and confirmed. |
|    |                            |  | Wood and wood products                  | 43   |  |
|    |                            |  | Pulp, paper and cardboard               | 40   |  |
|    |                            |  | Food, food waste, beverages and tobacco | 15   |  |
|    |                            |  | Non-food organics <sup>38</sup>         | 20   |  |
|    |                            |  | Glass, plastic, metal, other inert      | 0  |  |

<sup>38</sup> Non-food organics refer to textiles, garden, yard and park wastes. Therefore a conservative value of 20% has been chosen.

|                      |  |  |                               |                      |   |  |
|----------------------|--|--|-------------------------------|----------------------|---|--|
| 11                   | k <sub>j</sub>   | Decay rate for the waste type j  | <b>Waste type j</b>           |                      | <b>Boreal and Temperature (MAT &lt; 20°C)</b>   | The values are based on tool 04: Emissions from solid waste disposal sites, version 08.1. The value was cross checked and confirmed. |
|                      |  |  |                               |                      | <b>WET (MAP/P ET &gt;1)</b>   |  |
|                      |  |  | Slowly degrading              | Paper/textiles waste | 0.06  |  |
|                      |  |  |                               | Wood, straw waste    | 0.03  |  |
| Moderately degrading | Other (non-food) organic putrescible garden and park waste | 0.10   |                               |                      |   |  |
| Rapidly degrading    | Food, food waste, sewage sludge, beverages, and tobacco    | 0.185  |                               |                      |   |  |
| 12                   | F <sub>CH<sub>4</sub>,BL,y</sub>                           | Methane emissions that would be captured and destroyed to comply with national or local safety requirements or legal regulations in the year y | 0                             |                      | Since there are no legal requirements in Turkey to destroy methane and the LFG was not captured prior to the proposed project activity. VVB has checked National laws and regulations <a href="https://www.mevzuat.gov.tr/MevzuatMetin/yonetmelik/9.5.24128.pdf">https://www.mevzuat.gov.tr/MevzuatMetin/yonetmelik/9.5.24128.pdf</a> and found applied value acceptable. |  |
| 13                   | EF <sub>grid,OM,y</sub>                                    | Operating Margin CO <sub>2</sub> emission factor in year y   | 0.7108 tCO <sub>2</sub> e/MWh |                      | The value is based on the Ministry of Energy and Natural Sources published values for the Operating, Build and Combined Margin Emission Factors for Turkish National  |  |

|    |                         |   |                               |   |
|----|-------------------------|---|-------------------------------|---|
|    |                         |   |                               | Grid. The Ministry has calculated the emission factor by using the "Tool to calculate the emission factor for an electricity system" methodology. Since it was updated in 2022 by the Ministry, these factors have been used for emission reduction calculation and found correct.  |
| 14 | EF <sub>grid,BM,y</sub> | Build Margin CO <sub>2</sub> emission factor in year y    | 0.4350 tCO <sub>2</sub> e/MWh | According to the para 72 of TOOL07, for the third crediting period, the build margin emission factor calculated for the second crediting period should be used. Therefore, second crediting period build margin emission factor is taken into account to calculate combined margin emission factor which have been used for emission reduction calculation and found correct. |
| 15 | EF <sub>grid,CM,y</sub> | Combined Margin CO <sub>2</sub> emission factor in year y | 0.5040 tCO <sub>2</sub> e/MWh | The value is calculated in line with tool 07: Tool to calculate the emission factor for an electricity system, version 07.0 and confirmed.  |

Ex-post parameters accessed and the information is presented in the following table:

| Sr. No. | Data / Parameter              | Description                           | Observation  |
|---------|-------------------------------|---------------------------------------|--|
| 1.      | BE <sub>y</sub>               | Emission reductions achieved per year | The parameter represents estimated emission reduction that will be achieved for the crediting period and will be calculated from the power generated and methane destroyed per year throughout the crediting period.   |
| 2.      | EG <sub>PJ, facility, y</sub> | Electricity Generation in year y      | The generated electricity is measured continuously by electricity meters operated by the Turkish grid company who is the owner of the meter. The amount is determined by a distance reading system, reported and invoiced every month by the grid company. Maintenance and calibration of equipment is carried out according to recognized |

|  |   |  | procedures <sup>39</sup> . In accordance with the regulation on metering equipment's, the calibration frequency is set for a 10 years period.  |  |   |  |                           |                    |             |       |            |
|--|---|--|--|--|---|--|---------------------------|--------------------|-------------|-------|------------|
| 3.                                     | Value of the imported natural gas avoided                   | Balance of payments and investment               | <p>As described in the section B.7.1 of PDD (RCP), the value of imported natural gas which will be avoided within the crediting period with annual estimated electricity generation 8,483 MWh, has been avoided or corresponding amount saved through utilization of LFG used for electricity generation. This corresponds to a saved natural gas price of 159,198.62 USD.</p> <table border="1"> <thead> <tr> <th>Average Natural Gas Price (USD/M MBtu)</th> <th>Average Natural Gas price per Generated Electricity USD/MWh</th> <th>Annual Electricity Generation (MWh/year)</th> <th>Avoided Natural Gas (USD)</th> </tr> </thead> <tbody> <tr> <td>5.50<sup>40</sup></td> <td>18.76678348</td> <td>8,483</td> <td>159,198.62</td> </tr> </tbody> </table> <p>The above calculation is based on estimated annual electricity generation, the actual values will be updated during subsequent verifications.</p> | Average Natural Gas Price (USD/M MBtu) | Average Natural Gas price per Generated Electricity USD/MWh | Annual Electricity Generation (MWh/year) | Avoided Natural Gas (USD) | 5.50 <sup>40</sup> | 18.76678348 | 8,483 | 159,198.62 |
| Average Natural Gas Price (USD/M MBtu) | Average Natural Gas price per Generated Electricity USD/MWh | Annual Electricity Generation (MWh/year)         | Avoided Natural Gas (USD)  |  |   |  |                           |                    |             |       |            |
| 5.50 <sup>40</sup>                     | 18.76678348   | 8,483  | 159,198.62   |  |   |  |                           |                    |             |       |            |
| 4.                                     | F <sub>CH<sub>4</sub>,PJ,Y</sub>                            | Quantity of methane captured by project activity | The parameter represents quantity of methane captured by the project activity throughout the crediting period. The parameter will be monitored continuously through mass flow meters, and the data is stored automatically at the server for 2 years. Technical specification (make, accuracy class, serial number etc) of the installed mass flow meters was checked and found consistent with the site visit observations. The flow meter <sup>41</sup> having calibration frequency of 10   |  |   |  |                           |                    |             |       |            |

<sup>39</sup> In accordance with the Regulation on metering equipment's, the calibration frequency is set for a 10-year period. Reference:

<http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.12316&MevzuatIliski=0&sourceXmlSearch>

<sup>40</sup> <https://www.botas.gov.tr/Sayfa/2-temmuz-2025-tarihinden-itibaren-gecerli-botas-dogal-gaz-toptan-satis-fiyat-tarifesi/803>

