



**GLOBAL
CARBON
COUNCIL**

Driving Climate Actions

Project Verification Report

V3.1 - 2020

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COVER PAGE	
Project Verification Report Form (PVR)	
BASIC INFORMATION	
Name of approved GCC Project Verifier / Reference No. (also provide weblink of approved GCC Certificate)	Carbon Check (India) Private Limited. /GCCV004/01 http://globalcarboncouncil.com/wpcontent/uploads/2021/10/carbon-check-india-private-limitedccipl.pdf
Type of Accreditation	<input type="checkbox"/> Individual Track ¹ <input checked="" type="checkbox"/> CDM Accreditation CDM Accreditation: 12/01/2021 to 12/01/2023 UNFCCC (15/04/2019 to 01/06/2024) https://cdm.unfccc.int/GCC_verifier/list/GCC_verifier.html?entityCode=E-0052 <input type="checkbox"/> ISO 14065 Accreditation: 28/06/2021 to 27/06/2024 http://nabcb.qci.org.in/accreditation/reg_bod_ghg.php
Approved GCC Scopes and GHG Sectoral scopes for Project Verification	<p>GCC Scope</p> <ul style="list-style-type: none"> • Green House Gas (GHG# - ACC) • Environmental No-harm (E+) • Social No-harm (S+) • Sustainable Development Goals (SDG+) <p>GHG Sectoral Scope</p> <p>1. Energy (renewable/non-renewable sources) (CDM TA 1.1, 1.2)</p> <p>13. Waste handling and disposal (CDM TA 13.1, 13.2)</p>
Validity of GCC approval of Verifier	08/03/2023 to 31/05/2024
Title, completion date, and Version number of the PSF to which this report applies	Title: Panda Van Biogas Project Completion date: 15/12/2023 Version number of PSF: 10

¹ **Note:** GCC Verifier under Individual tack is not eligible to conduct verifications for the GCC project that intends to supply carbon credits (ACCs) for CORSIA requirements.

Title of the project activity	Panda Van Biogas Project
Project submission reference no. (as provided by GCC Program during GSC)	S00799
Eligible GCC Project Type² as per the Project Standard (Tick applicable project type)	<input checked="" type="checkbox"/> Type A: <input type="checkbox"/> Type A1 <input checked="" type="checkbox"/> Type A2 Sub-type 1: This type includes existing operational projects, not submitted to any GHG Program, which have started operations after 1 January 2016 <input type="checkbox"/> Type B – De-registered CDM Projects: <input type="checkbox"/> Type B1 <input type="checkbox"/> Type ³ B2
Date of completion of Local stakeholder consultation	10/12/2020
Date of completion and period of Global stakeholder consultation. Have the GSC comments been verified. Provide web-link.	Date of completion: 19/01/2023 Period of GSC: 05/01/2023 – 19/01/2023 No comments were received. https://www.globalcarboncouncil.com/global-stakeholders-consultation/
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners)	Panda Alüminyum A.Ş
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	On behalf of Project Owner is Contact Person: M. Kemal Demirkol GTE KARBON SÜRDÜRÜLEBİLİR ENERJİ EĞİTİM DANIŞMANLIK VE TİCARET A.Ş e-mail: kemal.demirkol@gte.com.tr

² Project Types defined in Project Standard and Program Definitions on GCC website.

³ GCC Project Verifier shall conduct Project Verification for all project types except B₂.

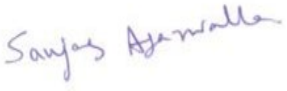
Country where project is located	Turkiye
GPS coordinates of the Project site(s)	North 38°33'28.79" (38.5580) East 43°25'27.08 (43.4242)
Applied methodologies (approved methodologies of GCC or CDM can be used)	ACM0022 Version 3.0 "Alternative waste treatment process"
GHG Sectoral scopes linked to the applied methodologies	Scope 1 - energy industries (renewable / non-renewable sources) Scope 13 - Waste handling and disposal
Project Verification Criteria: Mandatory requirements to be assessed	<input checked="" type="checkbox"/> ISO 14064-2, ISO 14064-3 <input checked="" type="checkbox"/> GCC Rules and Requirements <input checked="" type="checkbox"/> Applicable Approved Methodology <input checked="" type="checkbox"/> Applicable Legal requirements /rules of host country <input checked="" type="checkbox"/> National Sustainable Development Criteria (if any) <input checked="" type="checkbox"/> Eligibility of the Project Type <input checked="" type="checkbox"/> Start date of the Project activity <input checked="" type="checkbox"/> Meet applicability conditions in the applied methodology <input checked="" type="checkbox"/> Credible Baseline <input checked="" type="checkbox"/> Additionality <input checked="" type="checkbox"/> Emission Reduction calculations <input checked="" type="checkbox"/> Monitoring Plan <input checked="" type="checkbox"/> No GHG Double Counting <input checked="" type="checkbox"/> Local Stakeholder Consultation Process <input checked="" type="checkbox"/> Global Stakeholder Consultation Process <input checked="" type="checkbox"/> United Nations Sustainable Development Goals (Goal No 13- Climate Change) <input checked="" type="checkbox"/> Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	<input checked="" type="checkbox"/> Environmental Safeguards Standard and do-no-harm criteria <input checked="" type="checkbox"/> Social Safeguards Standard do-no-harm criteria <input checked="" type="checkbox"/> United Nations Sustainable Development Goals (in additional to SDG 13) <input checked="" type="checkbox"/> CORSIA requirements
Project Verifier's Confirmation: The <i>GCC Project Verifier</i> has verified the GCC project activity and therefore confirms the following:	The GCC Project Verifier Carbon Check (India) Private Limited, certifies the following with respect to the GCC Project Panda Van Biogas Project

	<p><input checked="" type="checkbox"/> The Project Owner has correctly described the Project Activity in the Project Submission Form (version 10, dated 15/12/2023) including the applicability of the approved ACM0022 version 3.0 and meets the methodology applicability conditions and is expected to achieve the forecasted real, measurable and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reductions estimates correctly and conservatively.</p> <p><input checked="" type="checkbox"/> The Project Activity is likely to generate GHG emission reductions amounting to the estimated 865,763 tCO_{2e} over the crediting period of 10 years, as indicated in the PSF, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules, including ISO 14064-2 and ISO 14064-3.</p> <p><input checked="" type="checkbox"/> The Project Activity is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and is likely to achieve the following labels:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Environmental No-net-harm Label (E⁺) <input checked="" type="checkbox"/> Social No-net-harm Label (S⁺) <p><input checked="" type="checkbox"/> The Project Activity is likely to contribute to the achievement of United Nations Sustainable Development Goals (SDGs), complies with the Project Sustainability Standard, and contributes to achieving a total of 05 SDGs, with the following⁴ SDG certification label (SDG⁺):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Bronze SDG Label <input type="checkbox"/> Silver SDG Label <input type="checkbox"/> Gold SDG Label <input checked="" type="checkbox"/> Platinum SDG Label <input type="checkbox"/> Diamond SDG Label <p><input checked="" type="checkbox"/> The Project Activity complies with all the applicable GCC rules⁵ and therefore recommends GCC Program to register the Project activity with above mentioned labels.</p>
<p>Project Verification Report, reference number and date of approval</p>	<p>Version 02.0</p> <p>Dated 03/01/2024.</p>

⁴ SDG Certification labels: Bronze label (1 star): by achieving 2 out of 17 SDGs; Silver label (2 star): by achieving 3 out of 17 SDGs; Gold label (3 star): by achieving 4 out of 17 SDGs; Platinum label (4 star): by achieving 5 out of 17 SDGs; and Diamond label (5 star): by achieving more than 5 out of 17 SDGs.

⁵ "GCC Rules" are defined in Project Definitions and refers to the rules and requirements set out by the GCC program related to GHG emission reductions and its voluntary certification labels and are available on the GCC Program's public website: <https://www.globalcarboncouncil.com/resource-centre.html>

Project Verification Report

Name of the authorised personnel of GCC Project Verifier and his/her signature with date	 Sanjay Kumar Agarwalla, Technical Director
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1. PROJECT VERIFICATION REPORT

Section A. Executive summary

Panda Alüminyum A.Ş. has appointed the GCC Verifier, Carbon Check (India) Private Ltd., to perform an independent project verification of the Project “**Panda Van Biogas Project**” in Türkiye (hereafter referred to as “Project”). This report summarizes the findings of project verification of the project, performed on the basis of GCC rules and requirements as well as criteria given to provide for consistent project operations, monitoring and reporting. This report contains the findings and resolutions from the project verification and a verification opinion.

The project is implemented and operated by Panda Alüminyum A.Ş and involves collection of LFG from existing SWDS and biomethanization of fresh waste received by the new SWDS. LFG and Gas collected from anaerobic digester are used to produce electricity and supply to the national grid. The GCC project only claims the emission reduction and ACC over biomethanization of the fresh waste and electricity produced from the use of biogas from anaerobic digester only. The total installed capacity is 5.804 MWm/5.656 MWe of which share of biogas in the installed capacity is 4.08 MWe which is determined as per the cumulative gas production estimation carried out for LFG and anaerobic digester respectively. The project is located in Tuşba District of Van Province of Türkiye. The expected operational lifespan of Panda Van Biogas Project landfill site is 28 years as per generation license.

The estimated electricity generation corresponding to the share of anaerobic digester is 30,604 MWh per year and project is expected to achieve an annual average emission reduction of 86,576 tCO₂e. The total emission reductions during the fixed 10-year crediting period will be 865,763 tCO₂e.

The project also contributes to Environmental No-net-harm Label (E+), Social No-net-harm Label (S+) and 5 United Nations Sustainable Development Goals (SDG+).

The purpose of the project verification is to have a thorough and independent assessment of the proposed Project Activity against the applicable GCC rules and requirements, including those specified in the Project Standard, applied methodology/methodological tools and any other requirements, in particular, the project's baseline, monitoring plan and the host Party criteria. These are verified to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Verification requirement for all GCC projects activity is necessary to provide assurance to stakeholders of the quality of the Project Activity and its intended generation of Approved Carbon Credits (ACCs).

Location

The project is located in Tuşba District of Van Province of Türkiye.

Scope of the Verification

The project verification scope is defined as the independent and objective review of the project submission form (PSF /1/). The PSF /1/ is reviewed against the relevant criteria and decisions by the GCC, including the CDM approved baseline and monitoring methodology, ACM0022 version

3.0 /B02/. The verification team has, based on the recommendations in the GCC Project Standard, Version 3.1 /B01-1/ and Project Verification Standard Version 3.1 /B01-2/ employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of ACCs.

The project verification is not meant to provide any consulting towards the project owner. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the program design.

While carrying out the verification, CCIPL determines if the PSF complies with the requirements of the applicability conditions of the selected methodology /B02/, guidance issued by the GCC and also assess the claims and assumptions made in the PSF /1/ without limitation on the information provided by the project owner.

Project verification Process

Strategic risk Analysis and delineation of the project verification and sampling plan:

CC IPL employed the following Project Verification process:

1. Conflict of interest review at the time of contract review;
2. Selection of Audit Team at the time of contract review;
3. Kick-off meeting with the client;
4. Review of the draft PSF listed on GCC website for public consultation;
5. Development of the Verification plan and sampling plan;
6. Desktop review and evaluation of emission reduction calculations;
7. Follow-up interaction with the client; and final statement and report development.

The project verification process has utilized to gain an understanding of the:

- Project's design, GHG emission sources and reductions,
- Baseline determination and additionality,
- GHG monitoring plan,
- Environmental & Social impacts,
- Stakeholder's consultation,
- SD indicators integrated with the project and
- Verify the collection and handling of data, the calculations that lead to the results, and the means for reporting the associated data and results.

Development of the project verification Plan:

The Audit Team formally documented its project verification plan as well as determine the data-sampling plan.

The project verification plan was developed based on discussion of key elements of the project verification process during the kick-off meeting and as per the criteria of engagement. Client had the opportunity to comment on key elements of this plan for project verification. Based on items discussed above and agreed upon with the client in the signed contract, the plan identified the CCIPL audit team members based on following:

- Project level of assurance (which is reasonable as per GCC requirements),
- Materiality threshold and
- Standards of evaluation and reporting for the Verification.

It also provides an outline of the project verification process and established project deliverables. The project verification consists of the following four phases:

- I. A desk review of the project submission form.
 - A review of the data and information;
 - Cross checks between information provided in the PSF /01//02/ and information from sources with all necessary means without limitations to the information provided by the project owner;
- II. Follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel having knowledge with the project development;
 - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project owner;
- III. Reference to available information relating to projects or technologies similar to project under project verification and review, based on the approved methodology /B02/ being applied, of the appropriateness of formulae and accuracy of calculations.
- IV. The resolution of outstanding issues and the issuance of the final project verification report and opinion.

The project verification team confirms the contractual relationship signed between the GCC Verifier, CCIPL and the Project Owner. The team assigned to the project verification meets the CCIPL's internal procedures including the GCC requirements for the team composition and competence. The GCC verifier has conducted a thorough contract review as per GCC and CCIPL's procedures and requirements.

The report is based on the assessment of the PSF /1/ undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews and stakeholder interviews, review of the applicable/applied methodology /B02/ and their underlying formulae and calculations.

This report contains the findings from the project verification which are successfully resolved by the PO to confirm the program design in the documents is sound and reasonable and meets the stated requirements and identified criteria.

Conclusion

The CDM baseline and monitoring methodology ACM0022 Version 3.0 "Alternative waste treatment process" /B02/ has been applied to the project.

Carbon Check (India) Private Ltd. is able to conclude the project verification with a positive opinion that the GCC Project Activity "Panda Van Biogas Project" in Türkiye, as described in the PSF (Version 10, dated 15/12/2023) /1-b/, meets all applicable GCC rules and requirements, including those specified in the Project Standard /B01-1/, applied CDM methodology /B02/, tools and guidelines from GCC.

Carbon Check (India) Private Ltd. therefore is able to recommend the project to the GCC for registration.

Section B. Project Verification team, technical reviewer and approver

B.1. Project Verification team

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GCC Project Verifier or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Project Verification findings
1.	Team Leader	IR	Raychoudhury	Rishi Kishore	CC IPL	X	X	X	X
2.	Technical Expert	IR	K V	Kiran	CC IPL	X	X	X	X
3.	Financial/ Other Expert	IR	Dimri	Anubhav	CC IPL	X			X
4.	Local Expert	ER	ERDURAN	Muhammet Ali	CC IPL		X	X	

B.2. Technical reviewer and approver of the Project Verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GCC Project Verifier or outsourced entity)
1.	Technical reviewer	IR	Anand	Amit	CC IPL
2.	Approver	IR	Agarwalla	Sanjay Kumar	CC IPL

Section C. Means of Project Verification

C.1. Desk/document review

List of all documents reviewed or referenced during the project verification is provided in Appendix-3.

C.2. On-site inspection

Duration of on-site inspection: 17/04/2023				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting and brief project description by the PP	Panda Van		Rishi Kishore
2.	Project Implementation and Legal requirements.			
3.	Physical site visit (to check project implementation and operation)			
	Discussion on Monitoring plan, monitoring process, operational and management			

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4.	structure for monitoring, and responsibility and institutional arrangement for data collection and archiving. Implementation of monitoring plan as per the Project submission Form (PSF).	Biogas project site, Tusba district, Van Province, Türkiye	17/04/2023	Raychoudhary, Kiran K V, Muhammet Ali ERDURAN
5.	Discussion on Environmental Impacts, Social Impacts ,United Nations Sustainable Development Goals , and CORSIA requirements			
6.	Discussion on Baseline determination, Methodological applicability, Additionality requirement, Emission reduction calculation, Local Stakeholder Consultation			
7.	Interview with local stakeholders.			

C.3. Interviews

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No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Buack	Serap	Panda aluminyum Tesis Muduris	17/04/2023	Project implementation, Operation and management structure, Implementation of monitoring plan, Data collection and achieving, E+, S+ and SDG	Rishi Kishore Raychoudhary, Kiran K V, Muhammet Ali ERDURAN
2.	Sabasi	Irmak	GTE	17/04/2023	Implementation of monitoring plan as per PSF, Baseline determination, Additionality requirement, Emission reduction calculation	
3.	Bedir	Omer	Local Stakeholder	17/04/2023	Local stakeholder consultation discussions, grievances,	
4.	Eralmac	Ramazan	Local Stakeholder	17/04/2023		
5.	Yigit	Yuksel	Staff: Panda Aluminyum	17/04/2023	Job creation, occupational Health and safety trainings, Other trainings, grievances	
6.	Yakut	Sinan	Staff: Panda Aluminyum	17/04/2023		
7.	Tarkan	Ozer	Staff: Panda Aluminyum	17/04/2023		
8.	Ates	Azad	Staff: Panda Aluminyum	17/04/2023		
9.	Bucak	Abdullah	Staff: Panda Aluminyum	17/04/2023		

C.4. Sampling approach

Not applicable

C.5. Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	Applicable to Project Types	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)				
Identification and Eligibility of project type	A ₁ , A ₂ , B ₁ , B ₂			
General description of project activity	A ₁ , A ₂ , B ₁ , B ₂	CL 01	CAR 02, CAR 04, CAR 22, CAR 23	

Application and selection of methodologies and standardized baselines	A1, A2, B1, B2			
- Application of methodologies and standardized baselines	A1, A2, B1, B2	CL02	CAR06, CAR07, CAR 08, CAR 09, CAR 10, CAR 11, CAR12, CAR13, CAR 14, CAR15, CAR 24	
- Deviation from methodology and/or methodological tool	A1, A2, B1, B2			
- Clarification on applicability of methodology, tool and/or standardized baseline	A1, A2, B1, B2			
- Project boundary, sources and GHGs	A1, A2, B1, B2		CAR16, CAR17	
- Baseline scenario	A1, A2, B1, B2	CL03	CAR18, CAR 25	
- Demonstration of additionality including the Legal Requirements test	A1, A2, B1, B2	CL07, CL08	CAR19, CAR 26, CAR 27, CAR 28, CAR 29	
- Estimation of emission reductions or net anthropogenic removals	A1, A2, B1, B2	CL06,	CAR03, CAR20, CAR 31, CAR 32	
- Monitoring plan	A1, A2, B1, B2	CL05, CL09	CAR21, CAR 30, CAR 33, CAR 34, CAR 35, CAR 36	
Start date, crediting period and duration	A1, A2, B1, B2			
Environmental impacts	A1, A2, B1, B2			
Local stakeholder consultation	A1, A2, B1			
Approval & Authorization- Host Country Clearance	A1, A2, B1, B2			
Project Owner- Identification and communication	A1, A2, B1, B2			
Global stakeholder consultation	A1, A2, B1			
Others (Compliance with PSF template)	A1, A2, B1, B2		CAR01	
Others (Supporting documents)		CL04		
VOLUNTARY CERTIFICATION LABELS				
Environmental Safeguards (E ⁺)	A1, A2, B1			
Social Safeguards (S ⁺)	A1, A2, B1			
Sustainable development Goals (SDG ⁺)	A1, A2, B1			
Authorization on Double Counting from Host Country (only for CORSIA)	A1, A2, B1			
CORSIA Eligibility (C ⁺)			CAR05	
Total		09	36	