<sup>41</sup> There has been a change on the flow meter. (Sierra,640S-NAA-L13-M0-E2-P2-V4-DD-5-CRWS,141381 with serial number 141381) is the previous flow meter. This change is an internal decision by Project developers, this change was

|    |                          |  |   |
|----|--------------------------|--|---|
|    |                          |  | years as per registered PDD <sup>1/</sup> . Further information were also checked against the flow meter values mentioned in the PDD (RCP) (section A.3) and was found correct and consistent.  |
| 5. | AF                       | Regulatory requirements relating landfill gas projects   | The parameter represents the regulatory requirements relating landfill gas projects. This is considered monitoring parameter because in case of a change of Article 27 of the relevant regulation "Control of Solid Waste Regulation", this change will be included to the monitoring plan. The parameter will be monitored yearly during the whole crediting period. Data will be archived electronically during the crediting period and two years after. |
| 6. | NOx Emission             | The air quality is related to pollutants such as NOx which are being emitted in the baseline scenario. As a representative indicator of air pollution, nitrogen oxide is selected because mono-nitrogen oxides eventually form nitric acid when dissolved in atmospheric moisture, forming a component of acid rain.                                   | This parameter is indirectly calculated and monitored continuously throughout the crediting period, by measuring net electricity generation and multiplication with the baseline NOx intensity of the Turkish grid  |
| 7. | SO <sub>2</sub> Emission | The air quality is related to pollutants such as SOx which are being emitted in the baseline scenario. As a representative indicator of air pollution, SO <sub>2</sub> is selected as further oxidation of sulfur dioxide may lead to acid rains and as it is a precursor to particulates in the atmosphere, both of which are environmental concerns. | This parameter is indirectly calculated and monitored continuously throughout the crediting period, by measuring net electricity generation and multiplication with the baseline SOx intensity of the Turkish grid  |

done due to the intention of changing the flow meter . Instead of recalibrating the equipment in the future Project developer has chosen to replace the flow meter.

|     |   |   |  |
|-----|---|---|--|
| 8.  | Reduction of discharged cooling water in baseline | -   | For this parameter, the net electricity generation of the project from LFG gas will be recorded continuously throughout the crediting period and For this parameter, the net electricity generation of the project was recorded and multiplied with the ex-ante (baseline) cooling water discharge intensity. This corresponds to amount of water discharge in m3, avoided to discharge into the environment.  |
| 9.  | H <sub>2</sub> S Emission                         | H <sub>2</sub> S is emitted from the landfill site freely to the atmosphere, creating odor problem and worsens the living conditions of the nearby communities. Although there are several odorous gases in LFG, as a representative indicator of air pollution, hydrogen sulfide is selected because it is a very poisonous, flammable gas with the characteristic foul odor of rotten eggs. | This parameter is measured continuously (indirectly) across the whole crediting period. H <sub>2</sub> S emission will be monitored through measuring the amount of methane destroyed through combustion. The calculation will be done by measuring LFG destruction and multiplying with the ex-ante baseline H <sub>2</sub> S intensity of the LFG  |
| 10. | Reduction of Volatile Organic Compounds           | -   | This parameter is measured continuously (indirectly) across the whole crediting period. Reduction of volatile organic compounds will be monitored through measuring the amount of methane destroyed through combustion. The calculation will be done by considering the non-methane VOCs, which are typically roughly 2% of methane emissions (based on feasibility report and previous crediting period)  |
| 11. | W <sub>CH<sub>4</sub></sub>                       | Average Methane fraction in the landfill gas  | PD will measure methane fraction in the landfill gas continuously by a gas analyzer. The monitoring system works with continuous measurement devices. It is programmed to automatically save hourly values. The data are stored automatically at the booster stations. The gas analyzers are subject to a regular maintenance and testing regime to ensure accuracy. The calibration frequency of gas analyzer is 10 years inline with registered PDD (RCP) and Metering regulations <sup>42</sup> of host county. Data will be archived electronically during the crediting period and two years after. |

<sup>42</sup> <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=12316&MevzuatTur=7&MevzuatTertip=5>

|     |                         |  |   |
|-----|-------------------------|--|---|
| 12. | Operation of the engine | Operation of the engine (hours)                                | <p>The amount of hours is registered by a counting device in power generation unit with engine having an own internal counting device. The system in place is related to the three shifts policy guaranteeing 24 hour support. So once per shift the totalized values are recorded manually. The data will be cross checked with energy generation. Data will be archived electronically during the crediting period and two years after.</p> <p>The counting device of the engine is counting the operational hours continuously as the operational hours are also used for maintenance reasons.</p> |
| 13. | EC <sub>Pj,y</sub>      | Amount of electricity consumed by the project activity         | <p>PD will measure consumed electricity continuously by electricity meters operated by the Turkish grid company who is the owner of the meter. The amount is determined by a SCADA/Remote monitoring system, reported and invoiced every month by the grid company. Maintenance and calibration of equipment is carried out according to recognised procedures<sup>43</sup>. In accordance with the regulation on metering equipment's, the calibration frequency is set for a 10-year period. Data will be archived electronically during the crediting period and two years after.</p>              |
| 14  | TDL <sub>j,y</sub>      | Average technical transmission and distribution losses         | <p>The grid company calculates the TDL factor monthly and will use the factor directly for the creation of the monthly reports. The value will be monitored annually and in the absence of the data from the relevant year, most recent figures should be used (for estimation recent reliable and accurate data of TEDAŞ:Türkiye Electricity Distribution Report for 2023 <sup>44</sup> has been used). Data will be archived electronically during the crediting period and two years after</p>   |
| 15  | Quantitative employe    | Number of people employed directly due to the project activity | <p>Plant records or the training records for all the employees/SSI Records/Letter from O&amp;M independent for employment generation/DOE</p>  |

<sup>43</sup> In accordance with the Regulation on metering equipment's, the calibration frequency is set for a 10-year period. Reference:

<http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.12316&MevzuatIliski=0&sourceXmlSearch=>

<sup>44</sup> <https://www.tedas.gov.tr/FileUpload/MediaFolder/25819eac-d024-4308-891a-d248db8c1e0a.pdf>

|    |                            |                   |  |
|----|----------------------------|-------------------|--|
|    | nt and income generation   |                   | interview with employees, local stakeholders etc<br>The staff register/ HR records for income generation of staff/ HR Policies regarding health insurance/social security is checked for staff income generation and company policy benefits. This parameter also monitor number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women.   |
| 16 | Quality of Employment      | Training to staff | During the onsite verification VVB has checked the imparted training records <sup>30/</sup> which were given to the employees. Further, based on the interviews with project developer representatives, PD confirms that together with the technology supplier, the Project developer will organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures which will also be monitored in subsequent verifications . The project estimated to provide one training per employee annually, and this training is continuously monitored. |
| 17 | Hazardous waste processing | -                 | The landfill is only accepting municipal waste and not accepting hazardous waste. The landfill is accepting municipal waste in line with the Turkish law and regulations (Environmental Law <sup>45</sup> and Regulation on Waste Management <sup>46</sup> ) so hazardous waste collected by project owner and disposed by private companies.<br>This practice has been confirmed during site visit  |
| 18 | Waste Terraces             | -                 | In the baseline scenario, solid waste is disposed of at the landfill site without the regular application of a soil capping layer, and cover material is applied only after an extended period. As per the conditions prevailing prior to the implementation of the project activity, the landfill was unmanaged or semi-managed. Under the project activity, systematic landfill management practices,  |