Section D. Project Verification findings

D.1. Identification and eligibility of project type

Means of Project Verification	Desk review, Interviews
Findings	No findings raised
Conclusion	<p>The Verification team reviewed the PSF /01-b/ and confirms that the Project Owner determines the type of proposed GCC project activity as Type A2. Such project activity shall have the start date of operations after 1 January 2016.</p> <p>The sub-type 1 under type A2 has been defined for the project activity. This This type includes existing operational projects, not submitted to any GHG Program, which have started operations after 1 January 2016.</p> <p>The proposed project activity has started its operations on 25/10/2019 (date of commissioning of first gas engine/05/), its start date of crediting period is 25/10/2019. The initial submission to the GCC program has been done on 06/01/2022 and the GSC period was from 05/01/2023 to 19/01/2023. This complies with the requirement of §11 of the GCC Project Standard (version 03.1) /B01-1/ and § 25 (b) of GCC Project Verification Standard (version 03.1) /B01-2/ and § 3(c) of GCC clarification no.1 (version 1.3).</p>

D.2. General description of project activity

Means of Project Verification	Desk review, Interviews
Findings	CL01, CAR02, CAR04, CAR22, and CAR23 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion	<p>The description of the project activity contained in the PSF /1-b/ can be considered transparent, detailed, and provides a clear overview of the project.</p> <p>The project: Panda Van Biogas Project” is developed by Panda Alüminyum A.Ş. in Tusba district of Van province of Türkiye.</p> <p>The proposed project involves biomethanization of fresh waste from SDWS and production of electricity and supply to the national grid of Türkiye. The project facility also involves the utilization of LFG from existing landfill. However as per the requirement of applied methodology ACM0022 (version 3.0) /B02/, LFG collected and electricity generated over collected LFG is excluded from the proposed GCC project activity and only the electricity generated from the biogas produced from the anaerobic digester using the organic waste segregated from fresh MSW is considered under project activity.</p> <p>The project facility has a total electricity capacity of 5.804MWm/5.56 MWe (4X 1.414 Mwe) as per amended generation license dated 30/06/2022 /05-b/ of which share of biogas in the installed capacity is 4.08 MWe /02-b/ which is determined as per the cumulative gas production estimation carried out for LFG and anaerobic digester respectively. The annual estimated electricity generation and emission reduction is 30,604 MWh and 86,576 tCO₂e respectively. Prior to the project activity, there were no LFG capture system in the SWDS facility. Thus, the baseline scenario as per the applied methodology ACM0022 (version 03.0) /B02/ would be electricity generated through the operation of grid connected power plants by the fossil fuel source and disposal of organic waste at unmanaged SWDS which result in methane emission into the atmosphere.</p>

	The project is located in Tuşba District of Van Province of Türkiye. Coordinates of the location is given below.		
	North	43°25'27.08	43.4242
	East	38°33'28.79"	38.5580
	The milestone of project activity and its verified source is given below.		
	Milestone	Date	Verified source
	Provisional Acceptances for Gas Engines 1, 2 and 3	25/10/2019	/06-a/
	Gas Engine 4	21/09/2022	/06-b/
	Connection Agreement	17/10/2019	/08/
	System Use Agreement	01/09/2022	/08/
	EIA Approved	07/06/2021	/07-a/
	Connection Agreement Revised	31/08/2022	/08/
	System Use Agreement Revised	01/09/2022	/08/
1 st Generation License	10/10/2019	/05-a/	
Amendment in License	30/06/2022	/05-b/	
<p>ACCs issued will be used to create additional revenue stream for the investment and for reducing the project financial risks and thus enabling the sustainability of the project.</p> <p>The project activity also voluntarily contributes to Environmental No-net-harm Label (E+), Social No-net-harm Label (S+) and 5 United Nations Sustainable Development Goals (SDG+).</p> <p>As per the PSF /1-b/, start date of the Project Activity is 25/10/2019 (commissioning date of first gas engine) /7/. The same is in accordance with requirements of §38 of Project Standard (version 03.1) /B01-1/.</p> <p>Crediting period is a fixed crediting period for the Project Activity, from 25/10/2019 to 24/10/2029 i.e., of 10 years. This is cross checked by PSF /1-b/ and conforms the requirement of §39 and §40 of Project Standard Version 03.1 /B01-1/.</p> <p>CC IPL is able to confirm that the description of the proposed Project Activity in the PSF is accurate and complete and it provides an understanding of the Project Activity.</p>			

D.3. Application and selection of methodologies and standardized baselines

D.3.1 Application of methodology and standardized baselines

Means of Verification	Project	Desk review, Interviews
Findings		CL02, CAR06 – CAR15, and CAR 24 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion		The CDM methodology applied is ACM0022 (version03.0) /B02/. It is applicable to Project activities which involves the installation and operation of new plants for the treatment of fresh waste through anaerobic digestion with biogas recovery and flaring and/or its use)

Project Verification Report

	The applied version of the baseline and monitoring methodology /B02/ is valid at the time of submission of the PSF for global stakeholder consultation and request for registration. All applicability criteria in the methodology are assessed in the below table:
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	Applicability criteria of the methodology (ACM0022, Version 03)	Justification in the PSF	GCC verifier assessment
	<p>The methodology applies to project activities that install and operate new plants for the treatment of fresh waste through any combination of the following processes:</p> <p>(a) Composting process under aerobic conditions;</p> <p>(b) Anaerobic digestion with biogas recovery and flaring and/or its use;</p> <p>(c) Co-composting of wastewater in combination with solid waste;</p> <p>(d) Anaerobic co-treatment of wastewater in combination with solid waste;</p> <p>(e) Mechanical/thermal treatment process to produce refuse-derived fuel (RDF) or stabilized biomass (SB) that is produced within the project boundary and its use¹ ;</p> <p>(f) Gasification process to produce syngas and its use;</p> <p>(g) Incineration of fresh waste for the generation of thermal/electric energy.</p> <p>(h) The following conditions apply to all project activities using this methodology:</p> <p>(i) The project plant only treats fresh waste/wastewater for which emission reductions are claimed, except for cases involving composting, co-composting and anaerobic digestion;</p> <p>(j) Neither the fresh waste nor the products from the project plant are stored on-site under anaerobic conditions;</p> <p>(k) Any wastewater discharge resulting from the project activity is treated in accordance with applicable regulations;</p> <p>(l) The project activity does not reduce the amount of waste that would be recycled in the absence of the project activity. This shall be justified</p>	<p>(b)The project activity involves anaerobic digestion with biogas recovery.</p> <p>(c) There is no Composting process under aerobic conditions in the project activity.</p> <p>(d) There is no Co-composting of wastewater in combination with solid waste in the project activity.</p> <p>(e) There is no Anaerobic co-treatment of wastewater in combination with solid waste in the project activity</p> <p>(f) There is no mechanical treatment to stabilize the biomass.</p> <p>(g)There is no gasification process in the project activity.</p> <p>(h)There is no incineration in the project activity.</p> <p>(i) The project plant only treats fresh waste/wastewater for which emission reductions are claimed</p> <p>(j) Wastes are collected in the new SWDS and the SWDS is covered with an impermeable cover daily.</p> <p>(k) Wastewater discharge is directly performed into the sewerage in accordance with applicable regulations. The characterization of the wastewater is submitted to the ministry regularly to indicate the compatibility to the standards.</p> <p>(l) The project activity does not reduce the amount of waste that</p>	<p>a. Based on the assessment of Generation license/05, commissioning certificate/06/, EIA report/07-b/, EIA approval report/07-a/ and agreement between PO and Van municipality/22/, GCC verifier confirms that the project activity is the anaerobic digestion with biogas recovery (options b) and no other activities mentioned in the applicability condition (Options a, c,d,e,f). is involved in the project activity</p> <p>b. Kindly refer to justification provided above</p> <p>c. Kindly refer to justification provided above</p> <p>d. Kindly refer to justification provided above</p> <p>e. Kindly refer to justification provided above</p> <p>f. Kindly refer to justification provided above</p> <p>i. Based on the on-site visit, interviews and assessment of EIA report/07-b/ and solid waste characterization report/20/, GCC verifier confirms that the project activity only treats fresh waste for the</p>

	<p>and documented in the clean development mechanism project design document (CDM-PDD);</p> <p>(m) When applicable regulations mandate any waste treatment process implemented under the project activity, the rate of compliance with such regulations for the treatment process is below 50 per cent² ;</p> <p>(n) Hazardous wastes/wastewater are not eligible under this methodology.</p>	<p>would be recycled in the absence of the project activity. In the project activity, the recyclable waste is separated from the organic portion.</p> <p>(m) There are no applicable laws or regulations that require the use of the waste treatment option implemented under the project activity.</p> <p>(n) Hazardous wastes are not involved in the process.</p> <p>Hence, The para 3 is met since the project activity covers at least one process of those above.</p>	<p>emission reductions are claimed. The project facility also captures LFG from the existing SWDS, however which is not claimed for emission reduction.</p> <p>j. Based on site visit, interviews and assessment of EIA report/07-b/, Solid Waste Characterization report/20/, GCC verifier confirms that the incoming fresh waste is fed into the anaerobic digester for the production of biogas, the liquid digestate is discharged to the sewerage and solid digestate is collected in new SWDS.</p> <p>k. Based on site visit, interviews and assessment of EIA report/07-b/, Solid Waste Characterization report/20/, GCC verifier confirms that the liquid digestate is discharged to the sewerage in conformance with applicable regulations</p> <p>l. Based on the on-site visit, interview and review od Solid waste characterization report/20/, GCC verifier confirms that the project activity does not reduce the amount of waste that would be recycled in the absence of the project activity. In</p>
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			<p>the project activity, the recyclable waste is separated from the organic portion.</p> <p>m. Based on onsite interviews, review of EIA report/07/ and solid waste characterization report/20/ and independent research, GCC verifier confirms that there are no applicable laws or regulations that require the use of the waste treatment option implemented under the project activity.</p> <p>n. Based on the assessment of Generation license/05, commissioning certificate/06/, EIA report/07-b/, EIA approval report/07-a/ and agreement between PO and Van municipality/22/, GCC verifier confirms that the project activity is the anaerobic digestion with biogas recovery. Hazardous waste/wastewater is not included in the project activity.</p>
	<p>The methodology is only applicable if the baseline scenario is: (a) The disposal of the fresh waste in a SWDS with or without a partial LFG capture system (M2 or M3) ; (b) In the case of co-composting or co-treatment of wastewater in an anaerobic digester, the treatment of organic</p>	<p>(a) The baseline scenario involves SDWS without an LFG captivity system. This condition is met.</p> <p>As per the rule in condition (a) , according to the EIA Report (Page 17), the total landfill area is 330,624 m². The approved waste amount</p>	<p>PO has provided the baseline scenario as M3 and P6 in the PSF/01-b/. The assessment of baseline scenario identification is provided in section D.3.5 of this report and the identified baseline scenario is</p>

	<p>wastewater in either an existing or new anaerobic lagoon or sludge pit without methane recovery (W1 or W4); (c) In the case of electricity generation, the electricity is generated in an existing/new captive fossil fuel fired power-only plant, captive cogeneration plant and/or the grid (P2, P4 or P6); (d) In the case of heat generation, the heat is generated in an existing/new fossil fuel fired cogeneration plant, boiler or air heater (H2 or H4). 4</p>	<p>that this capacity is able to receive is 8,741,879 tons. The lifetime of the capacity is for 28 years. Which makes the annual acceptance rate 0.94 tons/m².year However for the real case the received waste is calculated as 219,000 tons/year which makes 6,132,000 tons of waste in 28 years in a 362,000 m² area as per the Solid Waste Characterization Report. This makes the annual acceptance rate 0.60 tons/m². Hence, for the real case, the landfill capacity is enough for the MSW to be disposed.</p> <p>(b) There was no co-composting or co-wastewater treatment. This condition is N/A (c) In the baseline scenario there was no system that generates electricity, however the electricity generation would be met by fossil fuel based plant. This condition is met. (d) There is no heat generation. Hence this condition is N/A.</p>	<p>consistent with the applicability condition.</p>
	<p>Specific applicability conditions for the different processes are provided in Table 2</p>	<p>According to the Table 2, The project applies “Anaerobic Digestion” as a waste treatment option. The project uses “Fresh waste” as an applicable type of waste. The project uses biogas to generate electricity and supplies to the national grid. Hence, the project has an applicable product. Non-biodegradable materials are sent to the recycling market and the residual digestate (wastewater) is given to the sewerage. Hence the</p>	<p>PO has chosen the “Anaerobic digestion” as the waste treatment option under the project activity as per the table 2 of applied methodology. For this particular option, the applicability condition specified in Tool 14 has to be met. PO has provided the applicability condition and its justification in the</p>

		<p>project has applicable waste by-products. Tool14 is discussed below.</p> <p>The table 2 conditions are met.</p>	<p>PSF/01-b/. GCC verifier has provided the assessment of the same in this report and it has been found that all the applicability condition of Tool 14 has been met.</p>
	<p>Tool 02 Combined tool to identify the baseline scenario and demonstrate additionality</p>		
	<p>The tool is applicable to all types of proposed project activities. However, in some cases, methodologies referring to this tool may require adjustments or additional explanations as per the guidance in the respective methodologies. This could include, inter alia, a listing of relevant alternative scenarios that should be considered in Step 1, any relevant types of barriers other than those presented in this tool and guidance on how common practice should be established.</p>	<p>The tool is referred by the ACM0022 and methodology. Hence, it is applicable. No adjustments or additional explanations are required by the methodology.</p>	<p>GCC verifier confirms that tool 02 has been applied for identification of baseline and demonstration of additionality as mentioned in para 15 of applied methodology/B02/.</p>
	<p>TOOL 06: Project emissions from flaring</p>		
	<p>This tool provides procedures to calculate project emissions from flaring of a residual gas. The tool is applicable to enclosed or open flares and project participants should document in the CDM-PDD the type of flare used in the project activity.</p>	<p>The project has an open flare. Hence, the condition is met.</p>	<p>Project emissions from flaring of biogas which is included as one of the project emissions as per para 56 of methodology/B02/ has been calculated using tool 02. PO has provided technical details of flare unit in section A.3 of PSF.</p>
<p>This tool is applicable to the flaring of flammable greenhouse gases where: (a) Methane is the component with the highest concentration in the flammable residual gas; and (b) The source of the residual gas is coal mine methane or</p>	<p>(a) Methane is the flammable gas with highest concentration in the residual gas which has %55 methane according to the waste characterization report . This portion is defined as flammable according to</p>	<p>a. GCC verifier has reviewed the waste characterization report/20/ and confirms that methane has been identified as the component with highest</p>	

	<p>a gas from a biogenic source (e.g. biogas, landfill gas or wastewater treatment gas).</p>	<p>The CRC Handbook of Chemistry and Physics, Weast, 1978-1979 : “the limits of flammability of methane as 5% and 15% by volume in air at room temperature”. Hence this condition is met.</p> <p>(b)Residual gas is obtained from the decomposition of organic material in the digesters within project activity. Hence, the condition is met.</p>	<p>concentration among the residual gas.</p> <p>b. The project activity involves biomethanization of organic waste and therefore the source of residual gas can be considered as gas from biogenic source.</p>
	<p>The tool is not applicable to the use of auxiliary fuels and therefore the residual gas must have sufficient flammable gas present to sustain combustion. In the case of an enclosed flare, there shall be operating specifications provided by the manufacturer of the flare and these shall be followed by the project participant</p>	<p>The tool is not applicable to the use of auxiliary fuels and therefore the residual gas must have sufficient flammable gas present to sustain combustion. In the case of an enclosed flare, there shall be operating specifications provided by the manufacturer of the flare. Hence the condition is met</p>	<p>No auxiliary fuels are present. As per the waste characterisation report /20/, the residual gas is composed of methane which is a flammable gas. Thus, the applicable condition has been met.</p>
	<p>TOOL 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation</p>		
<p>If emissions are calculated for electricity consumption, the tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption:</p> <p>(a) Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer;</p> <p>(b) Scenario B: Electricity consumption from (an) off-</p>	<p>(a) Scenario A: The project consumes electricity from the grid. The electricity is purchased from the grid only, and no captive power plant(s) is/are installed at the site of electricity consumption para 5 Scenario A is applicable for this project. This condition is met.</p>	<p>GCC verifier confirms that the electricity produced is supplied to the national grid of Türkiye and the electricity is consumed from the same /05/, /06/. Therefore, Scenario A can be applied</p>	

	<p>grid fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants are installed at the site of the electricity consumer and supply the consumer with electricity. The captive power plant(s) is/are not connected to the electricity grid; or</p> <p>(c) Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants operate at the site of the electricity consumer. The captive power plant(s) can provide electricity to the electricity consumer. The captive power plant(s) is/are also connected to the electricity grid. Hence, the electricity consumer can be provided with electricity from the captive power plant(s) and the grid</p>		
	<p>This tool can be referred to in methodologies to provide procedures to monitor amount of electricity generated in the project scenario, only if one out of the following three project scenarios applies to the recipient of the electricity generated:</p> <p>(a) Scenario I: Electricity is supplied to the grid; (b) Scenario II: Electricity is supplied to consumers/electricity consuming facilities; or (c) Scenario III: Electricity is supplied to the grid and consumers/electricity consuming facilities.</p>	<p>The project supplies the energy to the grid hence, para 6, Scenario I is applicable</p>	<p>GCC verifier confirms that the electricity produced is supplied to the national grid of Türkiye /05/, /06/. Therefore, Scenario I can be applied</p>
	<p>This tool is not applicable in cases where captive renewable power generation technologies are installed to provide electricity in the project activity, in the</p>	<p>N/A. The project does not have a captive energy technology.</p>	<p>GCC verifier confirms that the electricity produced is supplied to the national grid of Türkiye /05/, /06/</p>