<sup>45</sup> <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=2872&MevzuatTur=1&MevzuatTertip=5>

<sup>46</sup> <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&MevzuatTur=7&MevzuatTertip=5>

|    |                     |   |  |
|----|---------------------|---|--|
|    |                     |   | <p>including timely application of cover material, are implemented to mitigate waste-related impacts such as odour, in accordance with the requirements of AMS-III.G (Version 10.0).</p> <p>Spraying<sup>/36/</sup> operations are carried out at project site regularly with frequency of 3 days a week. This was confirmed through site visit</p>  |
| 19 | Leachate management | - | <p>PD will ensure that leachate is properly collected, stored, and transported safely to the municipal treatment facility of Bolu. VVB has checked the submitted the declaration given by Bolu Municipality which indicates that they are responsible of collecting the leakage from the project site.</p> <p>For this parameter, the leakage is sent to sewage treatment facility of Bolu Municipality where the leakage water is disposed. As per the onsite verifications of leachate management records<sup>/34/</sup> and interviews with PP, VVB confirms that , the leachate from domestic wastes is disposed of by pumping it into the sewer line.</p> |

### SDG 13 Climate Action

**Parameter:** Emission reductions achieved per year

| Crediting Period                                | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Emission reductions (tCO <sub>2</sub> e) |
|---|---|--|--|
| 12/08/2025-31/12/2025                           | 5,854                                   | 3                                      | 5,851                                    |
| 01/01/2026-31/12/2026                           | 15,677                                  | 3                                      | 15,674                                   |
| 01/01/2027-31/12/2027                           | 16,278                                  | 3                                      | 16,275                                   |
| 01/01/2028-31/12/2028                           | 15,784                                  | 3                                      | 15,781                                   |
| 01/01/2029-31/12/2029                           | 15,315                                  | 3                                      | 15,312                                   |
| 01/01/2030-31/12/2030                           | 14,869                                  | 3                                      | 14,866                                   |
| 01/01/2031-31/12/2031                           | 14,445                                  | 3                                      | 14,442                                   |
| 01/01/2032-11/08/2032                           | 8,617                                   | 3                                      | 8,614                                    |
| <b>Total</b>                                    | <b>106,839</b>                          | <b>24</b>                              | <b>106,814</b>                           |
| <b>Total number of crediting years</b>          |   | <b>7</b>                               |  |
| <b>Annual average over the crediting period</b> | <b>15,263</b>                           | <b>3</b>                               | <b>15,259</b>                            |

**SDG 7: Affordable and Clean Energy**

**Parameter:** Quantity of electricity generated by the project activity (MWh)

| Year  | Baseline estimate (MWh/year) | Project estimate (MWh/year) | Net benefit (MWh/year) |
|---|------------------------------|-----------------------------|------------------------|
| 12/08/2025-31/12/2025                           | 0                            | 3,300                       | 3,300                  |
| 01/01/2026-31/12/2026                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2027-31/12/2027                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2028-31/12/2028                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2029-31/12/2029                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2030-31/12/2030                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2031-31/12/2031                           | 0                            | 8,483                       | 8,483                  |
| 01/01/2032-11/08/2032                           |                              | 5,206                       | 5,206                  |
| <b>Total</b>                                    | <b>0</b>                     | <b>59,404</b>               | <b>59,404</b>          |
| <b>Total number of crediting years</b>          | 7                            |                             |                        |
| <b>Annual average over the crediting period</b> | <b>0</b>                     | 8,483                       | 8,483                  |

**SDG 8: Decent Work and Economic Growth**

**Parameter:** Number of Jobs created

| Year                  | Baseline estimate | Project estimate                       | Net benefit                            |
|-----------------------|-------------------|--|--|
| 12/08/2025-31/12/2025 | 0                 | 9 employee<br>1 training/employee/year | 9 employee<br>1 training/employee/year |
| 01/01/2026-31/12/2026 | 0                 | 9 employee<br>1 training/employee/year | 9 employee<br>1 training/employee/year |
| 01/01/2027-31/12/2027 | 0                 | 9 employee<br>1 training/employee/year | 9 employee<br>1 training/employee/year |

|  |   |   |   |
|--|---|---|---|
| 01/01/2028-31/12/2028                    | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| 01/01/2029-31/12/2029                    | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| 01/01/2030-31/12/2030                    | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| 01/01/2031-31/12/2031                    | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| 01/01/2032-11/08/2032                    |   | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| Total                                    | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1 training/employee/year    |
| Total number of crediting years          | 7 |   |   |
| Annual average over the crediting period | 0 | 9 employee<br>1<br>training/employee/year | 9 employee<br>1<br>training/employee/year |