	<p>baseline scenario or to sources of leakage. The tool only accounts for CO₂ emissions.</p>		<p>and no captive renewable power generation technologies are installed. Therefore, the applicability condition has been met</p>
	<p>TOOL 07: Tool to calculate emission factor for an electricity system</p>		
	<p>This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).</p>	<p>This tool is applied to estimate OM, BM and CM factors. CM is adapted from datasheet provided by the “Ministry of Energy and Natural Sources “according to the procedures in the latest approved version of the “Tool to calculate the emission factor for an electricity system” (EFEL,j/k/l,y = EFgrid,CM,y). The project activity supplies electricity to a grid. Hence, this condition is met.</p>	<p>The parameters OM, BM, and CM are obtained from Ministry of energy and natural resources emission factor datasheet /32/ which is calculated using the latest version of CDM tool 07 (version 7.0). Therefore, the applicability condition has been met</p>
	<p>Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the</p>	<p>CO₂ emission factor for the displacement of electricity generated by power plants in an electricity system is determined by calculating the “combined margin” emission factor (CM) of the electricity system . Hence, this condition is met.</p>	<p>The combined emission factor of grid connected power plants are obtained from Ministry of energy and natural resources emission factor datasheet /32/. Therefore, the applicability condition has been met</p>

	reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.		
	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	The project electricity system is not located partially or totally in an Annex I country. Hence, this condition is N/A.	The project activity is located in Türkiye. Which is not an Annex-1 country. Therefore, the applicability condition has been met
	Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	The project does not involve biofuels in any way. Hence, this condition is N/A	The project activity involves utilisation of fresh MSW waste through methanogenesis of organic waste and production of electricity from the produced biogas. Therefore, does not involve biofuels. Thus, this condition is not applicable
	TOOL 14: Project and leakage emissions from anaerobic digesters		
	The following sources of project emissions are accounted for in this tool: (a) CO ₂ emissions from consumption of electricity associated with the operation of the anaerobic digester; (b) CO ₂ emissions from consumption of fossil fuels associated with the operation of the anaerobic digester; (c) CH ₄ emissions from the digester (emissions during maintenance of the digester, physical leaks through the roof and side walls, and release through safety valves due to excess pressure in the digester); and (d) CH ₄ emissions from flaring of biogas.	(a) Electricity will be used during the operation of digestion without the use of fossil fuels. Biogas generated during this process will be used for electricity generation and surplus biogas will be flared if there is any. Project activity meets (a) and (c)	As per the para 56 of applied methodology/B02/, Tool 14 has been used to determine CO ₂ emission from consumptions of electricity associated with operation of anaerobic digester, CH ₄ emission from the digester and CH ₄ emission from flaring of biogas.
The following sources of leakage emissions are accounted for in this tool: (a) CH ₄ and N ₂ O emission from composting of digestate; (b) CH ₄ emissions from the anaerobic decay of digestate	The leakage emissions associated with the digester not are excluded for simplification. This emission source is assumed to be very small. Hence (a) and (b) doesn't apply.	As per para 87 of applied methodology/B02/, Tool 14 has been used to determine Leakage emissions from anaerobic digester in year y	

	disposed in a SWDS or subjected to anaerobic storage, such as in a stabilization pond.		
	Emission sources associated with N ₂ O emissions from physical leakages from the digester, transportation of feed material and digestate or any other on-site transportation, piped distribution of the biogas, aerobic treatment of liquid digestate and land application of the digestate are neglected because these are minor emission sources or because they are accounted in the methodologies referring to this tool.	The project neglects emission sources associated with N ₂ O emissions from physical leakages from the digester, transportation of feed material and digestate or any other on-site transportation, piped distribution of the biogas, aerobic treatment of liquid digestate and land application of the digestate.	The project does not account for the N ₂ O emissions from physical leakage as it is neglected in the tool 14.
	TOOL 04: Emissions from solid waste disposal sites		
	The tool can be used to determine emissions for the following types of applications: (a) Application A: The CDM project activity mitigates methane emissions from a specific existing SWDS. Methane emissions are mitigated by capturing and flaring or combusting the methane (e.g. “ACM0001: Flaring or use of landfill gas”). The methane is generated from waste disposed in the past, including prior to the start of the CDM project activity. In these cases, the tool is only applied for an ex-ante estimation of emissions in the project design document (CDM-PDD). The emissions will then be monitored during the crediting period using the applicable approaches in the relevant methodologies (e.g. measuring the amount of methane captured from the SWDS); (b) Application B: The CDM project activity avoids or involves the disposal of waste at a SWDS. An	Project is applicable to Application B, since the project activity avoids the disposal of waste at a SWDS in which municipal solid waste (MSW) is treated with an alternative option, such as anaerobic digestion, and is then prevented from being disposed of in a SWDS. The methane is generated from waste disposed or avoided from disposal during the crediting period. . This condition is applicable for ACM0022 as per the article (b).	Project activity involves the installation and operation of new plants for the treatment of fresh waste through anaerobic digestion with biogas recovery and flaring and/or its use) which falls under the scope of applied methodology ACM0022 (version 3.0), therefore Application B of tool 04 is applied to the project.

	<p>example of this application of the tool is ACM0022, in which municipal solid waste (MSW) is treated with an alternative option, such as composting or anaerobic digestion, and is then prevented from being disposed of in a SWDS. The methane is generated from waste disposed or avoided from disposal during the crediting period. In these cases, the tool can be applied for both ex ante and ex post estimation of emissions. These project activities may apply the simplified approach detailed in 0 when calculating baseline emissions.</p>		
	<p>These two types of applications are referred to in the tool for determining parameters.</p>	<p>Both types of applications and related methodology are used to determine the parameters.</p>	<p>Application B has been applied and the parameters are determined accordingly as per PSF/01-b/</p>
	<p>In the case that: (a) different types of residual waste are disposed or prevented from disposal; or that (b) both MSW and residual waste(s) are prevented from disposal, then the tool should be applied separately to each residual waste and to the MSW.</p>	<p>5. There is no residual waste or MSW that the project activity disposes or prevents from disposal. The anaerobic digestate is sent back to the digesters and the liquid digestate is sent back to the digesters or directly discharged to the sewerage to be treated in the wastewater treatment plant of Van Municipality (VASKI: Van Water and Sewerage Administration) which is not included in the project boundary. Hence, there is no need for separate handling of baseline emission calculations.</p>	<p>GCC verifier through site visit and desk review confirms that no residual waste are disposed or prevented from disposal.</p>
	<p>TOOL 08: Tool to determine the mass flow of a greenhouse gas in a gaseous stream</p>		
	<p>Typical applications of this tool are methodologies where the flow and composition of residual or flared gases or exhaust gases are measured for the determination of baseline or project emissions.</p>	<p>The exhaust gas is measured and analyzed for a characterization. The exhaust gas has %55 methane according to the waste characterization report . Hence para 5 is</p>	<p>Tool 08 has been used for determining the project emission from flaring of biogas as per the methodology/B02/</p>

	Methodologies where CO ₂ is the particular and only gas of interest should continue to adopt material balances as the means of flow determination and may not adopt this tool as material balances are the cost effective way of monitoring flow of CO ₂ .	applicable for the project. CO ₂ is not a gas of interest in the project activity . This condition is N/A.	The baseline scenario is the methane emission to the atmosphere from an unmanaged SWDS and therefore CH ₄ is the gas of interest. Applied methodology does not provide calculation of baseline, project or leakage emission for CO ₂ .
	The underlying methodology should specify: (a) The gaseous stream the tool should be applied to; (b) For which greenhouse gases the mass flow should be determined; (c) In which time intervals the flow of the gaseous stream should be measured; and (d) Situations where the simplification offered for calculating the molecular mass of the gaseous stream (equations (3) or (17)) is not valid (such as the gaseous stream is predominantly composed of a gas other than N ₂).	(a) ACM0022 refers to the tool and specifies (a), (b), (c) and (d).	Applied methodology specified the following: a) Methane (as per para 31 of applied methodology/B 02/ b) Mass flow is calculated for hourly time interval ss per para 84 of applied methodology/B 02/ c) As per para 84 (d) of applied methodology, the simplification offered for calculating the molecular mass of the gaseous stream is valid
	TOOL 24: Common Practice		
	This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, or baseline and monitoring methodologies that use the	The Project applies “Tool02 – Combined tool to identify the baseline scenario and demonstrate additionality”. For this reason, this tool is applicable.	The applied methodology refers to tool 02 Combined tool to identify the baseline scenario and demonstrate additionality. Therefore, this applicability condition has been met.

	<p>common practice test for the demonstration of additionality.</p> <p>In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail</p>		
	TOOL 27: Investment analysis		
	<p>This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, or baseline and monitoring methodologies that use the common practice test for the demonstration of additionality.</p> <p>In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.</p>	<p>The Project applies “Tool02 – Combined tool to identify the baseline scenario and demonstrate additionality”. For this reason, this tool is applicable.</p>	<p>The applied methodology refers to tool 02 Combined tool to identify the baseline scenario and demonstrate additionality. Therefore, this applicability condition has been met.</p>

D.3.2 Clarification on applicability of methodology, tool and/or standardized baseline

Means of Project Verification	Desk review, Interviews
Findings	No findings
Conclusion	Not applicable

D.3.3 Project boundary, sources and GHGs

Means of Project Verification	Desk review, Interviews
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Findings	CAR16, CAR17 has been raised. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion	<p>As per para 28 of applied methodology ACM0022 (version 3.0) /B02/, the spatial extend of project boundary is SWDS where the waste is disposed of in the baseline and the site of alternate waste treatment process and the power plants connected to the energy systems to which the project plant is connected to.</p> <p>In section B.3 of the PSF /1-b/, project boundary has been adequately defined which This is in line with the applied methodology, ACM0022 (version 3.0).</p>

D.3.4 Baseline scenario

Means of Project Verification	Desk review, Interviews
Findings	CL03, CAR18, and CAR 25 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion	<p>The procedure to identify the most plausible baseline scenario derived from the applied methodology has been applied in the PSF /1-b/.</p> <p>Project Owner has applied the Combined Too to identify baseline scenario and demonstrate additionality (version 07). The alternatives selected for the identification of baseline scenarios are referred from para 16 and 18 of applied methodology ACM0022 version 3.0.</p> <p>As per the section B.4 and B.5 of PSF/01-b/, the baseline scenario identified are. M3. Disposal of the fresh waste in a SWDS without a LFG capture system, and P6: Electricity generation in existing and/or new grid-connected electricity plants.</p> <p>Please refer section D.3.5 below for the step wise approach for the identification of the baseline scenario in line with the applied methodology</p>

D.3.5 Demonstration of additionality

Means of Project Verification	Desk review, Interviews
Findings	CL07, CL08, CAR19, CAR26, CAR27, CAR28 and CAR29 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion	<p>The additionality has been demonstrated in the PSF as per the GCC project standard (version 3.1) and methodology ACM0022 (version 3.0).</p> <p>As per GCC project standard version 3.0, the GCC applies the following approach for demonstrating additionality, consisting of two components:</p> <p>a) Legal Requirement tests</p> <p>Through site visit, interviews, desk review and independent research, GCC verifier confirms that the project activity passes all legal requirements tests since there are no enforced law, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions of other legally binding mandates requiring its implementation.</p> <p>b) An Additionality Test either based on a Positive List test or a projects-specific additionality test.</p>

	<p>Additionality has been demonstrated in compliance with the applied methodology requirement using CDM tool 02 “combined tool to identify the baseline scenario and demonstrate additionality version 7.0//B04-1/.</p> <p>The following steps are used for the identification of baseline scenario and demonstration of additionality.</p> <p>Step 1. Identification of alternative scenarios</p> <p>Step 1a: Define alternative scenarios to the proposed CDM project activity</p> <p>PO has provided the list of alternatives in section B.4 of the PSF of which four alternatives are identified, which are:</p> <p>M1: The project activity without being registered as a CDM project activity (i.e. any (combination) of the waste treatment processes listed in Table 2); M3: Disposal of the fresh waste in a SWDS without a LFG capture system;</p> <p>P1: Electricity generated as an output of one of the waste treatment processes listed in Table 1, not undertaken as a CDM project activity; P6: Electricity generation in existing and/or new grid-connected electricity plants.</p> <p><u>Outcome of step 1a:</u> Considering the nature of the project activity, GCC verifier confirms that all the above mentioned 4 alternatives are applicable among all the available alternatives. Considering the nature of the project activities, other alternatives provided can be excluded.</p> <p>Step 1b: Consistency with mandatory laws and regulation</p> <p>The following applicable mandatory laws and regulations have been identified:</p> <ol style="list-style-type: none">1. Electricity Market Law⁶2. Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy⁷3. Energy Efficiency Law ⁸4. Forest Law⁹5. Environment Law¹⁰6. Regulation on prevention of pollution from Industrial Facilities¹¹7. Regulation on Waste Management¹² <p><u>Outcome of step 1b</u></p>
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⁶ Law number 6446, Published in official gazette No. 28603 on 30/03/2013
<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.6446.pdf>

⁷ Law number 5346, Published in official gazette No. 25819 on 18/05/2005
<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf>

⁸ Law number 5627, Published in official gazette No. 26510 on 02/05/2007
<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.5627.pdf>

⁹ Law number 6831, Published in official gazette No. 9402 on 08/09/1956
<http://www.mevzuat.gov.tr/MevzuatMetin/1.3.6831.pdf>

¹⁰ Law number 2872. Published in official gazette No. 18132 on 11/08/1983
<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.2872.pdf>

¹¹ <http://www.osbuk.org.tr/doc/gen13.doc>

¹² https://ambalaj.org.tr/files/es/mevzuat/cev_atikyon_genesas.pdf

GCC verifier, through interviews, desk review, independent research confirms that the identified alternatives to the project as outlined in Step (1a) are following the applicable laws and regulations.

PO has provided a combination of these alternatives which can be applied in conjunction with each other to determine the plausible baseline scenario in the PSF, which are,

	P1	P6
M1	Alternative Combination I: Appropriate Implement the project without GCC assistance.	Not applicable: If electricity is imported from the grid, there is no need for proposed project activity.
M3	Not applicable: If waste is disposed of in a landfill site without capturing landfill gas, it is not suitable for power generation.	Alternative combination II: If applicable, it conforms to the practice prior to this Project activity. No use of MSW; purchase of grid-equivalent electricity.

The combination of Alternative Combination I (M1 and P1: the project activity not implemented as a GCC project) is economically undesirable, with the project IRR falling below the benchmark, as stated in paragraph below (Step 2 investment analysis). Alternative combination II (M3 and P6: disposal of fresh waste in a landfill site without capturing LFG and electricity generation by existing and/or new power plants connected to the national grid) is the most feasible baseline scenario.

Step 2 - Investment analysis

Benchmark analysis has been considered as the appropriate analysis method. Which is in compliance with para 24 of Tool 02 version 7.0.

Post tax equity IRR has been chosen as the financial indicator, which is in compliance with para 22 of tool 02 version 07.0. The post tax equity IRR benchmark value of 20% determined by World bank for similar projects has been used for the benchmark analysis. IRR benchmark calculation is performed in Private Sector Renewable Energy and Energy Efficiency Project- World Bank Clean Technology Fund Türkiye, incorporated experiences in Bank operations in Türkiye, from the preceding Türkiye Renewable Energy Project, and experience with Energy efficiency investments in other countries, therefore the appropriateness of applied benchmark is in compliance with para 15 of tool 27 version 11.0.

The following inputs has been considered for the investment analysis of project.

Parameters	Unit	Data Value (Biogas)	Source
Installed Capacity	MWe	3.94	Calculated proportionately from the share of gas generated from anaerobic digester sourced from Table 97-98

				of EIA report /07/ and considering total capacity from Generation License /05-b/.
	Gross Output	MWh	30,604	Calculated proportionately from the share of gas generated from anaerobic digester sourced from Table 97-98 of EIA report /07/ and considering total capacity from Generation License /05-b/.
	Capital Investment (Ex. VAT)	Million \$	10.511	<p>The capital investment value is calculated by multiplying the share of installed capacity of Biogas plant to the Investment cost of Digester.</p> <p>The share of biogas plant installed capacity is derived from cumulative gas production data sourced from table 97-98 of EIA report /07/. The total installed capacity of the plant is also sourced from generation license /05-b/.</p> <p>The initial Generation License /05-a/ received by PO is for 9 Gas engines, which corresponds to 12.726 Mwe capacity and 89.081 GWh expected generation.</p>

				<p>However, Türkiye Energy Regulatory Authority issued and amendment to the existing license /05-b/ on 30/06/2022 and revise the installed capacity to 5.656 MWe.</p> <p>PO has considered the latest installed capacity to calculate the share of bio gas capacity and capital investment.</p> <p>GCC verifier has cross checked the IRR with values available in both generation licenses. It is observed that IRR with initial generation licence is 16.44%, however, with amended generation licence IRR is 18.20%, which is the conservative approach and hence, consideration of amended generation licence is appropriate.</p>
	Expected ACCs price	\$/ tons CO ₂ e	3	Unlocking Potential State of the Voluntary Carbon Markets” Report 2017/26/
	Operation Maintenance Cost	1000\$/Year	968	IRENA Study, Page 6 , para 2 /25/. PO has also referred paragraph 2 (page 6) for Fixed and

			Variable OM costs (average value used for fixed OM and 0.005 USD/kWh) used for variable OM/25/
Feed in Tariff for the first 10 years	\$ Cents/kWh	13.3	EPDK YEKDEM Values/27/
Corporate tax	%	23	Ratios of Revenue Administration /28/
Transmission loss factor	%	2.7	TEİAŞ Statistics/29/
Share of Municipality	%	6	The agreement protocol between municipality and PO/22/

PO has chosen 07/12/2018 as the date of investment decision as per the letter of commitment submitted to municipality/24/. GCC verifier has cross checked the above-mentioned data with the provided document/24/ and confirm the validity of the provided date. GCC verifier confirms that all the source of input values used in the IRR calculation were available on or before the date of investment decision therefore complying with para 10 of Tool 27 version 11/B04/. The input values provided in the PSF/01-b/ and IRR sheet/03-b/ has been cross checked with its respective sources/07/22/25/26/27/28/29/ and is found to be consistent and valid.

For the project activity, post-tax equity IRR has been calculated as 18.20% without the benefit of carbon revenue. The IRR value provided in the PSF/01-b/ has been cross checked with the IRR sheet/03-b/ and is found to be consistent.

Sensitivity analysis

Sensitivity analysis has been carried out for three main parameters identified as required by the para 32 of tool 02 version 07.0 and para 27 of tool 27 (version 11.0)

- Investment Costs
- Operational Costs
- Annual Generation

For a range of ±15% fluctuations in parameters; investment costs, operational costs and annual generation, table below is obtained.

%Fluctuation	-15%	-10%	-5%	0	+5%	+10%	+15%
Investment Cost	22.22	20.71	19.38	18.20%	17.13	16.18	15.32
Operating Cost	19.38	18.99	18.59	18.20%	17.80	17.40	17.00
Electricity Income	13.48	15.08	16.65	18.20%	19.71	21.20	22.67

It can be observed that the calculated IRR breaches the benchmark with a +10% increase in electricity income and -10% reduction in the investment cost. The price

	<p>of electricity tariff is fixed by the law as per article 6 of Law on the use of renewable energy sources for electric energy production purpose, Türkiye/30/. The study on the hyperinflation data provided by PO in the PSF/31/ also suggests that the reduction in the investment is also not a likely scenario.</p> <p>Based on the above assessment, GCC verifier concludes that project is not an attractive investment option without the benefit of ACCs revenue.</p> <p>Step 3: Barrier Analysis</p> <p>Not applicable</p> <p>Step 4: Common practice analysis</p> <p>As per Tool 02 version 7.0, Common practice analysed has been performed using Tool 24; Common practice version 3.1.</p> <p>The following steps has been used to assess common practice as provided in the PSF/01-b/</p> <p>Step 1: Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity:</p> <p>The total capacity of the proposed project is 5.656 MWe. Therefore, the applicable output range is from 2.828 MWe to 8.484 MWe.</p> <p>PO has considered the applicable capacity range between 2.828 MWe and 8.484 MWe. This is in line with the requirement of Step 1 of Tool 24 version 3.1 applied for the project activity.</p> <p>Step 2: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:</p> <p style="padding-left: 40px;">(a) The projects are in the applicable geographical area:</p> <p>PO has selected applicable geographical area as the whole host country (Türkiye). This is as per the requirement of paragraph 9 of Tool 24 version 03.1.</p> <p style="padding-left: 40px;">(b) The projects apply the same measure as the proposed project activity.</p> <p>PO has selected the projects with same measures i.e. power generation based on renewable energy within the applicable geographical area as per the requirement of paragraph 10(b) of the Tool 24 version 3.1.</p> <p>However, PO has excluded the RE plants built and operated by The Electricity Generation Corporation (EÜAŞ) which is a governmental affiliate company as per the paragraph 12(e) of the Tool 24 version 3.1.</p> <p style="padding-left: 40px;">(c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity:</p> <p>PO has considered projects which have the same fuel source (biogas) .</p> <p style="padding-left: 40px;">(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties, and applications areas (e.g. clinker) as the proposed project plant:</p>
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	<p>PO has selected projects which produce goods or services with comparable quality, properties application area i.e. electricity produced by RE technology and feed to the grid.</p> <p>(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1:</p> <p>the output range selected to perform common practice is from 2.828 MWe to 8.484 MWe. This is in-line with the output range calculated in Step 1.</p> <p>(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity:</p> <p>The project activity received the provisional acceptance to feed electricity into the grid on 25/10/2019 and the project got listed for GSC on the GCC portal on 05/01/2022. PO has considered 25/10/2019 as the start date of the project activity which is in-line with the definition of start date as per GCC project standard and satisfies the requirement of paragraph (f) under step 2 of Tool24 version 3.1.</p> <p>There are 47 projects identified which can be shortlisted after the completion of step 2 which is provided in the common practice analysis sheet/04/. The data in the common practice analysis sheet has been published by Republic of Türkiye Energy market Regulatory Authority and the latest data has been used and therefore can be considered appropriate and valid.</p> <p>Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}.</p> <p>Characteristics of the power plants are also indicated in the Common Practice excel sheet.</p> <p>After excluding the registered projects, there exist 13 renewable energy power plants being operated in Türkiye, at the time of project start date. GCC verifier has cross checked the different GHG programs and confirms that out of 47 identified projects under step 2, 34 are either registered project activities or project activities submitted for registration.</p> <p>Therefore, consideration of $N_{all} = 13$ by PO is appropriate.</p> <p>Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}.</p> <p>The projects which have different kind of technology, that burns the biomass to get energy and do not generate biogas such as Panda Van Biogas Project by using animal manure were chosen to be different technology. Among 13 projects identified under step 3, Only one project applies similar technology (Landfill gas). PO has excluded the one project from the total projects identified in step 3 and the number of projects that applies different technology than the project activity is 12.</p> <p>Therefore, consideration of $N_{diff} = 12$ by PO is appropriate.</p>
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	<p>Step 5: calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.</p> <p>With the above outcome PO has calculated the factor $F=1-N_{diff}/N_{all}$ as per the requirement of step 5 and arrived at the value of 0.08 as shown below</p> $F = 1-(12/13) = 0.08$ <p>PO has also calculated the difference between N_{all} and N_{dif} and arrived at the value of 1 ($N_{all} - N_{diff} = 13-12= 1$).</p> <p>GCC verifier based on the review of the Common practice analysis sheet/04/, confirms that all the data selection and calculation given above are provided as per the tool 24 version 3.1.</p> <p>According to the paragraph 18 of common practice tool i.e. Tool 24 version 3.1 the project activity will be a common practice if the factor F is greater than 0.2 and $N_{all} - N_{diff}$ is greater than 3.</p> <p>Since, the value of F is 0.08 and $N_{all} - N_{diff} = 1$, therefore, GCC verifier confirms that the project activity satisfies the requirement of paragraph 18 of Tool 24 version 3.1 and not a common practice with the applicable geographical area and can be considered as additional.</p>
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D.3.6 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	Desk review, Interviews
Findings	CL06, CAR03, CAR20, CAR31, and CAR32 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.
Conclusion	<p>The equations and choices provided in the applied methodology, ACM0022, Version 3.0 /B02/ are correctly quoted in the PSF /1-b/. The emission reductions of the Project Activity would be calculated using the formulae mentioned in the applied methodology ACM00022 v.3.0/B02/.</p> <p>As per the applied methodology, the following emissions are quantified and provided in the PSF.</p> <p>Baseline emissions As per the equation 1 of applied methodology, the baseline emission is calculated as</p> $BE_y = \sum (BE_{CH4,t,y} + BE_{WW,t,y} + BE_{EN,t,y} + BE_{NG,t,y}) \times (1 - RATE_{compliance,t})$ <p>Where:</p> <p>BE_y = Baseline emissions in year y (t CO₂e)</p> <p>$BE_{CH4,t,y}$ = Baseline emissions of methane from the SWDS in year y (t CO₂e)</p> <p>$BE_{WW,t,y}$ = Baseline methane emissions from anaerobic treatment of the wastewater in open anaerobic lagoons or of sludge in sludge pits in the absence of the project activity in year y (t CO₂e)</p> <p>$BE_{EN,t,y}$ = Baseline emissions associated with energy generation in year y (t CO₂)</p> <p>$BE_{NG,t,y}$ = Baseline emissions associated with natural gas use in year y (t CO₂)</p>

	<p>$RATE_{compliance,t}$ = Discount factor to account for the rate of compliance of a regulatory requirement that mandates the use of alternative waste treatment process t t = Type of alternative waste treatment process</p> <p>Under the scope of the project activity, only $BE_{CH4,y}$ and $BE_{EN,y}$ is accounted for baseline emissions.</p> <p>Baseline emission of methane from SWDS ($BE_{CH4,t,y}$): Calculated using equation 1 of methodological Tool 04 (version 08.1).</p> $BE_{CH4,SWDS,y} = \varphi_y \times (1 - f_y) \times GWP_{CH4} \times (1 - OX) \times 1612 \times F \times DOC_{f,y} \times MCF_y \times \sum (W_{j,x} \times DOC_j \times e^{-kj} \times (y-x) \times (1 - e^{-kj}))$ <p>X = Years in the time period in which waste is disposed at the SWDS, extending from the first year in the time period ($x = 1$) to year y ($x = y$) Y = Year of the crediting period for which methane emissions are calculated (y is a consecutive period of 12 months) $DOC_{f,y}$ = Fraction of degradable organic carbon (DOC) that decomposes under the specific conditions occurring in the SWDS for year y (weight fraction): $W_{j,x}$ = Amount of solid waste type j disposed or prevented from disposal in the SWDS in the year x (t) φ_y = Model correction factor to account for model uncertainties for year y f_y = Fraction of methane captured at the SWDS and flared, combusted or used in another manner that prevents the emissions of methane to the atmosphere in year y GWP_{CH4} = Global Warming Potential of methane 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) MCF_y = Methane correction factor for year y DOC_j = Fraction of degradable organic carbon in the waste type j (weight fraction) K = Decay rate for the waste type j (1 / yr) J = Type of residual waste or types of waste in the MSW</p> $W_{j,x} = W_x \times p_{j,x}$ <p>Where: W_j = Amount of solid waste type j disposed or prevented from disposal in the SWDS in the year x (t) W_x = Total amount of solid waste disposed or prevented from disposal in the SWDS in year x (t) p_j = Average fraction of the waste type j in the waste in year x (weight fraction) j = Types of solid waste x = Years in the time period for which waste is disposed at the SWDS, extending from the first year in the time period ($x = 1$) to year y ($x = y$)</p> <p>Baseline emission from generation of electricity ($BE_{EC,y}$): Equation 13 of applied methodology has been used.</p> $BE_{EN,y} = BE_{EC,y} + BE_{HG,y}$ <p>Where: $BE_{EN,y}$ = Baseline emissions associated with energy generation in year y (t CO₂) $BE_{EC,y}$ = Baseline emissions associated with electricity generation in year y (t CO₂)</p>
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	<p>$BEHG,y$ = Baseline emissions associated with heat generation in year y (t CO₂)</p> <p>Heat generation is not included in the project activity, therefore,</p> <p>$BEEN,y=BEEC,y$</p> <p>Baseline emissions associated with energy generation in year y (t CO₂) is calculated using methodological Tool 05:</p> <p>$BE_{EG} = EG_{BL,y} * EF_{CO_2,grid,y}$</p> <p>$BE_{EG}$= Baseline emissions associated with electricity generation in year y (t CO₂) $EG_{BL,y}$= Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh) $EF_{CO_2,grid,y}$= CO₂ emission factor of the grid in year y (t CO₂/MWh)</p> <p>Project emissions</p> <p>Project emission is calculated using equation 17 of applied methodology:</p> <p>$PEy=PECOMP,y+PEAD,y+PEGAS,y+PERDF_SB,y+PEINC,y$</p> <p>Where: PEy = Project emissions in year y (t CO₂e) $PECOMP,y$ = Project emissions from composting or co-composting in year y (t CO₂e) $PEAD,y$ = Project emissions from anaerobic digestion and biogas combustion in year y (t CO₂e) $PEGAS,y$ = Project emissions from gasification in year y (t CO₂e) $PERDF_SB,y$ = Project emissions associated with RDF/SB in year y (t CO₂e) $PEINC,y$ = Project emissions from incineration in year y (t CO₂e)</p> <p>Only project emission from anaerobic digestion and biogas combustion is included under the scope of project activity, therefore.</p> <p>$PEy = PEAD,y$</p> <p>Project emission from anaerobic digestion and biogas combustion (PE_{AD,y}): Calculated using equation 1 of methodological tool 14 version (2.0):</p> <p>$PEAD,y=PEEC,y+PEFC,y+PECH_4,y+PEflare,y$</p> <p>Where: $PEAD,y$ = Project emissions associated with the anaerobic digester in year y (t CO₂e) $PEEC,y$ = Project emissions from electricity consumption associated with the anaerobic digester in year y (t CO₂e) $PEFC,y$ = Project emissions from fossil fuel consumption associated with the anaerobic digester in year y (t CO₂e) $PECH_4,y$ = Project emissions of methane from the anaerobic digester in year y (t CO₂e) $PEflare,y$ = Project emissions from flaring of biogas in year y (t CO₂e)</p> <p>$PEFC,y$ is not included under the scope of project activity, therefore not accounted in the project emission.</p>
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	<p>Project emissions of methane from the anaerobic digester (t CO₂e): Calculated using equation 4 of methodological tool 14 (version 2.0)</p> $PECH_{4,y} = QCH_{4,y} \times EFCH_{4,default} \times GWPC_{H_4}$ <p><i>PECH_{4,y}</i> = Project emissions of methane from the anaerobic digester in year y (t CO₂e) <i>QCH_{4,y}</i> = Quantity of methane produced in the anaerobic digester in year y (t CH₄) <i>EFCH_{4,default}</i> = Default emission factor for the fraction of CH₄ produced that leaks from the anaerobic digester (fraction) <i>GWPC_{H₄}</i> = Global warming potential of CH₄ (t CO₂ / t CH₄)</p> <p>The parameter QCH_{4,y} is calculated using Tool 08 version 3.0 (calculation procedure provided at the end of this section)</p> <p>Project emissions from flaring of biogas: Calculated using equation 15 of methodological tool 06 (version 04.0):</p> $PEflare,y = GWPC_{H_4} \times \sum FCH_{4,RG,m} \times (1 - \eta flare,m) \times 10^{-3}$ <p>Where: <i>PEflare,y</i> = Project emissions from flaring of the residual gas in year y (t CO₂e) <i>GWPC_{H₄}</i> = Global warming potential of methane valid for the commitment period (t CO₂e/tCH₄) <i>FCH_{4,RG,m}</i> = Mass flow of methane in the residual gas in the minute m (kg) <i>η flare,m</i> = Flare efficiency in the minute m</p> <p>Mass flow of methane in the residual gas in the minute m is calculated using methodological tool 08 version 3.0 (calculation procedure provided at the end of this section):</p> <p>Project emissions from electricity consumption associated with the anaerobic digester: Calculated using equation 1 of methodological tool 05 (version 3.0):</p> $PEEC,y = \sum ECP_{j,y} \times EFEF_{j,y} \times (1 + TDL_{j,y})$ <p>Where: <i>PEEC,y</i> = Project emissions from electricity consumption in year y (t CO₂ / yr) <i>ECP_{j,y}</i> = Quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr) <i>EFEF_{j,y}</i> = Emission factor for electricity generation for source j in year y (t CO₂/MWh) <i>TDL_{j,y}</i> = Average technical transmission and distribution losses for providing electricity to source j in year y</p> <p>Leakage emission</p> <p>Leakage emission is calculated using equation 32 of Applied methodology:</p> $LEy = LECOMP,y + LEAD,y + LERDF_SB,y$ <p>Where: <i>LEy</i> = Leakage emissions in the year y (t CO₂e)</p>
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	<p> $LECOMP,y$ = Leakage emissions from composting or co-composting in year y (t CO₂e) $LEAD,y$ = Leakage emissions from anaerobic digester in year y (t CO₂e) $LERDF_SB,y$ = Leakage emissions associated with RDF/SB in year y (t CO₂e) </p> <p> Leakage emissions from composting or co-composting, and Leakage emissions associated with RDF/ is not included under the scope of the project activity, therefore not accounted. </p> <p> Therefore, $LE_y = LE_{AD,y}$, calculated using equation 5 of methodological tool 14 (version 02.0): </p> $LEAD,y = LEstorage,y + LComp,y$ <p> Where, </p> <p> $LEAD,y$ = Leakage emissions associated with the anaerobic digester in year y (t CO₂e) $LEstorage,y$ = Leakage emissions associated with storage of digestate in year y (t CO₂e) $LComp,y$ = Leakage emissions associated with composting digestate in year y (t CO₂e) </p> <p> Leakage emissions associated with composting is not involved under the scope of this project activity, therefore is not accounted. Therefore, </p> $LEAD,y = LEstorage,y$ <p> Leakage emissions associated with storage of digestate </p> <p> The procedure for determining $LEstorage,y$ is distinguished for liquid digestate and solid digestate. </p> <p> $LEstorage,y$ for liquid digestate is calculated using equation 7 of methodological tool 14 (version 02.0): </p> $LEstorage,y = F_{ww,CH4,default} \times Q_{CH4,y} \times GW_{PCH4}$ <p> Where: $F_{ww,CH4,default}$ = Default factor representing the remaining methane production capacity of liquid digestate (fraction) $Q_{CH4,y}$ = Quantity of methane produced in the digester in year y (t CH₄) GW_{PCH4} = Global warming potential of CH₄ (t CO₂/ t CH₄) and </p> <p> $LEstorage,y$ for solid digestate is calculated using equation 8 of methodological tool 14 (version 02.0): </p> $LEstorage,y = F_{SD,CH4,default} \times Q_{CH4,y} \times GW_{PCH4}$ <p> Where: $LEstorage,y$ = Leakage emissions associated with storage of digestate in year y (t CO₂e) $F_{SD,CH4,default}$ = Default factor for the methane generation capacity of solid digestate (fraction) $Q_{CH4,y}$ = Quantity of methane produced in the anaerobic digester in year y (t CH₄) </p>
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	<p>GWP_{CH_4} = Global warming potential of CH₄ (t CO₂/t CH₄)</p> <p><u>Determination of mass flow of greenhouse gases</u></p> <p>The parameters QCH_{4,y} (quantification of methane produced in the anaerobic digester in the year y) which is used for the calculation of project emission of methane from anaerobic digester and leakage emission associated with storage of digestate, and $F_{CH_4, RG, m}$ (Mass flow of methane in the residual gas in the minute m) which is used for the calculation of project emission from flaring of biogas are determined using equation 5 of tool 08 version 03.0. Option A provided in the tool 08 for determination of mass flow of greenhouse gases is used. In order to apply this option, temperature of gaseous stream should be less than 60° at flow measurement point (para 23 of tool 08 version 3.0). PO has provided the provision for the monitoring of parameter $T_{t, AD}$ in section B.7.1 of PSF to demonstrate that the temperature will remain below the required limit.</p> <p>Calculation of mass flow of greenhouse gases as provided in equation 5 of tool 08 version 3.0 is given below.</p> $F_{i,t} = V_{t,db} \times v_{i,t,db} \times \rho_{i,t}$ <p>Where</p> $P_{i,t} = (P_t \times MM_i) / (R_u \times T_t)$ <p>$F_{i,t}$ = Mass flow of greenhouse gas i in the gaseous stream in time interval t (kg gas/h) $V_{t,db}$ = Volumetric flow of the gaseous stream in time interval t on a dry basis (m³ dry gas/h) $v_{i,t,db}$ = Volumetric fraction of greenhouse gas i in the gaseous stream in a time interval t on a dry basis (m³ gas i/m³ dry gas) $\rho_{i,t}$ = Density of greenhouse gas i in the gaseous stream in time interval t (kg gas i/m³ gas i) P_t = Absolute pressure of the gaseous stream in time interval t (Pa) MM_i = Molecular mass of greenhouse gas i (kg/kmol) R_u = Universal ideal gases constant (Pa.m³/kmol.K) T_t = Temperature of the gaseous stream in time interval t (K)</p> <p><u>Emission reduction is calculated as</u></p> $ER_y = BE_y - PE_y - LE_y$ <table border="1"> <thead> <tr> <th>Year</th> <th>Baseline emissions (t CO₂e)</th> <th>Project emissions (t CO₂e)</th> <th>Leakage emissions (t CO₂e)</th> <th>Emission reductions (t CO₂e)</th> </tr> </thead> <tbody> <tr> <td>25/10/2019-31/12/2019</td> <td>24,336</td> <td>741</td> <td>7,466</td> <td>16,129</td> </tr> <tr> <td>2020</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2021</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2022</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2023</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2024</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2025</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2026</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2027</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> <tr> <td>2028</td> <td>130,626</td> <td>3,977</td> <td>40,073</td> <td>86,576</td> </tr> </tbody> </table>	Year	Baseline emissions (t CO ₂ e)	Project emissions (t CO ₂ e)	Leakage emissions (t CO ₂ e)	Emission reductions (t CO ₂ e)	25/10/2019-31/12/2019	24,336	741	7,466	16,129	2020	130,626	3,977	40,073	86,576	2021	130,626	3,977	40,073	86,576	2022	130,626	3,977	40,073	86,576	2023	130,626	3,977	40,073	86,576	2024	130,626	3,977	40,073	86,576	2025	130,626	3,977	40,073	86,576	2026	130,626	3,977	40,073	86,576	2027	130,626	3,977	40,073	86,576	2028	130,626	3,977	40,073	86,576
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01/01/2029 - 24/10/2029	106,290	3,236	32,607	70,447
Total	1,306,260	39,771	400,726	865,763
Annual average over the crediting period	130,626	3,977	40,073	86,576