#### 4. REFERENCE

| S. No. | Document/Evidence/Reference/Web blink, Version, Date  |
|--------|---|
| 1.     | GS4GG registered PDD dated 20/12/2017, version 12.0<br><a href="https://assurance-platform.goldstandard.org/project-documents/GS764">https://assurance-platform.goldstandard.org/project-documents/GS764</a>  |
| 2.     | Registered Validation report of previous crediting periods.<br><a href="https://assurance-platform.goldstandard.org/project-documents/GS764">https://assurance-platform.goldstandard.org/project-documents/GS764</a>  |
| 3.     | GS Monitoring report for previous monitoring period 03/11/2021 - 31/07/2023 (under 2 <sup>nd</sup> crediting period) version 10 dated 11/10/2024.<br><a href="https://assurance-platform.goldstandard.org/project-documents/GS764">https://assurance-platform.goldstandard.org/project-documents/GS764</a>  |
| 4.     | GS verification report for previous verification period 03/11/2021 - 31/07/2023 (under 2 <sup>nd</sup> crediting period)<br><a href="https://assurance-platform.goldstandard.org/project-documents/GS764">https://assurance-platform.goldstandard.org/project-documents/GS764</a>   |
| 5.     | GS PDD (RCP) version 01 dated 13/06/2025<br>GS PDD (RCP) version 04 dated 08/08/2025  |
| 6.     | Emission reduction Sheet version 03 dated 31/07/2025<br>SDG Impact Tool, dt 31/07/2025  |
| 7.     | Previously registered Monitoring documents across 1 <sup>st</sup> and 2 <sup>nd</sup> Crediting Period.<br><a href="https://assurance-platform.goldstandard.org/project-documents/GS764">https://assurance-platform.goldstandard.org/project-documents/GS764</a>  |
| 8.     | Feasibility Study of Turkey Bolu LFG to Energy Project by CEV dated , November 2009   |
| 9.     | AMS-III.G, Version 10.0<br><a href="https://cdm.unfccc.int/methodologies/DB/0KHNES8D09H134V3TZDQ47C3LQL3H2">https://cdm.unfccc.int/methodologies/DB/0KHNES8D09H134V3TZDQ47C3LQL3H2</a>  |
| 10.    | AMS-I.D., Version 18.0<br><a href="https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTFQOQFQQH4SBK">https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTFQOQFQQH4SBK</a>   |
| 11.    | Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, version 03.0.1<br>Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, version 03.0.1<br><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a>   |
| 12.    | Tool 04: Emissions from solid waste disposal sites, version 08.1<br><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a>   |
| 13.    | Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0<br><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a>  |
| 14.    | TEIAS (Turkish Electricity Transmission Company)<br><a href="https://www.teias.gov.tr/tr-TR/turkiyeelektrik-uretim-iletim-istatistikleri">https://www.teias.gov.tr/tr-TR/turkiyeelektrik-uretim-iletim-istatistikleri</a>   |
| 15.    | Tool07: Tool to calculate the emission factor for an electricity system, version 07.0<br><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a>  |
| 16.    | GS4GG Validation and Verification Standard, Version 2.0<br><a href="https://globalgoals.goldstandard.org/113-par-validation-and-verification-standard/">https://globalgoals.goldstandard.org/113-par-validation-and-verification-standard/</a><br>GS4GG , "site visit and on-site visit requirements and procedures"<br><a href="https://globalgoals.goldstandard.org/112_par_site-visit-and-remote-audit-requirements-and-procedures/">https://globalgoals.goldstandard.org/112_par_site-visit-and-remote-audit-requirements-and-procedures/</a> |
| 17.    | CDM project standard for project activities, version 03.0<br><a href="https://cdm.unfccc.int/Reference/Standards/index.html">https://cdm.unfccc.int/Reference/Standards/index.html</a>  |
| 18.    | Waste Amount Records (2023-2025)  |
| 19.    | The Gold Standard for Global Goals "Principles and Requirements" Version 2.1<br><a href="https://globalgoals.goldstandard.org/all-documents/">https://globalgoals.goldstandard.org/all-documents/</a>   |
| 20.    | Community Services Activity Requirements, version 1.2<br><a href="https://globalgoals.goldstandard.org/201-ar-community-services-activity-requirements/">https://globalgoals.goldstandard.org/201-ar-community-services-activity-requirements/</a>  |

| S. No. | Document/Evidence/Reference/Web blink, Version, Date  |
|--------|---|
| 21.    | Renewable Energy Activity Requirements, version 1.4<br><a href="https://globalgoals.goldstandard.org/202-ar-renewable-energy-activity-requirements/">https://globalgoals.goldstandard.org/202-ar-renewable-energy-activity-requirements/</a>  |
| 22.    | Tool for the demonstration and assessment of additionality, Version 07.0<br><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a>   |
| 23.    | Laws and regulations:<br><br>Electricity Market Law<br><a href="https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6446&amp;MevzuatTur=1&amp;MevzuatTertip=5">https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6446&amp;MevzuatTur=1&amp;MevzuatTertip=5</a><br>Environmental Law dated<br><a href="https://www.mevzuat.gov.tr/mevzuatmetin/1.5.2872.pdf">https://www.mevzuat.gov.tr/mevzuatmetin/1.5.2872.pdf</a><br><br>Regulation on Managed Waste Land Filling<br><a href="https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13887&amp;MevzuatTur=7&amp;MevzuatTertip=5">https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13887&amp;MevzuatTur=7&amp;MevzuatTertip=5</a><br>Regulation on Solid Waste Control<br><a href="https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&amp;MevzuatTur=7&amp;MevzuatTertip=5">https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&amp;MevzuatTur=7&amp;MevzuatTertip=5</a> |
| 24.    | Provisional acceptance report/Commissioning certificate dated 26/08/2011 by Ministry of Energy and natural Resources, Turkey  |
| 25.    | Agreement on connection to the distribution dated 10/03/2011<br>(CEV Marmara Energy Production Industry and Trade Limited Company )   |
| 26.    | Single Line Diagram   |
| 27.    | On-Site Interviews and photographs by 16/06/2025  |
| 28.    | Environmental Permit Certificate by dated 19/12/2022 issued by Bolu Governorate<br>(Provincial Directorate of Environment, Urbanization and Climate Change) valid undtil 31/12/2017   |
| 29.    | Sample electricity generation report/ TEİAŞ monthly reading reports (2023-2024)   |
| 30.    | Employment /SGK records – 07/01/2025 (latest)<br>Training records dated 13/02/2025 & 18/03/2024   |
| 31.    | No double counting declaration dated 07/07/2025<br>ODA Declaration by PD (GS4GG format) by dated 04/07/2025   |
| 32.    | Tool 08: Tool to determine the mass flow of a greenhouse gas in a gaseous stream, version 03.0  |
| 33.    | IPCC 6 <sup>th</sup> assessment report - <a href="https://www.ipcc.ch/assessment-report/ar6/">https://www.ipcc.ch/assessment-report/ar6/</a><br>IPCC 5 <sup>th</sup> assessment report- <a href="https://www.ipcc.ch/assessment-report/ar5/">https://www.ipcc.ch/assessment-report/ar5/</a><br>IPCC 2006 Guidelines for National Greenhouse Gas Inventories and 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories   |
| 34     | Bolu Municipality declaration for Leachate Management by dated 31/01/2017   |
| 35     | GS4GG Clarification No 183 17/07/2023, for<br>Requirement of design change on decommissioning of a component without capacity change – Details for included under section 01 & footnote number 9 of this report.  |
| 36     | <ul style="list-style-type: none"> <li>• Flowmeter records (S.No. 22041803)</li> <li>• Calibration certificate of flow meter</li> <li>• Spraying records for mitigating odor and waste Terraces.</li> <li>• Gas Analyzer records and calibration certificates (S/n XMC02102854726)</li> <li>• Electricity generation meter and calibration records (S/n, BYL067000832 – Main Meter &amp; BYL067000833 – Spare Meter BYL067000833)</li> </ul>  |

| S. No. | Document/Evidence/Reference/Web link, Version, Date  |
|--------|--|
|        | <ul style="list-style-type: none"> <li>• Inspection test procedure for O2/CH4 Gas analyzer</li> <li>• Gas engine brochure and technical description of equipment's installed under LFG plant.</li> </ul> |
| 37     | GS Deviation request form dated 18/10/2021   |
| 38     | Signed Declaration for OPEX expenses (incorporating OPEX sheet break-up of operational cost) by PD dated 08/07/2025  |
| 39     | National laws and regulations<br><a href="https://mevzuat.gov.tr/">https://mevzuat.gov.tr/</a>   |

## **5. FINAL PROJECT DESIGN CERTIFICATION RENEWAL STATEMENT**

Applus+ Certification have performed an RCP validation of the "Bolu Landfill Gas to Energy Project, Turkey". The RCP validation was performed on the basis of Gold Standard GS4GG guideline and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the GS4GG PDD (RCP) and the subsequent follow-up interviews has provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC and Gold Standard requirements for the Gold Standard (GS4GG) and all relevant host country criteria. The project will hence be recommended by Applus+ Certification for renewal of crediting period with the Gold Standard Registry.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO<sub>2</sub> emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 15,259 tCO<sub>2</sub>e per year.