The parameters and equations presented in the PSF /1-b/ and ER spread-sheet /2-b/ have been compared with the information and requirements presented in the methodology /B02/. Project verification team based on the review of PSF /1-b/ and the ER spread sheet /2-b/ and other supporting documents, confirms that the formula are correctly presented for the determination of emission reductions and the values of the input parameters used are accurate, appropriate and consistent

D.3.7 Monitoring plan

Means of Project Verification	Desk review, Interviews															
Findings	CL05, CL09, CAR21, CAR30, CAR33, CAR34, CAR35, and CAR36 was raised and closed successfully. Please refer to Appendix 4 of this report for detailed assessment of findings.															
Conclusion	<p>Data and parameters fixed ex-ante: Ex-ante parameters provided under section B.6.2 of the PSF /1-b/ are found to be appropriate and in line with the applied methodology ACM0022 v.3.0 /B02/. Ex-ante parameters of the project activity would be as follows:</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Description</th> <th>Verified Value</th> <th>Verified Source</th> </tr> </thead> <tbody> <tr> <td>GWP_CH₄</td> <td>Global warming potential of CH₄</td> <td>28 tCO_{2e}/tCH₄</td> <td>The parameter is used for the quantification of baseline, project and leakage emissions. The value of the parameter is referred in tool 14, tool04 and tool 08. GCC verifier confirms that the value provided is consistent with its source.</td> </tr> <tr> <td>EF_{CO₂,grid,y}</td> <td>CO₂ emission factor of the fossil fuel type used for electricity generation by equipment type</td> <td>0.5552 t CO₂/MWh</td> <td>Türkiye Emission factor datasheet published by Ministry of Energy and natural Resources/32/. Prepared based</td> </tr> </tbody> </table>				Parameter	Description	Verified Value	Verified Source	GWP_CH ₄	Global warming potential of CH ₄	28 tCO _{2e} /tCH ₄	The parameter is used for the quantification of baseline, project and leakage emissions. The value of the parameter is referred in tool 14, tool04 and tool 08. GCC verifier confirms that the value provided is consistent with its source.	EF _{CO₂,grid,y}	CO ₂ emission factor of the fossil fuel type used for electricity generation by equipment type	0.5552 t CO ₂ /MWh	Türkiye Emission factor datasheet published by Ministry of Energy and natural Resources/32/. Prepared based
Parameter	Description	Verified Value	Verified Source													
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EF _{CO₂,grid,y}	CO ₂ emission factor of the fossil fuel type used for electricity generation by equipment type	0.5552 t CO ₂ /MWh	Türkiye Emission factor datasheet published by Ministry of Energy and natural Resources/32/. Prepared based													

		k in the absence of the project activity		on latest CDM tool 07 version 7.0. The parameter is used for the quantification of baseline emission from electricity. GCC verifier confirms that the value provided is source/32/ is consistent with PSF/01-b/ and ER sheet/02-b/.
	EF _{CH4,default}	Default emission factor for the fraction of CH ₄ produced that leaks from the anaerobic digester	0.028: Digesters with steel or lined concrete or fiberglass digesters and a gas holding system (egg shaped digesters) and monolithic construction	The parameter is used for the calculation of project emissions of methane from biodigester. The value of the parameter provided in its source, Tool 14 version 02.0 is found to be consistent with the PSF/01-b/ and ER sheet/02-b/.
	OX	Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste)	0.1	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.
	Ru	Universal ideal gas constant	8,314 Pa.m ³ /kmol.K	The parameter is used for determining the mass flow of a greenhouse gas in

				a gaseous stream. The value of the parameter provided in its source, tool 08 version 03.0 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.
	MM _{CH4}	Molecular mass of greenhouse gas (CH ₄)	16.04 kg/kmol	The parameter is used for determining the mass flow of a greenhouse gas in a gaseous stream. The value of the parameter provided in its source, tool 08 version 03.0 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.
	Pn	Total pressure at normal conditions	101,325 Pa	The parameter is used for determining the mass flow of a greenhouse gas in a gaseous stream. The value of the parameter provided in its source, tool 08 version 03.0 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.
	Tn	Temperature at normal conditions	308 K (273 °C + 35 °C "which is project design of gas storage balloon")	The parameter is used for determining the mass flow of a greenhouse gas in a gaseous stream. The value of the parameter

				provided in its source, tool 08 version 03.0 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.			
	MCF _j	Methane correction factor	0.80	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.			
	DOC _{f,default}	Default value for the fraction of degradable organic carbon (DOC) in MSW that decomposes in the SWDS	0.5 (Weight fraction)	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.			
	DOC _j	Fraction of degradable organic carbon in the waste type _j (weight fraction)	<table border="1"> <tr> <td>DOC_Wood and wood products</td> <td>43%</td> </tr> <tr> <td>DOC_Pulp, paper and cardboard (other than sludge)</td> <td>40%</td> </tr> </table>	DOC_Wood and wood products	43%	DOC_Pulp, paper and cardboard (other than sludge)	40%
DOC_Wood and wood products	43%						
DOC_Pulp, paper and cardboard (other than sludge)	40%						

			DOC_Food, food waste, beverages and tobacco (other than sludge)	15%	PSF/01-b/ and ER sheet/02-b/.
			DOC_Textiles	24%	
			DOC_Garden, yard and park waste	20%	
			DOC_Glass, plastic, metal, other inert waste	0%	
	φdefault	Default value for the model correction factor to account for model uncertainties	For project or leakage emissions: φdefault = 1. For baseline emission calculations φdefault = 0.85	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.	
TDLj,y and TDLk,y	Average technical transmission and distribution losses for providing electricity to	12.1% distribution loss + 1.9% transmission loss= 14%	The parameter is used for the quantification of project emission from electricity consumption associated with anaerobic digester. The		

		source j, k in year y		value of this parameter provided in PSF/01-b/ and ER sheet/02-b/ is found to be consistent with its source/29/
	kj	Decay rate for the waste type j	According to data, as open source, released by Turkish State of Meteorological Service Mean Annual Precipitation (MAP) is 396,3 mm and an Academic Paper indicates the potential of evotranspiration (PET) value as 1290 mm for Van Province. In addition mean annual temperature is 9.4 Celsius. Hence MAP/PET value could be calculated as 0.30 (with MAT<20 Celcius) and related default values were chosen from the "Data and Parameter Table 7 of the Tool 04 according to that value.	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/
	F _{ww,CH4,default}	Default factor representing the remaining CH ₄ production capacity of liquid digestate	0.2 (conventional digesters)	The parameter is used for the calculation of leakage emission from anaerobic digester associated with liquid digestate. The value of this parameter provided in its source, Tool 014, version 02.0 is consistent with PSF/01-b/ and ER sheet/02-b/.

	F _{SD,CH4,default}	Default factor representing the remaining CH ₄ production capacity of solid digestate	0.35 (all technologies)	The parameter is used for the calculation of leakage emission from anaerobic digester associated with solid digestate. The value of this parameter provided in its source, Tool 014, version 02.0 is consistent with PSF/01-b/ and ER sheet/02-b/.
	F	Fraction of methane in the SWDS gas (volume fraction)	0.55	The parameter is used for the calculation of baseline emission of methane from SWDS, The value of the parameter provided in its source, Tool 04 version 08.1 is found to be consistent with PSF/01-b/ and ER sheet/02-b/.
	EF _{EPJ,y}	CO ₂ emission factor of the fossil fuel type used for electricity generation by equipment type k in the absence of the project activity	0.5552 (t CO ₂ /MWh)	Türkiye Emission factor datasheet published by Ministry of Energy and natural Resources/32/. Prepared based on latest CDM tool 07 version 7.0. The parameter is used for the quantification of project emission from electricity consumption associated with anaerobic digester. GCC verifier confirms

			that the value provided is source/32/ is consistent with PSF/01-b/ and ER sheet/02-b/.
ηflare,m	Flare efficiency	In the case of open flares, the flare efficiency in the minute m (flare,m) is 50% when the flame is detected in the minute m (Flamem), otherwise flare,m is 0%. For this project data is taken as 50% since the open flare type is used on site.	The parameter is used for the quantification of project emission from flaring of biogas. The value provided in the PSF/01-b/ and ER sheet/02-b/ is consistent with its source, para 18, Tool 06 version 04.0.

Data and parameters to be monitored:

The monitoring plan presented in the PSF /1-b/ complies with the requirements of the applied monitoring methodology /B02/. The verification team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

The verification team through a document review and interviews with the relevant stakeholders has reviewed the procedures. The information provided has allowed the verification team to confirm that the proposed monitoring plan is feasible within the project design.

The parameters that are to be monitored ex-post are:

Parameter	Data Unit	Description	Verifier assessment
EGpj,y	MWh	Quantity of net electricity supplied to the grid in year y	The parameter will be monitored for the calculation of baseline emission from generation of electricity which is involved in equation 2 of tool 05 version 3.0 as described in section B.6.1 of PSF/01-b/
ECpj,y	MWh	Quantity of electricity consumed by the project electricity consumption source j in year y	The parameter will be monitored for the calculation of project emission from generation of electricity which is involved in equation 1 of tool 05 version 3.0 as described in section B.6.1 of PSF/01-b/

	Wx	Tonne	Total amount of waste disposed in a SWDS in year x	The parameter will be monitored for the calculation of baseline emission of methane from SWDS which is involved in the equation 1 of tool 04 version 8.1. as described in section B.6.1 of PSF/01-b/
	fy	--	Fraction of methane captured at the SWDS and flared, combusted, or used in another manner that prevents the emissions of methane to the atmosphere in year y	The parameter will be monitored for the calculation of baseline emission of methane from SWDS which is involved in the equation 1 of tool 04 version 8.1. as described in section B.6.1 of PSF/01-b/
	Vt,db	m ³ dry gas/h	Volumetric flow of the gaseous stream in time interval t on a dry basis (biogas generated via anaerobic digesters)	The parameter will be monitored for the calculation of project emission of methane from anaerobic digester, project emission from flaring of biogas, and leakage emission from anaerobic digester which is involved in equation 5 of tool 08 version 3.0 as described in section B.6.1 of PSF/B01-b/
	Pt	Pa	Pressure of the gaseous stream in time interval t	The parameter will be monitored for the calculation of project emission of methane from anaerobic digester, project emission from flaring of biogas, and leakage emission from anaerobic digester which is involved in the equation 6 of tool 08 version 3.0 as described in section B.6.1 of PSF/01-b/
	vi,t,db	m ³ gas i/m ³ dry gas	Volumetric fraction of greenhouse gas i in a time interval t on a dry basis	The parameter will be monitored for the calculation of project emission of methane from anaerobic digester, project emission from flaring of biogas, and leakage emission from anaerobic digester which is involved in equation 5 of tool 08 version 3.0 as described in section B.6.1 of PSF/B01-b/
	Tt,AD	K	Temperature of the gaseous stream in time interval t	The parameter will be monitored for the calculation of project emission of methane from anaerobic digester, project emission from flaring of biogas, and leakage emission from anaerobic digester which is involved in the equation 6 of tool 08 version 3.0 as described in section B.6.1 of PSF/01-b
	F _{CH4,RG,m}	M ³	volumetric flow of methane to the flare	The parameter is included in the equation 15 of tool 06 version 4.0 and is used for the calculation of project

				emission from flaring of biogas as described in section B.6.1 of PSF/01-b/
	Flame _m	Flame on or Flame off	Flame detection of flare in the minute m	This parameter is to be monitored to determine the value of n _{flame,m} for calculation of project emission from flaring of biogas (para 18 of tool 06 version 4.0) as described in section B.6.1 of PSF/B01-b/
	For Parameters to be monitored for E+/S+ assessments and SDG labels			
	CO ₂ emissions (EA03)	NA	CO ₂ emissions	Emission reduction achieved due to the implementation of project activity that would have been otherwise be emitted by fossil fuel-based power plants. Electricity generation of the project activity will be continuously measured The CO ₂ emission reduction is calculated by multiplying the emission factor of the Grid with the net electricity supplied by the project activity to the grid.
	Long-term jobs created (SJ01)	Number of recruited staff during operation	Creating new employment opportunities.	GCC verifier Through interviews and desk review of employment records/10/ confirm that long term employment has been provided during the operational phase of the project activity. Therefore +1 scoring is given to the social impact. Number of recruited staff during operation will be monitored on annual basis.
	Reducing / increasing accidents (SHS03)	Number of recruited staff trained during operation	The trainings such as Occupational Health and Safety, Working at Heights, Hygiene Certificate, First Aid, Fire Awareness, Manual handling that will contribute to the prevention of the incidents and increase awareness in the work field, be given to the staff.	GCC verifier through interviews and desk review of training records/11/ confirms that several trainings programmes are provided to the workers at the project site. Therefore +1 scoring is given to the social impact. The Number of recruited staff trained during the operational phase will be monitored on annual basis.
Project-related knowledge dissemination effective	Number of recruited staff trained during	Regular training on maintenance and occupational health and safety will be provided to staff those responsible for	GCC verifier through interviews and desk review of training records/11/ confirms that several trainings such are provided to the workers at the project site. Therefore +1 scoring is given to the social impact. The Number of recruited staff trained during the operational phase will be monitored on annual	

	or not (SE03)	operation	maintenance and repair.	basis. Therefore +1 scoring is given to the Environmental safeguard
	SOx emission (EA01)	SOx content of exhaust gas	The LFG generators generate and emit air pollutant SOx to the atmosphere	The SOx emission which will be reduced due to the project activity will be quantified. PO has provided the sample quantification in the tab "SOx and NOx" of ER sheet/01-b/ and GCC verifier has cross checked the values provided in the calculation with its source/33/ and is found to be consistent. Project activity is expected to reduce 178.5 tonnes of SOx annually. Therefore +1 scoring is given to the Environmental safeguard parameter
	NOx emission (EA02)	NOx content of exhaust gas	The LFG generators generate and emit air pollutant NOx to the atmosphere	The NOx emission which will be reduced due to the project activity will be quantified. PO has provided the sample quantification in the tab "SOx and NOx" of ER sheet/01-b/ and GCC verifier has cross checked the values provided in the calculation with its source/33/ and is found to be consistent. Project activity is expected to reduce 36 tonnes of NOx annually. Therefore +1 scoring is given to the Environmental safeguard parameter
	Hazardous waste (EL02)	Hazardous wastes records	There may be Hazardous wastes, e.g., waste mineral oils	The hazardous Waste generated in the project site will be handled as per the national regulation (Regulation on Waste Management). The records of hazardous waste generated will be maintained. Therefore +1 scoring is given to the Environmental safeguard parameter
	Solid waste Pollution from end of life products/equipment	Waste Records	Solid waste emerging from the e-waste, batteries and end-of life equipment	The E-waste generated in the project site will be handled as per the national regulation (Regulation on Waste Management). The records of the e-waste generated, and its management will be made available during verification. Therefore +1 scoring is given to the Environmental safeguard parameter
	Solid waste Pollution from plastics	Plastic waste	Any plastic waste generated at the site.	The plastic waste generated at the project site will be handled as per national regulation (Regulation on Control of Packaging Waste). The records of the plastic waste generated, and its management will be made available during the verification. Therefore +1 scoring is given to the Environmental safeguard parameter

	In summary, the parameters to be monitored have been presented correctly according to requirements and are considered in accordance with the applied methodology /B02/. This is in conformance with the requirements of GCC Verification Standard (version 3.1) /B01-2/.
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D.4. Start date, crediting period and duration

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	<p>The start date of the project is 25/10/2019, which is the commissioning of the first gas engine.</p> <p>Crediting period has been chosen as fixed 10 years from 25/10/2019 to 24/10/2029.</p> <p>The verification team concludes that the duration of the proposed project activity is in conformance with the requirements of §39 and §40 of GCC Project Standard, version 03.01 /B01-1/.</p>

D.5. Environmental impacts

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	<p>The Environmental Impact Assessment/07-b/ of the project has been done on the basis of the decision by the Ministry of Environment, Urbanisation and Climate change. After evaluation, final EIA report has been prepared on 25/05/2021. All the precautions that should be taken at the facility during operational phase based on the EIA report is mentioned under section D.2 of the PSF. EIA Approval has been given by the ministry on 07/06/2021 /07-a/</p> <p>The project will benefit the local people by engaging them in construction, operation and maintenance activities during the project. The verification team confirms that there are no adverse impacts on environment due to the implementation of project activity. The verification team also confirm that the project owner has taken all the necessary legal approvals from the government and other parties to implement the project activity.</p>

D.6. Local stakeholder consultation

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	<p>A Local Stakeholder Meeting was conducted for the project activity on 10/12/2020 in Elit Alyans Wedding Hall. Van Province, Tuşba District. The consultation was performed to meet the requirement of the GCC since there are no Host country requirement to conduct consultation for such projects.</p> <p>The verification team confirms that the local stakeholder consultation process was performed by the project owner before the submission of the project activity for global stakeholder consultation.</p>

	<p>The objective of the local stakeholder consultation carried out to comply with GCC requirements and identify the comments/concerns that might be required to be addressed by PO. The stakeholder consultation responses were received by the assessment team. The verification team confirmed by review of the stakeholder responses that the summary of stakeholders' comments reported in PSF was accurate. There was no negative feedback received. The agenda of meeting and feedback taken from the stakeholders confirms that the environment and social impacts analysis results were also shared and discussed with local stakeholders along with SD goals achieved by PA. The same is also confirmed during on-site interview carried out with local stakeholder.</p>
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D.7. Approval and Authorization- Host Country Clearance

Means of Verification	Desk review, Interviews
Findings	
Conclusion	The verification team confirms that no HC approval is required by the CORSIA labelled project activity, and the HCA will be required during the first or subsequent verification, when the issuance of carbon credit is considered beyond 1st Jan 2021

D.8. Project Owner- Identification and communication

Means of Verification	Desk review, Interviews																	
Findings																		
Conclusion	<table border="1"> <tr> <td>Project Owner name (as per LON/LOA)</td> <td>GTE KARBON SÜRDÜRÜLEBİLİR ENERJİ EĞİTİM DANIŞMANLIK VE TİCARET A.Ş</td> </tr> <tr> <td>Country</td> <td>Türkiye</td> </tr> <tr> <td>Address</td> <td>MAIDAN -Mustafa Kemal Mahallesi 2118. Cad. No: 4C Blok 42 Çankaya/Ankara</td> </tr> <tr> <td>Telephone</td> <td>+90 312 514 63 63</td> </tr> <tr> <td>Fax</td> <td>+90 312 472 33 66</td> </tr> <tr> <td>E-mail</td> <td>Kemal.demirkol@gte.com.tr</td> </tr> <tr> <td>Website</td> <td>www.gte.com.tr</td> </tr> <tr> <td>Contact person</td> <td>M. Kemal Demirkol</td> </tr> </table>	Project Owner name (as per LON/LOA)	GTE KARBON SÜRDÜRÜLEBİLİR ENERJİ EĞİTİM DANIŞMANLIK VE TİCARET A.Ş	Country	Türkiye	Address	MAIDAN -Mustafa Kemal Mahallesi 2118. Cad. No: 4C Blok 42 Çankaya/Ankara	Telephone	+90 312 514 63 63	Fax	+90 312 472 33 66	E-mail	Kemal.demirkol@gte.com.tr	Website	www.gte.com.tr	Contact person	M. Kemal Demirkol	
Project Owner name (as per LON/LOA)	GTE KARBON SÜRDÜRÜLEBİLİR ENERJİ EĞİTİM DANIŞMANLIK VE TİCARET A.Ş																	
Country	Türkiye																	
Address	MAIDAN -Mustafa Kemal Mahallesi 2118. Cad. No: 4C Blok 42 Çankaya/Ankara																	
Telephone	+90 312 514 63 63																	
Fax	+90 312 472 33 66																	
E-mail	Kemal.demirkol@gte.com.tr																	
Website	www.gte.com.tr																	
Contact person	M. Kemal Demirkol																	
Conclusion	<table border="1"> <tr> <td>Project Owner name (as per LON/LOA)</td> <td>Panda Alüminyum A.Ş</td> </tr> <tr> <td>Country</td> <td>Türkiye</td> </tr> <tr> <td>Address</td> <td>Beyüzümü Mah. Özalp Yolu No:13 Tuşba/Van</td> </tr> <tr> <td>Telephone</td> <td></td> </tr> <tr> <td>- Fax</td> <td></td> </tr> <tr> <td>E-mail</td> <td>emre.seherli@mndgida.com.tr</td> </tr> <tr> <td>Website</td> <td></td> </tr> <tr> <td>Contact person</td> <td>Emre Şeherli</td> </tr> </table>	Project Owner name (as per LON/LOA)	Panda Alüminyum A.Ş	Country	Türkiye	Address	Beyüzümü Mah. Özalp Yolu No:13 Tuşba/Van	Telephone		- Fax		E-mail	emre.seherli@mndgida.com.tr	Website		Contact person	Emre Şeherli	
Project Owner name (as per LON/LOA)	Panda Alüminyum A.Ş																	
Country	Türkiye																	
Address	Beyüzümü Mah. Özalp Yolu No:13 Tuşba/Van																	
Telephone																		
- Fax																		
E-mail	emre.seherli@mndgida.com.tr																	
Website																		
Contact person	Emre Şeherli																	
Conclusion	<p>This is in compliance with the § 10-i of the Project Standard Version 3.1 /B02-1/. Project Owner has been confirmed from the agreement and contract document submitted by the Project Owner.</p>																	

D.9. Global stakeholder consultation

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	The process for global stakeholder consultation is ongoing in accordance with the requirements of section 3.2.4 of the Verification Standard (version 03.1) /B01-2/. The PSF was published for global stakeholder consultation from 05/01/2023 till 19/01/2023.

D.10. Environmental Safeguards (E+)

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	Project owner has chosen to apply for the Environmental safeguards certification label thereby complying with the para 14(c-iii) of GCC project standard version 3.1. GCC verifier has performed independent assessment of the environmental safeguard as per the GCC verification standard version 3.1 and Environmental and social safeguards standard version 3.0. The complete assessment of the environmental safeguard's parameter is provided in Appendix 05 provided in this report.

D.11. Social Safeguards (S+)

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	Project owner has chosen to apply for the Environmental safeguards certification label thereby complying with the para 14(c-iv) of GCC project standard version 3.1. GCC verifier has performed independent assessment of the environmental safeguard as per the GCC verification standard version 3.1 and Environmental and social safeguards standard version 3.0. The complete assessment of the environmental safeguard's parameter is provided in Appendix 06 provided in this report.

D.12. Sustainable development Goals (SDG+)

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	<p>The Project Owner has provided complete information in the PSF to demonstrate that the chosen SDG goals positively contribute to the UN SDGs as required by paragraph 19, 20 and 21 of Project Sustainability Standard v.3.1 /B01-5/.</p> <p>Based on the documentation review, the verification team can confirm that Project Activity is likely to contribute to the 5 United Nations Sustainable Development Goals (6,7, 8,9 and 13) and would have a positive impact, hence, is eligible to achieve additional SDG+ (platinum) certifications. The complete assessment of the Sustainable Development Goals is provided in Appendix 07 provided in this report.</p>

D.13. Authorization on Double Counting from Host Country (for CORSIA)

Means of Project Verification	Desk review, Interviews
--------------------------------------	-------------------------

Findings	
Conclusion	A declaration under section A.5 of the PSF has been included for offsetting the approved carbon credits (ACCs) for the entire crediting period from 25/10/2019 to 24/10/2029. The host country attestation is yet to be obtained for authorization on double counting.

D.14. CORSIA Eligibility (C+)

Means of Project Verification	Desk review, Interviews
Findings	
Conclusion	<p>The start date of the project activity is 25/10/2019 as per the commissioning date /06-a/. Based on the assessment of the pSF/01-b/ and ER sheet/02-b/, GCC verifier confirms that the project activity is likely to result in GHG emission reductions as a result of the implementation of project activity. The project owner has opted for Environmental and Social No net harm and based on the scoring provided by PO in the PSF and assessment of the same in compliance with GCC environmental and social safeguards standard version 3.0, GCC verifier concludes that project activity is not likely to cause and net harm to the environment or society. Project activity is also expected to contribute to SDG 6, SDG 7, SDG 8, SDG 9, and SDG 13 and therefore achieving platinum label. The assessment of the SDGs proposed by PO has been one in accordance with GCC project sustainability standard version 3.1</p> <p>Therefore, GCC verifier concludes that the proposed project activity is meets all the CORSIA eligibility criteria in accordance with para 22 and 23 of GCC clarification no.1 version 1.3</p>

Section E. Internal quality control

The Verification report has undergone a technical review and quality review before being submitted for registration. A technical reviewer is qualified in accordance with CCIPL’s qualification scheme for GCC verification performed the technical review.

Section F. Project Verification opinion

The GCC Project Verifier, Carbon Check (India) Private Ltd, verifies and certifies that the GCC Project Activity “Panda Van Biogas Project”:

- (a) has correctly described the Project Activity in the Project Submission Form (version 10, dated 15/12/2023) including the applicability of the approved CDM methodology, ACM0022 Version 3.0 meets the methodology applicability conditions, is additional and is expected to achieve the forecasted real and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reduction estimates correctly and conservatively;
- (b) is likely to generate GHG emission reductions amounting to the estimated 865,763 t CO₂eq (for the fixed 10 years crediting period), as indicated in the PSF, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules and therefore requests the GCC Program to register the Project Activity;

Project Verification Report

- (c) is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and therefore requests the GCC Program to register the Project Activity, which is likely to achieve the requirements of the Environmental No-net-harm Label (E+) and the Social No-net harm Label (S+); and
- (d) is likely to contribute to the achievement of United Nations Sustainability Development Goals (SDGs), comply with the Project Sustainability Standard, and contribute to achieving a total of 5 SDGs, which is likely to achieve the Platinum SDG certification label (SDG+).

The Verification report describes a total of 45 findings, which include:

- 00 Forward Action Request (FAR);
- 36 Corrective Action Requests (CARs);
- 09 Clarification Requests (CLs);

All findings have been resolved by the project owner (except the FAR which needs to be resolved during emission reduction verification).

Appendix 1. Abbreviations

Abbreviations	Full texts
ACC	Approved Carbon Credits
ACM	Approved Consolidated Methodology
AM	Approved Methodology
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Limited
CDM	Clean Development Mechanism
CH ₄	Methane
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CP	Crediting Period
DR	Desk Review
EIA	Environmental Impact Assessment
EPIAŞ	Enerji Piyasaları İşletme A.Ş.
FAR	Forward Action Request
GCC	Global Carbon Council
GHG	Green House Gas
GW	Giga Watt
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
KWh	Kilo Watt hour
LSC	Local Stakeholder Consultation Process
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega Watt

Appendix 2. Competence of team members and technical reviewers

>>



Carbon

— CHECK —

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Rishi K Raychoudhury

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Health Expert	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input type="checkbox"/> CCB Expert	<input type="checkbox"/> Legal Expert	<input checked="" type="checkbox"/> Financial Expert	<input type="checkbox"/> Environmental, Health and Safety financial matters
<input checked="" type="checkbox"/> SDG+	<input checked="" type="checkbox"/> Social no-harm(S+)	<input checked="" type="checkbox"/> Environment no-harm(E+)	
<input checked="" type="checkbox"/> Local Expert for India			

in the following Technical Areas:

<input type="checkbox"/> TA 1.1	<input checked="" type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input checked="" type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input type="checkbox"/> TA 14.1	<input type="checkbox"/> TA 15.1	<input type="checkbox"/> TA 16.1		

Issue Date

5th December 2023



Ms. Priya Suman
Compliance Officer

Expiry Date

31st December 2024



Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022	Initial Adoption
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Anubhav Dimri

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- Validator
- Verifier
- Team Leader
- Technical Expert
- Technical Reviewer
- Health Expert
- Gender Expert
- Plastic Waste Expert
- CCB Expert
- Legal Expert
- Financial Expert
- Environmental, Health and Safety financial matters
- SDG+
- Social no-harm(S+)
- Environment no-harm(E+)
- Local Expert for India, RSA and Spanish speaking countries

in the following Technical Areas:

- TA 1.1
- TA 1.2
- TA 2.1
- TA 3.1
- TA 4.1
- TA 4. n
- TA 5.1
- TA 5.2
- TA 7.1
- TA 8.1
- TA 9.1
- TA 9.2
- TA 10.1
- TA 13.1
- TA 13.2
- TA 14.1
- TA 15.1
- TA 16.1

Issue Date

5th December 2023

Priya Suman

Ms. Priya Suman
Compliance Officer

Expiry Date

31st December 2024

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022 ¹	Annual revision
Jan 2023	Annual revision
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CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Kiran KV

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Validator | <input checked="" type="checkbox"/> Verifier | <input checked="" type="checkbox"/> Team Leader | <input checked="" type="checkbox"/> Technical Expert |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> CCB Expert | <input type="checkbox"/> Legal Expert | <input type="checkbox"/> Financial Expert | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input checked="" type="checkbox"/> SDG+ | <input checked="" type="checkbox"/> Social no-harm(S+) | <input checked="" type="checkbox"/> Environment no-harm(E+) | |
| <input checked="" type="checkbox"/> Local Expert for India | | | |

in the following Technical Areas:

- | | | | | |
|---|---|----------------------------------|---|---|
| <input type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1 | <input checked="" type="checkbox"/> TA 3.1 | <input type="checkbox"/> TA 4.1 |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1 | <input type="checkbox"/> TA 5.2 | <input type="checkbox"/> TA 7.1 | <input type="checkbox"/> TA 8.1 |
| <input type="checkbox"/> TA 9.1 | <input type="checkbox"/> TA 9.2 | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input checked="" type="checkbox"/> TA 14.1 | <input checked="" type="checkbox"/> TA 15.1 | <input type="checkbox"/> TA 16.1 | | |

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022	Initial Adoption
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

¹Please refer to previous version of FM 7.9 for the revision history



Carbon Check (India) Private Limited

Certificate of Competency

Muhammet Ali ERDURAN

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|---|---|--|---|
| <input type="checkbox"/> Validator | <input type="checkbox"/> Verifier | <input type="checkbox"/> Team Leader | <input type="checkbox"/> Technical Expert |
| <input type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert | <input type="checkbox"/> Plastic Waste Expert |
| <input type="checkbox"/> SDG+ | <input type="checkbox"/> Social no-harm(S+) | <input type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert |
| <input type="checkbox"/> Financial Expert | <input checked="" type="checkbox"/> Local Expert for Turkey | | |

in the following Technical Areas:

- | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> TA 1.1 | <input type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1 | <input type="checkbox"/> TA 3.1 | <input type="checkbox"/> TA 4.1 |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1 | <input type="checkbox"/> TA 5.2 | <input type="checkbox"/> TA 7.1 | <input type="checkbox"/> TA 8.1 |
| <input type="checkbox"/> TA 9.1 | <input type="checkbox"/> TA 9.2 | <input type="checkbox"/> TA 10.1 | <input type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1 | | | |

Issue Date

03rd May 2023

Expiry Date

02nd May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Amit Anand

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC 14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Validator | <input checked="" type="checkbox"/> Verifier | <input checked="" type="checkbox"/> Team Leader | <input checked="" type="checkbox"/> Technical Expert |
| <input checked="" type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert | <input type="checkbox"/> Gender Expert | <input checked="" type="checkbox"/> Plastic Waste Expert |
| <input checked="" type="checkbox"/> CCB Expert | <input type="checkbox"/> Legal Expert | <input checked="" type="checkbox"/> Financial Expert | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input checked="" type="checkbox"/> SDG+ | <input checked="" type="checkbox"/> Social no-harm(S+) | <input checked="" type="checkbox"/> Environment no-harm(E+) | |
| <input checked="" type="checkbox"/> Local Expert for India and RSA | | | |

in the following Technical Areas:

- | | | | | |
|---|---|----------------------------------|---|---|
| <input checked="" type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1 | <input checked="" type="checkbox"/> TA 3.1 | <input type="checkbox"/> TA 4.1 |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1 | <input type="checkbox"/> TA 5.2 | <input type="checkbox"/> TA 7.1 | <input checked="" type="checkbox"/> TA 8.1 |
| <input type="checkbox"/> TA 9.1 | <input type="checkbox"/> TA 9.2 | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input checked="" type="checkbox"/> TA 14.1 | <input checked="" type="checkbox"/> TA 15.1 | <input type="checkbox"/> TA 16.1 | | |

Issue Date

5th December 2023

Priya Suman

Ms. Priya Suman
Compliance Officer

Expiry Date

31st December 2024

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022 ¹	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CC IPL_FM 7.9 Certificate of Competency_V4.0_112023

¹ Please refer to previous version of FM 7.9 for the revision history

Appendix 3. Document reviewed or referenced

No.	Author	Title	References to the document	Provider
/1/	PO	a) PSF for GSC	version 04 dated 04/11/2022	PO
		b) Final PSF	Version 10 dated 15/12/2023	
/2/	PO	a) Emission reduction calculation spread sheet for /1-a/	-	PO
		b) Revised emission reduction calculation spread sheet for /1-b/		
/3/	PO	a) IRR spread sheet for /1-a/	-	PO
		b) IRR spread sheet for /1-b/		
/4/	EPDK	Common practice assessment sheet	PandaVan_CP_08122023	EPDK PO
/5/	EPDK	Generation license	a. panda van license.pdf (dated 10/10/2019)	PO
		a. Original b. Amended	b. Panda Van Revised License.pdf (dated 30/06/2022)	
/6/	Energy and Natural Resource Ministry	Commissioning certificate	a. Panda Van Biogas Project_Provisional Acceptance Protocol_GM1_GM2 and GM3.pdf (dated 25/10/2019)	PO
		a. G1,G2,G3 b. G4	b. Panda Van Biogas Project_Provisional Acceptance Protocol_GM4.pdf (dated 21/09/2022)	
/7/	a. Ministry of Environment and Urbanization b. Panda Alüminyum A.Ş.	EIA	a. EIA Approval.pdf (dated 07/06/2021)	PO
		a. Approval report b. EIA report	b. Panda Van Biogas Project_Finalized_Approved EIA Report.pdf (dated 25/05/2021)	
/8/	Vangolu Elektrik Dagitim (VEDAS)	Connection and system use agreement	-	PO
/9/	EPIAS	Power purchase agreement	-	PO
/10/	PO	Employment evidences	-	PO
/11/	PO	HSE trainings	-	PO
/12/	PO	Waste records	-	PO
/13/	Multiple authors	Technical specifications a. Energy meters	-	PO