The RCP validation has been performed following the requirements of the latest version of the GS4GG Validation and Verification Standard, Version<sup>16/</sup> 2.0, GS4GG principles and requirements<sup>19/</sup>, V2.1 and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

- The project does not result in negative social, environmental and/or economic impacts.
- The project contribution to Environment, Social Development and Economic and technological development
- The project additionality is sufficiently justified in the Gold Standard PDD
- The project does not result in diversion of ODA.
- Conservative assumptions were applied in the project description.
- The monitoring plan of SD parameters is transparent and adequate.
- The project meets the stakeholder consultation requirements

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the RCP validation.

**Date:** 11/08/2025

**Lead**

**Auditor/Technical Expert in Trainee:** Mr. Amit Rai

**Tech. Expert:** Mr. Atul Takarkhede

**Tech. Reviewer:** Mr. Nikunj Agarwal

**Approver** (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

| ASSESSMENT TEAM   |  |
|---|--|
| <b>Lead Auditor:</b><br>Mr. Amit Rai  | <b>Technical Reviewer:</b><br>Mr. Nikunj Agarwal   |
| Signature:<br> | Signature:<br> |
| <b>Approver:</b><br>Mr. Agustín Calle de Miguel   |  |
| Signature:<br> |  |

**Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table**

|   |   |                                    |            |
|---|---|------------------------------------|------------|
| Type:   | <input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 01         |
| Raised by:  | Assessment Team   | Ref. to checklist in above tables: | 3.8        |
| Description of the audit finding  |   | Date:                              | 02/07/2025 |
| <ul style="list-style-type: none"> <li>• Under submitted GS4GG SDG impact tool, number of training over the year/over the crediting period observed to be missing. Also, throughout the PDD_RCP, the estimated value of no of training's are not clearly demonstrate. Thus, PD shall provide clarification for further assessment.</li> <li>• PD shall submit performance review of last verification period under second crediting period for further assessment, observed to be missing under the submitted set of documents and not yet published GS4GG project portal.</li> </ul> |   |                                    |            |
| Project Participant's response  |   | Date:                              | 11/07/2025 |
| <ul style="list-style-type: none"> <li>• SDG Impact tool and PDD are revised accordingly.</li> <li>• Documents are provided as requested.</li> </ul>  |   |                                    |            |
| Documentation provided as evidence by Project Participant   |   |                                    |            |
| Please see the last verification docs tab in the shared link.   |   |                                    |            |
| Auditor's assessment comment  |   | Date:                              | 27/07/2025 |
| <ul style="list-style-type: none"> <li>• Number of training (01 Training/Employee/Year) , has now been clearly demonstrated under revised SDG Impact tool and throughout the PDD, which is checked and found acceptable to the assessment team.</li> <li>• Previous performance review for the period 03/11/2021 to 31/07/2023, has now been submitted by the project developer.</li> </ul>   |   |                                    |            |
| <b>Hence , CL-01 is closed.</b>   |   |                                    |            |

|   |   |                                    |            |
|---|---|------------------------------------|------------|
| Type:   | <input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 02         |
| Raised by:  | Assessment Team   | Ref. to checklist in above tables: | 3.8        |
| Description of the audit finding  |   | Date:                              | 02/07/2025 |
| <ul style="list-style-type: none"> <li>• In registered PDD it was mentioned that 150, 000 inhabitants now it's 300,000 under section A.1 of RCP_PDD. PD shall clarify the same</li> <li>• Landis+Gyr E550, brand/model has been mentioned under the monitoring period 03/11/2021 to 31/07/2023. PD shall clarify the inconsistency with meter details incorporated under section A.3</li> <li>• In section A.3 of PDD, Serial number of mentioned flow meter observed to be inconsistent with details included for the monitoring period 03/11/2021 to 31/07/2023. And the calibration date is mentioned as 05/10/2022. PD shall clarify the inconsistency along with supportive document.</li> </ul> |   |                                    |            |
| Project Participant's response  |   | Date:                              | 11/07/2025 |

|   |       |            |
|---|-------|------------|
| <ul style="list-style-type: none"> <li>• There has been a typo. The value is revised to 150,000.</li> <li>• As it can be seen from the calibration certificates and photographs of the meters, brand is Baylan and the manufacturer is BAYLAN ÖLÇÜ ALETLERİ SANAYİ VE TİCARET A.Ş. In the previous monitoring-period there has been a confusion regarding the Brand of the meters. The electricity meters are not changed and still the same with the last verification activity.</li> <li>• There has been a change in the flow meter on January 2025. The new meter details can be found in the flow meter manufacturer calibration certificate.</li> </ul>                         |       |            |
| Documentation provided as evidence by Project Participant   |       |            |
| EPDK Lisan Tadil.pdf<br>SEDAS BTK.40 TEST REPORT.pdf (Electricity meter)<br>EPI 22041803.pdf (Flow meter)   |       |            |
| Auditor's assessment comment  | Date: | 27/07/2025 |
| <ul style="list-style-type: none"> <li>• No of habitant's (150,000) has now been mentioned, which is checked and found in-line with the registered PDD.</li> <li>• Meter detail's (Make and Serial number) are correctly demonstrated under updated section of A.3 which is checked and verified by the assessment team &amp; found in-line with submitted meter photographs, calibration certificates and manufacturer test reports.</li> <li>• Flow meter serial number has now been updated which has been verified from the submitted manufacturer calibration certificate (provided by EPI Eldridge Products Inc.), having factory calibration date up-to 05/10/2022.</li> </ul> |       |            |
| <b>Hence, CL-02 is Closed now.</b>  |       |            |