Project Verification Report

		<ul style="list-style-type: none"> b. Flare c. Gas Analyzer d. Gas Engine e. Generator f. Scale g. Transformers 		
/14/	VEDAS	Energy Meters		PO
/15/	PO	Single line diagram	-	PO
/16/	PO	LOA and ownership	-	PO
/17/	PO	Project line diagram and organizational scheme	-	PO
/18/	PO	Flow meters	-	PO
/19/	Environmental protection and control department, Van Municipality, Türkiye	Historical Municipal Solid Waste Data	-	PO
/20/	van yüzüncü yıl üniversitesi rektörlüğü	Solid waste Characterization		PO
/21/	PO	Sample electricity generation	-	PO
/22/	Van Metropolitan Municipality	Agreement between municipality and Panda Van	-	PO
/24/	Van Metropolitan Municipality	Bidding document	-	PO
/25/	IRENA	IRENA report		PO
/26/	Ecosystem marketplace	Evidence for expected ACCs		PO
/27/	EPDK	Feed in tariff value evidence		PO
/28/	Revenue administration presidency	Corporate tax evidence		PO
/29/	TEIAS	Transmission loss factor evidence		PO
/30/	EPDK	Law on the use of renewable energy source		PO

		for electricity generation purpose		
/31/	Turkishdemocracy.com	Inflation rate evidence		PO
/32/	Energy and Natural resource Ministry	Turkish emission factor dataset		PO
/33/	UNFCC	Türkiye emission source inventory 2018, published in 2020		PO
B01	GCC	<ol style="list-style-type: none"> 1. GCC Project Standard, version 3.1 2. GCC Verification Standard, version 3.1 3. GCC Program Manual, version 3.1 4. Environment-and-Social-Safeguards-Standard, version 3.0 5. Project-Sustainability-Standard, version 3.1 	-	Others
B02	UNFCCC	CDM Methodology: ACM0001 Flaring or use of landfill gas (version 19.0). ACM0022 Version 3.0 "Alternative waste treatment process"	-	Others
B03	GCC	PSF template	-	Others
B04	UNFCCC	<ol style="list-style-type: none"> 1. TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality, version 7.0 2. TOOL04: Emissions from solid waste disposal sites, version 8.0 3. TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 3.0 4. TOOL07: Tool to calculate the emission factor for an electricity system, version 7.0 5. TOOL08: Tool to determine the mass flow of a greenhouse gas in a gaseous stream, version 		Others

Project Verification Report

		3.0 6. TOOL24: Common practice, version 3.1 7. TOOL27: Investment analysis, version 11.0		
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Appendix 4. Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

CL ID	01	Section no.	A.1	Date: 01/05/2023
Description of CL				
<i>In the section A.1 of the PSF, PO has mentioned that "The Project activity has been located within the boundaries of an existing landfill site," However, during the on-site visit, it has been observed that the already existing landfill is 1 km away from the project site. PO is requested to clarify and correct the PSF if required.</i>				
Project Owner's response				Date: 11/07/2023
<i>Corrected as The Project activity has been located 1 km away from the existing landfill site, where the waste was collected and LFG is currently collected from and stored"</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the PO has revised the PSF accordingly.				
CL is closed				
CL ID	02	Section no.	B.1	Date: 01/05/2023
Description of CL				
<i>It has been observed that the applicability of all the tools listed in the section B.1 of PSF is not provided in the section B.2. PO is requested to clarify the same.</i>				
Project Owner's response				Date: 11/07/2023
<i>All the tools are listed in B.1. and also applicability conditions of those are explained in B.2.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the applicability condition of all the tools mentioned in section B.1 of PSF is provided in section B.2 of PSF.				
CL is closed				
CL ID	03	Section no.	B.4	Date: 01/05/2023
Description of CL				
<i>In section B.4 of PSF, PO has mentioned that "In respect of large-scale consolidated methodology ACM0002: Grid-connected electricity generation from renewable sources, version 20, EB 100, Annex 6", the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid".</i>				
<i>However, the methodology mentioned in the statement is not used for the project activity. PO is requested to clarify the relevance of this statement.</i>				
Project Owner's response				Date: 11/07/2023
<i>The project scale is changed due to the amended license. Hence the Section B.4. is also revised accordingly. The irrelevance of the statement is removed from the PSF.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that necessary changes has been made in the revised PSF and irrelevant statement has been removed which is deemed to be acceptable to GCC verifier.				
CL is closed				

Project Verification Report

CL ID	04	Section no.	NA	Date: 01/05/2023
Description of CL				
<i>Po is also requested to provide any supporting document to the GCC verifier mentioned in the annex 1 of the validation plan which is yet to be provided. Including the agreement between the project owner and the Van municipality regarding the procurement of the landfill.</i>				
Project Owner's response				Date: 11/07/2023
<i>All necessary documents are provided in the folder sent to GCC verifier.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
All above mentioned supporting documents are provided to GCC verifier.				
CL is closed.				

CL ID	05	Section no.	B.7.1	Date: 14/11/2023
Description of CL				
<i>As per para 33 of methodology, sampling is determined to determine the fractions of different waste types is necessary for determining value for parameter "Wjx". Po is requested to provide the sampling procedure in section B.7.2 under the data/parameter table for parameter Wjx.</i>				
<i>The serial number and calibration dates and calibration frequency of weighbridge is also requested to be provided. Evidence of calibration frequency and calibration dates is requested to be provided to GCC verifier</i>				
Project Owner's response				Date: 30/11/2023
Project Approved EIA document (Table 23, page 63) gives detailed separation units of MSW (sorting of waste). Project does not have combustion unit and MSW do not contain biogenic or fossil matter. Hence there is no need to ash analysis for the waste sampling. Project weighted the sorted MSW and recorded the amount and fraction which are fed up to anaerobic digesters. Related explanation added to "additional comments" row of the referred parameter in section B.7.1. Calibration document of weighbridge is to be provided during monitoring periods of the project activity.				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
The response provided by PO is deemed to be acceptable to GCC verifier.				
CL is closed.				

CL ID	06	Section no.	B.6.2, B.7.1	Date: 14/11/2023
Description of CL				
<i>The parameters included in equation 5 and equation 6 of tool 08 is used for more than one calculations</i>				
<i>1. For determining the mass flow of gases from anaerobic digester</i>				
<i>2. For determining the mass flow of gases to the flare unit.</i>				
<i>Therefore in section B.6.2 and B.7.1, in the table of each parameter included in the above mentioned equations, PO is requested to provide the data of each approaches separately</i>				
Project Owner's response				Date: 30/11/2023
Related "to monitor" and "not to monitor" parameters added to relevant sections.				
<i>Table of parameter Vitb and Pt added to section B.7.1</i>				
<i>Table of parameter nflare (efficiency) added to section B.6.2 and Flame_m added to section B.7.1 to find out the relevant flare efficiency value (%50 or "0")consideration during monitoring terms.</i>				
Documentation provided by Project Owner				

GCC Project Verifier assessment	Date: 08/12/2023
It has been observed that PO has provided the monitoring procedures appropriately.	
CL is closed.	

CL ID	07	Section no.	B.5	Date: 14/11/2023
Description of CL				
<p><i>PO, in section B.5 of PSF has mentioned the following "If the project is only about generation of electricity (and not heat or cogeneration), the Project Owner demonstrates that the penetration of renewable electrical energy generation technology justifies that the share of installed capacity of the specific technology used in the project activity at the time of preparation of project submission to GCC is equal to or less than 2%1 of the total installed capacity of power generation in grid-connected power plant, the project is considered as "automatically additional".</i></p> <p><i>However, as per para 25 of methodology ACM0022 version 3.0, the condition is applicable only to greenfield composting facility. And as per table 2 of methodology, PO has opted for Anaerobic digestion, and not Composting as project activity. Therefore PO is requested to clarify the relevance of adding the above mentioned statement in the PSF.</i></p>				
Project Owner's response				Date: 30/11/2023
The statement is removed. In addition, demonstration of additionality and alternative baseline scenarios added to PSF file as per paragraph 16-19 of the applied methodology.				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
CL is closed				

CL ID	08	Section no.	B.5	Date: 14/11/2023
Description of CL				
<p><i>Referring to para 23 of applied methodology ACM0022 version 3.0, "In applying Sub-step 1b of the tool, mandatory applicable legal and regulatory requirements may include mandatory LFG capture or destruction requirements because of safety issues or local environmental regulations.7 Other policies could include local policies promoting productive use of LFG, such as those for the production of renewable energy, or those that promote the processing of fresh waste.", PO is requested to clarify how the requirement has been taken in consideration for demonstration of sub step 1b of additionality provided in section B.5 of PS.</i></p> <p><i>Also as per Tool 02 version 7.0 para 18, under outcome of step 1b, PO is requested to list of alternative scenarios to the project activity that follow mandatory legislation and regulations considering the enforcement in the region or country and Board decisions on national and/or sectoral policies and regulations.</i></p>				
Project Owner's response				Date: 30/11/2023
LFG unit excluded from the project boundary and emission reduction claims. Hence there is no need to provide such information.				
On the other hand, the project has an approved EIA document within the framework of both biomethanization and LFG units. Receiving approval of the relevant document is proof that the relevant legal legislation is met, otherwise the project cannot receive an operation permit.				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
PO has not listed all the alternative scenarios in the outcome of step 1b as required by the tool. PO is requested to do so.				
CL is open.				
Project Owner's response				Date: 15/12/2023
Corrected.				
GCC Project Verifier assessment				Date: 15/12/2023

Project Verification Report

PO has provided the outcome of step 1b appropriately in section B.4 of PSF
CL is closed

CL ID	09	Section no.	B.6.2	Date: 14/11/2023
Description of CL				
<i>As per Tool 14 data/parameter table 3, EFch4,default, "the digester type shall be identified by manufacturer information". PO is requested to provide the same to GCC verifier</i>				
Project Owner's response				Date: 30/11/2023
Related information is present in EIA document page 27.				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
CL is closed				

Table 2. CARs from this Project Verification

CAR ID	01	Section no.	N/A	Date: 01/05/2023
Description of CAR				
<i>Referring to the PSF template v.4.0 general instructions point 11, "Complete this form in English. All sections of this form are mandatory, unless otherwise indicated, and shall be completed with all required information. Prepare all attached supporting documents in English, or, if their originals were prepared in another language, provide a full translation of the relevant sections of these documents in English."</i>				
<i>Therefore, PO is requested to provide the English version of EIA report or relevant sections highlighted and provide the same to GCC verifier and provide the reference to the EIA report wherever applicable in the footnote of the PSF.</i>				
Project Owner's response				Date: 11/07/2023
<i>The translation of the EIA is not possible at this point since it is over 1500 pages. Hence, we identified the pages in the footnotes and references so that local expert can pinpoint what is written and what we referenced.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the references to the EIA report is has not been added in relevant section of PSF such as D.1, D.2, E.1, and E.2. PO is requested to provide the same.				
CL is open				
Project Owner's response				Date: 30/08/2023
The EIA Report is referenced where necessary in D.1, D.2, E.1.				
GCC Project Verifier assessment				Date: 27/09/2023
It has been observed that PO has provided reference to the EIA report wherever applicable in the PSF.				
CL is closed.				

CAR ID	02	Section no.	PSF	Date: 01/05/2023
Description of CAR				
<i>During the on-site visit, it has been observed that there are only 4 Gas engines commissioned and operational. The generation license has also been amended. In the PSF it has been mentioned that there are total 9 Gas engine planned. PO is requested to revise the PSF wherever applicable with the applicable changes and provide the GCC verifier the revised generation license.</i>				
Project Owner's response				Date: 11/07/2023

<i>The revised generation license is provided.</i>	
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: 29/08/2023
In the section A.1 of PSF, it has been observed that PO has stated "By December 2021, 3 units (total installed capacity 4.242 Mwe) is operational". PO is requested to clarify the relevance of this statement as 4 gas engines are already commissioned.	
CAR is open	
Project Owner's response	Date: 30/08/2023
The sentence is removed.	
GCC Project Verifier assessment	Date: 27/09/2023
PO has removed the irrelevant sentence in the PSF	
CAR is closed	

CAR ID	03	Section no.	PSF	Date: 01/05/2023
Description of CAR				
<i>It has been observed that the PO has not used the latest emission factor published. PO is requested to revise the PSF with the latest available emission factor published on 20.09.2022</i>				
Project Owner's response				Date: 11/07/2023
<i>The EF is revised according to the latest version</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that PO has revised the value of emission factor and used the latest available version, however, in section B.6.2 of PSF, PO has mentioned that "The grid emission factor revised as latest official emission factor of Türkiye that can be used in the projects depending on the project type published by the Ministry of Energy and Natural Resources which is released in 06/10/2021". As the latest available version was released on 20.09.2022, PO is requested to correct the same.				
Also, PO is requested to clarify how the tool 07 is applicable to the project activity. The justification should be substantiated with methodology references.				
CAR is open.				
Project Owner's response				Date: 30/08/2023
The sentence is corrected. How the tool 07 justified is already in the section B.2. which is after the methodology is explained with the references? Please be more specific.				
GCC Project Verifier assessment				Date: 27/09/2023
The release date of the emission factor datasheet is 20/09/2022, In PSF it has been mentioned 22/09/2023. Kindly correct.				
Also, PO is requested to state the purpose of tool 07 in the justification provided for the applicability condition in section B.2 of PSF				
CAR is open.				
Project Owner's response				Date: 08/10/2023
The sentence is corrected.				
The purpose is added to the justification.				
GCC Project Verifier assessment				Date: 14/11/2023

Project Verification Report

The sentence has been corrected and the justification for applicability of tool 07 has been discussed in PSF appropriately.

CAR is closed.

CAR ID	04	Section no.	A.2	Date: 01/05/2023
Description of CAR				
<p><i>In the section A.2 of the PSF, the location of electricity generation meters, used for billing purpose, substations and connection point to the national grid is also requested to be incorporated in the single line diagram.</i></p> <p><i>Moreover, during the site visit, it has been observed that the project activity is not implemented as per the diagram provided in the section A.3 of the PSF. PO is requested to revise the single line diagram as per the actual implementation with proper representation of measuring units, including flowmeters, gas analyzers and electricity meters.</i></p> <p><i>PO is requested to provide the photographic evidence of all the flow meters, gas analyzer and any other measuring instruments employed in the project activity.</i></p>				
Project Owner's response				Date: 11/07/2023
<p><i>A "single line diagram" is added to A.2.</i></p> <p><i>A.3. is revised according to the site visit and EIA design process.</i></p> <p><i>The pictures are added in the folder provided to GCC verifier</i></p>				
Documentation provided by Project Owner				

GCC Project Verifier assessment	Date: 29/08/2023
<p>It has been observed that</p> <ol style="list-style-type: none"> 1. PO has not shown the flaring unit in the single line diagram. 2. PO is requested to clarify if the flare unit is provided with a separate flow meter. 3. PO has mentioned in section A.3 that “Flow meters have been installed to measure and monitor accurately the flow of the LFG through the system. The measurement points are the main delivery pipe, the pipe going to the flare and the pipes going to each of the generation units”, however, in the line diagram, only one flow meter has been shown. 4. It has been observed that PO measures the GHG emission from existing and new landfill gas using methodology ACM0001 and the GHG emissions from biodigester using the methodology ACM0022. Considering the different quantification approach involved in both the methodology and the varying concentration and amount in LFG and Biogas, PO is requested to clarify how a single flow meter and gas analyzer can account for the quantification procedures for both the methodologies. 5. In section A.2, the geocoordinates and figure of the existing landfill is also to be provided as it is situated 1 km away from the project site. 6. During the site visit, GCC verifier has observed that the remaining waste from the incoming MSW is transported to the New SWDS, while in the line diagram, it has been shown that the remaining waste from the incoming MSW goes to existing SWDS.. 7. Also, a double arrow is kept between existing SWDS and New SWDS, PO is requested to clarify the purpose of this depiction. 8. In sectionA.3, PO is requested to state the exact number of flow meters, gas analyses, its position and its purpose. The details of the energy meters is also requested to be provided. (Any statement regarding the monitoring processes should be substantiated with documentary evidences eg. Photographs) <p>PO is requested to provide response to all the above comments.</p> <p>CAR is open.</p>	
Project Owner’s response	Date: 30/08/2023
<ol style="list-style-type: none"> 1. Flare unit is added to the line diagram and a document including detailed single line diagram and process diagram on the SCADA screens are provided to GCC verifier.. 2. Flare unit is referenced from EIA Report, Page 37 and adapted into the “line diagram”. The flare has a flowmeter. 3. Flowmeter is shown in revised diagram. 4. The calculation is clearly not over one flowmeter and gas analyzer. For existing SWDS LFG, the characterization values are used. It is a service that is done for the existing SWDS LFG coming to the plant. This is the exact number of how much LFG the existing SWDS produce. For the digester gas amount, the EIA study is used. Since the EIA experimentally measure the biomethanization capacity. The other parameters are also adapted as default values from the literature or again measure or experimented results from the EIA Report. 5. Added. 6. Corrected. 7. The double arrow is removed. 8. Added. 	
GCC Project Verifier assessment	Date: 27/09/2023

Project Verification Report

<p>1-2. The location of the flare unit and flow meter to the flare unit has been added in the figure 3, section A.3 of PSF</p> <p>3. The revised diagram shows only two flow meters, one measures the flow to the flare unit, and the other that measures the flow to the generators.</p> <p>4. Detailed assessment has been added in CAR 20.</p> <p>5. The geocoordinates of existing landfill has been added in PSF.</p> <p>6. The line diagram has been corrected</p> <p>7. The double arrow has been removed.</p> <p>8. The details of the flow meter has been added. \</p> <p>CAR is closed.</p>

CAR ID	05	Section no.	A.6	Date: 01/05/2023
Description of CAR				
<i>PO is requested to fill the section A.6 incorporating all the required information as per the PSF template guideline.</i>				
Project Owner's response				Date: 11/07/2023
<i>A.6. is filled.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the section A.6 of PSF has been filled as per template guidance.				
CAR is closed.				

CAR ID	06	Section no.	B.1	Date: 01/05/2023
Description of CAR				
<i>In the section B.1 of PSF, PO is requested to mention the intended use of each methodologies in the project activities.</i>				
Project Owner's response				Date: 11/07/2023
<i>The scopes of the methodologies are added to the Section B.1.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that required revisions has been made in the section B.1 of PSF.				
CAR is closed.				

CAR ID	07	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>In section B.2, applicability of tool" project emission from flaring, PO is requested to provide the justification as per the para 2 of the Tool as well.</i>				
<i>The justification provided for applicability condition para 3.a is not satisfactory. PO is requested to justify how the condition has been met.</i>				
<i>PO is requested to mention that whether the applicability condition has been met or not against each applicability condition.</i>				
Project Owner's response				Date: 11/07/2023
<i>Para 2, 3 and 4 is covered in applicability conditions.</i>				
<i>The para 3 justification is corrected.</i>				
Documentation provided by Project Owner				

Project Verification Report

GCC Project Verifier assessment	Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.	
CAR is closed.	