|   |   |                                    |            |
|---|---|------------------------------------|------------|
| Type:   | <input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 03         |
| Raised by:  | Assessment Team   | Ref. to checklist in above tables: | 3.8        |
| Description of the audit finding  |   | Date:                              | 02/07/2025 |
| <ul style="list-style-type: none"> <li>• <i>Kindly explain how condition A is applicable in with applicability condition of Tool 04, V8.1</i></li> <li>• <i>In section B.6.2 of PDD, for ex-ante parameter, <math>GWP_{CH_4}</math>, default value of 21 is mentioned as per applied methodology AMS-III.G. However, vau of 28 GWP for CH4 has been mentioned and used under the estimate ER sheet calculation. Clarification requiried along with supportive evidences.</i></li> <li>• <i>In section B.6.2 of PDD, for ex-ante parameter <math>n_{PJ}</math> default value of 50 % is mentioned as per applied methodology AMS-III.G. PD shall clarify along with supportive evidences.</i></li> </ul>                                       |   |                                    |            |
| Project Participant's response  |   | Date:                              | 11/07/2025 |
| <ul style="list-style-type: none"> <li>• Explanation is added.</li> <li>• As per the rule update Applicability Of Global Warming Potential For Gold Standard For The Global Goals Projects (<a href="https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf">https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf</a>) dated 02/06/2021, updated values for GWPs should be used.This document states the IPCC AR5 values should be used. Thus, GWP for CH4 is taken as 28.</li> <li>• The previous value 70% was taken from the feasibility report that has been prepared at the start of the project. However, to be consistent with the registered PDD, value is revised as 50%.</li> </ul> |   |                                    |            |
| Documentation provided as evidence by Project Participant   |   |                                    |            |

|  |       |            |
|--|-------|------------|
| Auditor's assessment comment   | Date: | 27/07/2025 |
| <ul style="list-style-type: none"> <li>Demonstration of application A of Tool 04, for the Project which mitigates methane emissions from a specific existing SWDS has now been included under section B.2 of updated PDD.</li> <li>Justification provided by the project owner for applying GWP for CH4 (28) as per update <a href="https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf">https://globalgoals.goldstandard.org/standards/RU-2020-PR-V1.2-GWP-values.pdf</a>, and IPCC AR5 is found acceptable.</li> <li>The value for parameter, "npj", has now been corrected under section B.6.2 of updated PDD which has been verified by the assessment team and found in-line with registered PDD and applied methodology <i>AMS-III.G</i>.</li> </ul> |       |            |
| <b>Hence, CL-03 is closed now.</b>   |       |            |

|   |   |                                    |     |
|---|---|------------------------------------|-----|
| Type:   | <input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 04  |
| Raised by:  | Assessment Team   | Ref. to checklist in above tables: | 3.8 |
| Description of the audit finding  | Date:   | 02/07/2025                         |     |
| <ul style="list-style-type: none"> <li><i>Expected operational life of the project as per registered PDD was mentioned as 15 years as per section C.2, however it's under submitted PDD RCP it's mentioned as 17.8 years. PD shall clarify the same with supportive evidences.</i></li> </ul>   |   |                                    |     |
| Project Participant's response  | Date:   | 11/07/2025                         |     |
| As per the generation license the operational lifetime is 17 years and 8 months therefore section C.2 is indicating the same.   |   |                                    |     |
| Documentation provided as evidence by Project Participant   |   |                                    |     |
| EPDK Lisan Tadil.pdf (Generation License)   |   |                                    |     |
| Auditor's assessment comment  | Date:   | 27/07/2025                         |     |
| The generation license, dated 24/12/2020 has been updated as per new unit installed not for the old one (1.131 Mwe) for which current renewal of crediting period is going on. Thus. PD shall clarify the operational lifetime of the project activity in-line with previous monitoring period/registered documents.  |   |                                    |     |
| <b>Hence, CL-04 is open.</b>  |   |                                    |     |
| Project Participant's response  | Date:   | 30/07/2025                         |     |
| Operational lifetime is revised as 15 years. Please refer to Section A.3.   |   |                                    |     |
| Documentation provided as evidence by Project Participant   |   |                                    |     |
|   |   |                                    |     |
| Auditor's assessment comment  | Date:   | 31/07/2025                         |     |
| <ul style="list-style-type: none"> <li>Operational lifetime of the project activity has now been revised across the updated PDD (RCP) which is checked and found in-line with the requirement of Tool 10, Tool to determine the remaining lifetime of equipment (Version 01). Moreover, there is separate forward action request (FAR-01) has been raised for project operational lifetime of the project.</li> </ul> |   |                                    |     |
| <b>Hence, CL-04 is closed now</b>   |   |                                    |     |

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| Type:  | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 01         |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | 3.2        |
| Description of the audit finding   |   | Date:                              | 02/07/2025 |
| <p><i>During desk review, assessment team observe following</i></p> <ol style="list-style-type: none"> <li><i>In section A.1, Expected amount of average electricity generation, emission reductions and total emission reductions over the crediting found to be missing. Corrective action shall be required along with supportive evidences. PD is requested to crosscheck spell and font through the report, as few instances' inconstancies observed.</i></li> <li><i>PD shall include complete key event details in-line with registered PDD (for 2<sup>nd</sup> monitoring period). Details are observed to be missing</i></li> <li><i>Declaration from project developer for ODA funding shall be required as per PDD Template Filling instructions, V1.5</i></li> </ol> |   |                                    |            |
| Project Participant's response   |   | Date:                              | 11/07/2025 |
| <ol style="list-style-type: none"> <li>1.Revised as requested.</li> <li>2.Key event details are added as per the registered 2<sup>nd</sup> CP PDD.</li> <li>3.ODA declaration form is provided.</li> </ol>   |   |                                    |            |
| Documentation provided as evidence by Project Participant  |   |                                    |            |
| ODA DECLARATION  |   |                                    |            |
| Auditor's assessment comment   |   | Date:                              | 27/07/2025 |
| <ol style="list-style-type: none"> <li>1. Expected amount of average electricity generation, emission reductions and total emission reductions over the crediting period has now been included under section A.1 of updated PDD which is further checked and found in-line with estimated ER spreadsheet (for RCP).</li> <li>2. Chronology of key events pertaining the current project activity since tender issuance of the project i.e. 20/01/2009.</li> <li>3. PD has now submitted signed declaration for No Double Counting by dated 07/07/2025. ODA declaration by dated (GS4GG standard format) by dated 04/07/2025 which are further checked and verified by the assessment team and found acceptable.</li> </ol> <p><b>Hence, CAR-01 is closed now.</b></p>            |   |                                    |            |

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| Type:  | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 02         |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | 3.2        |
| Description of the audit finding   |   | Date:                              | 02/07/2025 |
| <p><i>During desk review, assessment team observe following inconsistencies;</i></p> <ol style="list-style-type: none"> <li><i>In section A.1.1 Eligibility of the project under Gold Standard, For eligibility points , Indicate sub-para reference numbers for section 2 and 4 of GS4GG-Renewable-Energy-Activity-Requirements v1.4</i></li> <li><i>In section A.1.1, PD shall clarify how para no 4.4.3 has been complied which states - Projects shall mandatorily undergo Design Certification Renewal every 5 years as per Principles &amp; Requirements.</i></li> <li><i>Declaration on behalf of PD for no double counting or participation any other emission trading program shall be required.</i></li> </ol> |   |                                    |            |

|   |       |            |
|---|-------|------------|
| <i>4. Web-link incorporated for Solid Waste Control observed to be inconsistent with attached web-link. Corrective action shall be required.</i>  |       |            |
| Project Participant's response  | Date: | 11/07/2025 |
| 1.Sub paragraph and paragraph references are added as requested.<br>2.The project is registered at 12/08/2011. At that time GS4GG version was not available.The crediting period was determined to be 7 years. Thus, the Project undergoes design certification renewal every 7 years.<br>3.Declaration signed by the Project Owner is provided.<br>4.The date was a typo. The date is revised also more accurate link is provided.   |       |            |
| Documentation provided as evidence by Project Participant   |       |            |
| Solid Waste Management Regulation Link:<br><a href="https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&amp;MevzuatTur=7&amp;MevzuatTertip=5">https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&amp;MevzuatTur=7&amp;MevzuatTertip=5</a><br>GS764-Double Accounting   |       |            |
| Auditor's assessment comment  | Date: | 27/07/2025 |
| <ol style="list-style-type: none"> <li>References of sub-para numbers for applied eligibility criteria has now been included under section A.1.1. which is further checked and found in-line with "GS4GG-Renewable-Energy-Activity-Requirements v1.4".</li> <li>Justification provided by the project developer is found acceptable and details pertaining to -07 years crediting period has now been included through – out the updated PDD (RCP).</li> <li>Declaration has now been submitted by PD (dt. 07/07/2025) for no double counting or participation any other emission trading program which is checked and found acceptable to the assessment team.</li> <li>Weblink for "Waste Management Regulation", has now been corrected under footnote no 10 of updated PDD, further checked and found acceptable to assessment team.</li> </ol> |       |            |
| <b>Hence, CAR-02 is closed now.</b>   |       |            |

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| Type:  | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 03  |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | 3.8 |
| Description of the audit finding   | Date:   | 02/07/2025                         |     |
| <ul style="list-style-type: none"> <li>For applicability condition for AMS-I.D, Version 18.0, PD shall explain as per applicability condition for both renewable and non-renewable components or new unit co-fires fossil fuel.</li> <li>Demonstration of Condition 7 of applicability criteria of AMS-I.D observed to be missing. Corrective action shall be required for further assessment.</li> <li>In-line with applicability condition no 4 of AMS-III.G. PD shall demonstrate the calculation that project will not reduce more than 60kt CO2 equivalent annually.</li> </ul> |   |                                    |     |
| Project Participant's response   | Date:   | 11/07/2025                         |     |
| <ul style="list-style-type: none"> <li>Explanation is revised as requested.</li> <li>Condition 7 is provided already at the start of the page 15.</li> <li>Section is revised as requested.</li> </ul>   |   |                                    |     |
| Documentation provided as evidence by Project Participant  |   |                                    |     |
| Auditor's assessment comment   | Date:   | 27/07/2025                         |     |

- Section B.2, applicability condition as per AMS-I.D, Version 18.0, has now been updated and incorporated demonstration for project applicability as per para no 6 of applied methodology.
- Condition 7 of applied methodology (AMS-I.D., V18.0) has now been demonstrated under section B.2 of updated PDD which is checked and found acceptable to the assessment team.
- Applicability condition no. 4 of applied methodology (AMS-III.G, V10.0) has now been demonstrated under section B.2 of updated PDD which is checked and found acceptable to the assessment team.

**Hence, CAR-03 is closed now.**

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| Type:  | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 04         |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | 3.8        |
| Description of the audit finding   |   | Date:                              | 02/07/2025 |
| <i>In line with GS4GG principle and requirements, V2.1 from para 4.1.51 to 4.1.53. PD shall demonstrate ongoing financial need under the current project activity.</i>   |   |                                    |            |
| Project Participant's response   |   | Date:                              | 11/07/2025 |
| Section is filled as requested. For OPEX values please refer to the declaration provided by the Project Owner.   |   |                                    |            |
| Documentation provided as evidence by Project Participant  |   |                                    |            |
| GS764 Bolu_LFG_Project_OPEX_Letter   |   |                                    |            |
| Auditor's assessment comment   |   | Date:                              | 27/07/2025 |
| Project developer has now included details pertaining to Ongoing Financial Need (OFN), in-line with para 4.1.51 to 4.1.53 of GS4GG principle and requirements, V2.1. Further, PD has also submitted OPEX declaration by dated 08/07/2025 and demonstrated their yearly operational cost to run the current Project activity. |   |                                    |            |
| <b>Hence, CAR-04 is closed now.</b>  |   |                                    |            |

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| Type:  | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 05         |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | 3.8        |
| Description of the audit finding   |   | Date:                              | 02/07/2025 |
| <ol style="list-style-type: none"> <li>1. In section B.6, PO shall mention the relevant SDG indicator number for chosen SDG goals under the current project activity.</li> <li>2. Under section B.6.1, for "Ex-post Determination of Emission Reductions. The incorporated emission reductions calculation found inconsistent with para 20 of applied applied methodology AMS-III.G version 10.0</li> <li>3. Under section B.6.1, Demonstration of para 26 of AMS-I.D, Version 18.0 observed to be missing.</li> <li>4. For monitoring parameter, ECpj,y, Source of estimated electricity generation shall be required for further estimation</li> </ol> |   |                                    |            |
| Project Participant's response   |   | Date:                              | 11/07/2025 |
| 1.Indicators are added as requested.   |   |                                    |            |

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|---|-------|------------|
| 2.Please see para 21 of AMS-III.G. There is an additional equation which allows projects to calculate utilized methane with the equation 4. Since the registration of the project, ex-post methane capture amount is calculated with this equation.   |       |            |
| 3.Section is revised as requested. Para 26 reference is added.  |       |            |
| Documentation provided as evidence by Project Participant   |       |            |
|   |       |            |
| Auditor's assessment comment  | Date: | 27/07/2025 |
| <ol style="list-style-type: none"> <li>1. SDG indicator for goal 13 is only demonstrated for few parameters for both Ex-ante and es-post parameters, However, parameters which are indicating SDG goal 7 and 8 still observed to be missing. <b>OPEN.</b></li> <li>2. Justification provided by the project developer is found acceptable, However, equation mentioned in para 21 of applied meth AMS-III.G for only calculation of <math>FCH_{4,PJ,Y}</math> not for the Emission Reduction's. In the incorporated information in section B.6.1 the value of Oxidation factor is not demonstrated. Hence, further corrective action shall be required in line with equation 4 which is for the calculation of "actual emission reduction" not for only utilized methane. <b>OPEN.</b></li> <li>3. Demonstration of para 26 of applied methodology, AMS-I.D, versión 18.0 has now been incorporated which is checked and found to be acceptable.</li> </ol> |       |            |
| <b>Hence, CAR -05 is still OPEN</b>   |       |            |
| Project Participant's response  | Date: | 30/07/2025 |
| <ol style="list-style-type: none"> <li>1.SDG numbers are added above parameters as requested.</li> <li>2.There was a typo in the equation. Equation 4 is revised.</li> </ol>  |       |            |
| Documentation provided as evidence by Project Participant   |       |            |
|   |       |            |
| Auditor's assessment comment  | Date: | 31/07/2025 |
| <ol style="list-style-type: none"> <li>1. SDG Goal, 13, 7 &amp; 8 has now been demonstrated for across the updated PDD for both ex-ante and ex-post parameters which is checked and found acceptable to the assessment team.</li> <li>2. In section B.6.1, of updated PDD (RCP), equation 4 of AMS-III.G, Version 10.0 has now been corrected which is checked and found acceptable.</li> </ol>   |       |            |
| <b>Hence, CAR-05 is closed now.</b>   |       |            |

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|---|---|------------------------------------|-----|
| Type:   | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR | Number:                            | 06  |
| Raised by:  | Assessment Team   | Ref. to checklist in above tables: | 3.8 |
| Description of the audit finding  | Date:   | 02/07/2025                         |     |
| <i>Under section C of submitted PDD_RCP</i> <ul style="list-style-type: none"> <li>• PD shall define start date of the project activity in-line with PDD Template Filling instructions, V1.5 for section C.1.1</li> </ul>   |   |                                    |     |
| Project Participant's response  | Date:   | 11/07/2025                         |     |
| Section is revised as per the registered 2 <sup>nd</sup> CP PDD.  |   |                                    |     |
| Documentation provided as evidence by Project Participant   |   |                                    |     |
| Updated PDD (RCP)   |   |                                    |     |
| Auditor's assessment comment  | Date:   | 27/07/2025                         |     |
| <ul style="list-style-type: none"> <li>• PD has demonstrated the start date of the project activity in-line with PDD Template Filling instructions, V1.5 which is further cross-checked with registered documents and found acceptable to the assessment team.</li> </ul> |   |                                    |     |

**Hence, CAR-06 is closed now**

|  |   |                                    |            |
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| Type:  | <input type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input checked="" type="checkbox"/> FAR | Number:                            | 01         |
| Raised by:   | Assessment Team   | Ref. to checklist in above tables: | -          |
| Description of the audit finding   |   | Date:                              | 08/08/2025 |
| <ul style="list-style-type: none"> <li>• <i>As per the PDD, the original 1.131 MWe unit's technical life will end on 11 August 2026. The verifying VVB shall check and confirm that whether PP has extended the life time of the gas engine</i></li> <li>• <i>The PDD says, secondary gas engine unit with an installed capacity of 1.413 MWe, commissioned on 23 September 2022 is a backup unit. The verifying VVB shall check and confirm that no emission reductions are claimed for this gas engine</i></li> <li>• <i>If the operational life time of the gas engine with capacity 1.131 MWe is over on 11 August 2026, the verifying VVB shall check and confirm no emission reductions are claimed beyond this date by PP.</i></li> </ul> |   |                                    |            |
| Project Participant's response   |   | Date:                              | DD/MM/YYYY |
| Documentation provided as evidence by Project Participant  |   |                                    |            |
| Auditor's assessment comment   |   | Date:                              | DD/MM/YYYY |

## **Appendix 2: Audit Team CVs**

| <b>Name</b>                | <b>SHORT CV. BACKGROUND INFORMATION</b>  |
|----------------------------|--|
| <b>Mr. Amit Rai</b>        | <p>Mr. Amit Rai, has done Bachelor of Technology in Electrical &amp; Electronics Engineering from Dr. A.P.J. Abdul Kalam Technical University and pursuing his Master of Technology in Energy Management from School of Energy &amp; Environmental Studies, DAVV, Indore, India and He is also Government Certified Competency Class – I, Electrical Supervisor from Government of National Capital Territory of Delhi, India. He has more than 8 years of working experience in different organizations like Sunrator Technologies, Sun Source Energy Private Ltd. (SHV Energy Group, Singapore) &amp; KBS Certification Services Private Ltd. (UNFCCC’s – DOE), In the area of Renewable Project Management, Execution, Designing &amp; Climate Change Services. Currently he is associated with True Quality Certifications Private Limited (Applus+ Certification’s Outsourced Entity). Mr. Amit Rai is based in Delhi, India.</p> <p>Mr. Amit Rai participates as part of the Audit Team as the Lead Auditor and Technical Expert-in-training for the assessment.</p> |
| <b>Mr. Nikunj Agarwal</b>  | <p>Mr. Nikunj Agarwal has very extensive experience (19 years) in the field of carbon market. He had been working with the different Europeans DoE’s (Verification Bodies) accredited by UNFCCC for the Carbon Credits Certification. He had also worked as consultant for Energy Efficiency projects. Apparently, he had worked as Monitoring and Verification Experts in Energy Efficiency Projects. He had worked more than 300 Carbon projects under CDM/VCS/GS) in South Asia and others Region such as: India, Philippines, Malaysia, Fiji, Indonesia, China, Israel, Pakistan, Chile, Peru, Columbia, South Africa, Singapore, Nepal &amp; Thailand. He is the Certified Energy Manager by the Bureau of Energy Efficiency, Government of India. He is in the Pool of Methodology Expert by the UNFCCC. He was part of the Gold Standard Advisory Panel for the CLIMATE SMART AGRICULTURE (CSA). Mr. Nikunj Agrawal is based in Duba City, Saudi Arabia. Mr. Nikunj Agarwal participates as Technical Reviewer (TR) for this Project activity.</p>                  |
| <b>Dr. Atul Takarkhede</b> | <p>Dr. Atul Takarkhede is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 18 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations’ environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution &amp; Solid &amp; Hazardous Waste management among others. Furthermore, he counts with solid</p>   |

|                                  |  |
|----------------------------------|--|
|                                  | <p>experience on CDMVCS-GS consultancy and auditing. He has extensive experience of about 10 years with DOEs, including UNFCCC CDM and other carbon related schemes (e.g., VCS, GS, GCC) in renewable energy, cement industries, biomass projects and waste handling &amp; management projects. Currently he is associated with True Quality Certifications Private Limited (Applus+ Certification’s Outsourced Entity) and empaneled with Applus+ Certification to carry out GHG audits in the aforementioned schemes. Dr. Atul Takarkhede is based in Nagpur, India.</p> <p>Dr. Atul Takarkhede participates as part of the Audit Team as the Technical expert &amp; GS Approved auditor for the assessment.</p>   |
| <p><b>Dr. Yusuf Serengil</b></p> | <p>Dr. Yusuf Serengil is a Forest Engineer with a Ph.D. in Watershed Management. He has experience in climate change at both policy and technical accounting (GHG inventory) levels. He has been involved in the UNFCCC process since 2010 as a technical land-use sector advisor. He participated in projects in Kyrgyzstan, Palestine, and USA and took part in review teams reviewing several countries' GHG inventories. He is a LULUCF expert with all the UNFCCC GHG expert certificates, including GHG inventory review expert, Biennial Report expert, Biennial Update Report expert, and National Communications. Dr. Yusuf Serengil is based in Istanbul. Currently he is associated with True Quality Certifications Pvt. Ltd. (Applus+ Certification’s Outsourced Entity) as Local Expert in Turkey.</p> |