CAR ID	08	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>Under the applicability condition of "Methodological Tool --Emissions from solid waste disposal sites. (version 08.0.0)" The justification provided is not satisfactory. PO is requested to provide appropriate justification on how this condition has been met with references added in the footnote.</i>				
Project Owner's response				Date: 11/07/2023
<i>Para 3 is reasonably justifiable since the definition of the project already self explanatory. A reference is added to the justification as well. Also para 4 is justified with the reference of EIA.</i>				
Documentation provided by Project Owner				

GCC Project Verifier assessment	Date: 29/08/2023
In the justification provided, PO has mentioned that "This condition is applicable for ACM001 as per the article (a) and for ACM0022 as per the". The justification provided is found to be misleading and incomplete. Po is requested to correct the same.	
Alo, the justification provided for the applicability condition as per para 4 of tool is not satisfactory. PO is requested to provide appropriate justification.	
CAR is open.	

Project Owner's response	Date: 30/08/2023
Tool justification is corrected.	

GCC Project Verifier assessment	Date: 27/09/2023
As it has been observed that, Application A is used for methodology ACM0001, while application B is used for methodology ACM0022. PO is requested to state the calculation, PO is requested to provide more clarity on the justification, including the purpose of tool in calculation.	
PO is also requested to refer to the definition of residual waste and MSW provided in paragraph 9 of Tool 04 and revise the justification provided for para 5 as it is found to be unsatisfactory.	
CAR is open.	

Project Owner's response	Date: 08/10/2023
Application B is chosen. Justification is revised.	

GCC Project Verifier assessment	Date: 14/11/2023
PO has removed the methodology ACM0001 from the PSF. Application B has been used as the quantification approach as per methodology ACM0022.	
The Justification has also been provided accordingly.	
CAR is closed..	

CAR ID	09	Section no.	B.2	Date: 01/05/2023
Description of CL				
<i>In the section B.2 of the PSF, in the table provided for the applicability conditions, PO is required to state against each applicability condition of every methodology and tool if the applicability condition is applicable to the project activity or not and if applicable, it is requested to state is the condition has been met or not.</i>				
Project Owner's response				Date: 11/07/2023
<i>B2. Is reconstructed.</i>				
Documentation provided by Project Owner				

Project Verification Report

GCC Project Verifier assessment		Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.		
CAR is closed.		

CAR ID	10	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>In section B.2 of PSF, PO is requested to provide the applicability condition of each tool used in the project activity as mentioned in the section B.1 of the PSF</i>				
Project Owner's response				Date: 11/07/2023
<i>B.2. is revised.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.				
CAR is closed..				

CAR ID	11	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>it has been observed that in the section B.2 of PSF, for methodology ACM0001, the complete statement of applicability condition 1 (a) is not provided. PO is requested to provide the same.</i>				
<i>Moreover, the justification provided against each applicability condition 1(a), 1(b), 1(c), 1(d) does not seem to be satisfactory. PO is requested to provide appropriate justification against each applicability condition stating the reason for meeting/not meeting the applicability condition.</i>				
<i>Also, the applicability condition of the methodology ACM0001 para 3.(d) is requested to be justified as per the requirements provided in the Box 1 (page no 4 of methodology). The evidence for the same is also requested to be provided to the GCC verifier.</i>				
<i>Po is also requested to clarify on how the applicability condition paragraph 5 of methodology ACM0001 has been met. Since it has been observed that the project activity uses the combination of methodology ACM0001 and ACM0022.</i>				
Project Owner's response				Date: 11/07/2023
<i>ACM0001 and ACM0022 conditions and their justifications are revised.</i>				
Documentation provided by Project Owner				

GCC Project Verifier assessment		Date: 29/08/2023
<p>Po is requested to clarify how project owner can prove that the organic waste that would have been recycled in the absence of the project activity is not reduced during the project activity. The explanation should be substantiated with adequate evidences. Box 1 of the methodology should be referred for providing justification.</p> <p>Also, in the Methodology ACM0001 applicability condition 4(d). PO has mentioned that " The project also uses LFG from a greenfield SWDS which was not there prior to the project activity. Hence (d) is not applicable.". If the project activity has a greenfield SWDS component, the applicability condition is applicable. .Appropriateness of baseline scenario to be clarified based on the scope and applicability of the methodology.</p> <p>CAR is open.</p>		
Project Owner's response		Date: 30/08/2023
<p>Tool justification is corrected.</p> <ol style="list-style-type: none"> As per the box 1, it should be indicated that there is a composting facility in the baseline scenario or not? As per the knowledge of the area which has no composting facility prior to project activity, it is indicated that "The project activity generates electricity through LFG and biomethane via anaerobic digester and do not reduce the amount of organic waste that would be recycled since there was no composting facility that would recycle the organic waste prior to the project activity¹³. This condition is met." <p style="margin-left: 40px;">For 3(d) of ACM0001.</p> For 4(d) it was mistakenly considered as project activity before. However, 4(d) indicates the conditions for "baseline scenario" Since there is no LFG capturing in the baseline scenario, the statement is changed as follow: <p style="margin-left: 40px;">"In the baseline scenario, there was no LFG capturing from a greenfield existing SWDS. Hence (d) is not applicable."</p> 		
GCC Project Verifier assessment		Date: 27/09/2023
<p>PO has provided footnote 34, which is found to be missing in PSF. PO has not provided justification for any of the condition described in the box 1 of methodology ACM0001. PO is requested to provide the same in PSF. Relevant evidences is also requested to be provided to GCC verifier</p> <p>The justification provided for applicability condition 4(b) is not acceptable. PO is requested to revise.</p> <p>CAR is open.</p>		
Project Owner's response		Date: 08/10/2023
<p><i>The methodology ACM0001 is removed.</i></p>		
GCC Project Verifier assessment		Date: 27/09/2023
<p>PO has removed methodology ACM0001 and its application in the PSF.</p> <p>CAR is closed.</p>		

CAR ID	12	Section no.	B.2	Date: 01/05/2023
Description of CAR				

Project Verification Report

<i>In section B.2, applicability of tool" project emission from flaring, PO is requested to provide the justification as per the para 2 of the Tool as well.</i>	
<i>The justification provided for applicability condition para 3.a is not satisfactory. PO is requested to justify how the condition has been met. PO is requested to mention that whether the applicability condition has been met or not against each applicability condition.</i>	
Project Owner's response	Date: 11/07/2023
<i>The para 3 is rejustified please review. The applicability conditions are revised.</i>	
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.	
CAR is closed.	

CAR ID	13	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>In the section B.2 of PSF, applicability of Tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation". PO is requested to add the applicability paragraph mentioned in the tool. Moreover PO is requested to mention which scenario has been applicable under the applicability condition para 5 of the tool.</i>				
Project Owner's response				Date: 11/07/2023
<i>Tool 05 is revised as per comment.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.				
CAR is closed.				

CAR ID	14	Section no.	B.2	Date: 01/05/2023
Description of CAR				
<i>In section B.2 of PSF, applicability condition of Tool to determine the mass flow of greenhouse gas in gaseous stream, PO is requested to add the applicablity condition paragragh number as per the tool. Moreover the justification provided for applicability conditoin ara 7 of the tool does not refer to to the underlying methodology as required . Po is requested to provide appropriate justification.</i>				
Project Owner's response				Date: 11/07/2023
<i>B.2. is revised.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 29/08/2023
It has been observed that the PSF has been revised as per the above comments which is deemed to be acceptable to GCC verifier.				
CAR is closed.				

CAR ID	15	Section no.	B.3	Date: 01/05/2023
Description of CL				

<i>It has been observed that the project activity involves usage of LFG and generation of electricity through power generation source and supplying electricity to the national grid.</i>	
<i>However, in the section B.3 of the PSF, the project boundary identified is provided as "The spatial extent of the project boundary is the site of the project activity where the waste is treated with anaerobic digester and produce biomethane, and LFG is used and also connected to the energy system, which is the national grid system.". The provided statement does not indicate a clear indication of the project boundary.</i>	
<i>PO is also requested to demonstrate and justify how the identified project boundary is in compliance with the section 5.1 of methodology ACM0001 and section 5.2 of methodology ACM0022</i>	
Project Owner's response	Date: 11/07/2023
<i>The statement is corrected and methodology sections are justified to demonstrate how the emission included/excluded table is referenced.</i>	
Documentation provided by Project Owner	
GCC Project Verifier assessment	
Date: 29/08/2023	
As per para 28 of methodology ACm0022 version 3.0, Project participants shall demonstrate that sufficient landfill capacity would be available to dispose waste at a SWDS with a comparable annual waste acceptance rate and with the same operating lifetime as the project activity. PO has not identified the same in the project boundary of the project activity. PO is requested to provide the project boundary as per the applicable methodologies.	
CAR is open.	
Project Owner's response	Date: 30/08/2023
Tool justification is corrected.	
GCC Project Verifier assessment	Date: 27/09/2023
It has been observed that PO has provided justification which is deemed to be acceptable to GCC verifier.	
PO is requested to provide the waste characterization report with the relevant text highlighted.	
CAR is open.	
Project Owner's response	Date: 24/10/2023
<i>Please see folder "24: Solid waste characterization"</i>	
GCC Project Verifier assessment	Date: 14/11/2023
PO has provided the waste characterization report to GCC verifier.	
CAR is closed..	

CAR ID	16	Section no.	B.3	Date: 01/05/2023
Description of CL				
<i>It has been observed that the table provided in the section B.3 of the PSF is not consistent with the table provided in the section 5.1 of methodology ACM0001. PO is requested to revise the table as per the applicable methodology. Moreover the table for Emission sources included in or excluded from the project boundary as provided in the section 5.2 of methodology ACM0022 is not given in the PSF. Po is requested to provide the same.</i>				
Project Owner's response				Date: 11/07/2023
<i>The statement is corrected and methodology sections are justified to demonstrate how the emission included/excluded table is referenced.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				
Date: 29/08/2023				
The table provided for the project boundary does not include the project boundary of methodology ACM0022. PO is requested to refer to table 3 of methodology AcM0022 version 3.0 and incorporate the same in PSF as applicable.				
CAR is open.				

Project Owner's response **Date:** 30/08/2023

Referral in PSF:

The ACM0022, Section 5.3, para 31, table 3.

¶

28. The spatial extent of the project boundary is the SWDS where the waste is disposed of in the baseline, 12 anaerobic lagoons or sludge pits treating organic wastewater in the baseline, and the site of the alternative waste treatment process(es). The boundary also includes on-site electricity and/or heat generation and use, on-site fuel use and the wastewater treatment plant used to treat the wastewater by-products of the alternative waste treatment process(es). The project boundary does not include facilities for waste collection and transport. The project boundary has a SWDS and an alternative treatment which corresponds to the Table 2 below as shown.

¶

Table 2. Specific applicability conditions for the different waste treatment processes

Waste treatment option under the project activity	Applicable types of wastes that may be treated	Applicable products and their use	Applicable waste by-products	Specific applicability conditions
Composting or co-composting	Types of waste as specified in the scope and applicability section of "TOOL 13: Project and leakage emissions from composting"; Wastewater; Wastewater discharge	Compost: any use applicable	Non-biodegradable materials that may have market value (i.e. glass, metals and plastics); Wastewater discharge	Any applicability conditions specified in "TOOL 13: Project and leakage emissions from composting"
Anaerobic digestion	Wastewater; Fresh waste; Wastewater discharge	Biogas may be flared, used to generate electricity or heat, and/or upgraded and distributed in a natural gas distribution grid	Non-biodegradable materials that may have market value (i.e. glass, metals and plastics); Wastewater discharge; Dioxinate	Any applicability conditions specified in "TOOL 14: Project and leakage emissions from anaerobic digesters"
Thermal treatment	Fresh waste	RDF/SB: any use is applicable	Non-biodegradable materials that may	-

The project boundary applies Table 3. The additional clarifications are included in the PSF.

GCC Project Verifier assessment **Date:** 27/09/2023

In the project boundary table, PO is requested to add the emission from anaerobic lagoons or sludge pits and emission from the waste treatment processes as provided in the table 3 of methodology ACM0022 as it is found to be missing in PSF.

CAR is open.

Project Owner's response **Date:** 08/10/2023

B.3. Boundary table is revised.

GCC Project Verifier assessment **Date:** 14/11/2023

PO is requested to maintain the consistency of data between the table provided in section B.3 of PSF and table 3 of methodology ACM0022. PO is requested to provide yes as response to only the gas included in the baseline or project emissions as it has been observed that PO has provided emissions from fossil fuel consumptions has been given as a GHG source while the same is not calculated or included in the project activity.

CAR is open.

Project Owner's response **Date:** 30/11/2023

B.3. Boundary table is revised.

GCC Project Verifier assessment **Date:** 05/12/2023

It has been observed that PO has revised the table B.3 accordingly and only the gases included in baseline and project emissions are provided in the project boundary.

CAR is closed.

CAR ID 17 **Section no.** B.4 **Date:** 01/05/2023

Description of CL

In the section B.4 of the PSF, PO is requested to demonstrate and justify how the baseline scenario has been established as per the para 5.3 of methodology ACM0001 and para 5.1 of methodology ACM0022.

Project Owner's response **Date:** 11/07/2023

<i>Revised accordingly.</i>	
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: 29/08/2023
<p>In the section B.4 of PSF, PO has not demonstrated the baseline scenario satisfactorily. Methodology ACM0001 version 19.0 provide two options for the demonstration of baseline scenario, (a) through "simplified procedures to identify the baseline scenario and demonstrate additionality" and (b) Procedure according to the combined tool to identify the baseline scenario and demonstrate additionality". Po has mentioned in the section that the identification of the baseline scenario shall be done following the latest version of CDM tool "Combined tool to identify the baseline scenario and demonstrate additionality", while the baseline has been identified as per the para 22 and 23 which is as per the simplified procedure to identify the baseline scenario. This discrepancy shall be rectified. Also the baseline scenario of methodology ACM0022 version 3.0 has not been demonstrated in the section. PO is requested to demonstrate it as well.</p> <p>Moreover, in the section PO has mentioned that "Project activities involving the generation electricity for captive consumption". PO is requested to clarify the relevance of the statement as the generated electricity is supplied to the national grid.</p> <p>CAR is open.</p>	
Project Owner's response	Date: 30/08/2023
<p>The sentence is removed. The tool 01 is removed. ACM0022 version 3.0 is also added to Baseline scenario.</p>	
GCC Project Verifier assessment	Date: 27/09/2023
<p>Baseline identification as per ACM0001</p> <ol style="list-style-type: none"> As per the methodology ACM0001 para 20, PO can either choose "Procedure for the selection of the most plausible baseline scenario and demonstrate additionality" as explained in para 21 to 24 of the methodology, or through "Procedures according to the "Combined tool to identify the baseline scenario and demonstrate additionality"" as explained in para 25 to 28 of the methodology. PO in the PSF mentioned that the "simplified procedure to identify the baseline scenario and demonstrate additionality" has been followed, in which case, only the para 21 to 24 of the methodology should have been considered to demonstrate Baseline scenario, instead, PO has demonstrated the baseline using para 25 to 28 as well. PO is requested to clarify the use of two different baseline selection procedure. Moreover, below the table, PO has stated that "The baseline scenario includes the disposal of the waste in an existing unmanaged SWDS without the capture and/or flaring of landfill gas, resulting in the atmospheric release of LFG. The substitution of the electricity generated by grid-connected power plants, thereby reducing the overall greenhouse gas emissions.". The provided baseline statement is requested to be made consistent with the baseline identified in para 22 and 23 of the methodology. <p>Baseline identification as per ACM0022</p> <ol style="list-style-type: none"> It has been observed that, for the demonstration of baseline for the methodology ACM0022 version 03.0 as described in the section B.4 of the PSF is not in compliance with the methodology requirement. <p>PO has only provided justification for the applicability of para 16 to 27 of methodology ACM0022 version 03.0, which does not define the baseline scenario. As per the methodology, the baseline should be identified using the CDM TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality". And as per the tool 02 para 2, the following steps should be used for identification of baseline scenario and demonstration of additionality</p> <ol style="list-style-type: none"> STEP 0. Demonstration that a proposed project activity is the first-of-its-kind; STEP 1. Identification of alternative scenarios; STEP 2. Barrier analysis; STEP 3. Investment analysis (if applicable); STEP 4. Common practice analysis. 	

<p>It is found that PO has not followed any of the steps for identifying the baseline and to demonstrate additionality as per methodology ACM0022 version 03.0. Para 4 of the tool 02 states that "The tool is applicable to all types of proposed project activities. However, in some cases, methodologies referring to this tool may require adjustments or additional explanations as per the guidance in the respective methodologies. This could include, inter alia, a listing of relevant alternative scenarios that should be considered in Step 1, any relevant types of barriers other than those presented in this tool and guidance on how common practice should be established.", The methodology para 16 only describes the alternative scenarios to be used in the step 1 of tool 02. Therefore PO is requested to demonstrate the baseline identification and additionality as per the methodology requirement.</p>	
<p>CAR is open.</p>	
<p>Project Owner's response</p>	<p>Date: 08/10/2023</p>
<p>1. Baseline scenario is revised. ACM0001 is removed and the demonstration of additionality and baseline scenario is corrected as per ACM0022</p>	
<p>GCC Project Verifier assessment</p>	<p>Date: 14/11/2023</p>
<p>PO has removed the application of methodology ACM0001 from the PSF. The additionality has been demonstrated as per methodology ACM0022 and CDM tool 02.</p>	
<p>CAR is closed.</p>	

CAR ID	18	Section no.	B.5	Date:	01/05/2023
Description of CAR					
<p><i>In the section B.5, PO is requested to provide the source of every parameters including in the IRR calculation.</i></p> <p><i>Moreover, the benchmark identified (defined by World bank) is requested to be revised. Since the provided benchmark is not applicable as per the para 19 of Tool 27.</i></p> <p><i>The investment analysis and common practice analysis is requested to be revised as per the revised generation license.</i></p>					
Project Owner's response					Date: 11/07/2023
<p><i>Due to the amended license the installed capacity is changed to 5.656 MWe. Hence the project is applicable for Tool 32 "Positive List of Technologies" that excludes the necessity of Demonstration of Additionality.</i></p>					
Documentation provided by Project Owner					
GCC Project Verifier assessment					Date: 29/08/2023
<p>In the section B.5, Po has demonstrated the additionality of methodology ACM0001 version 19.0 through tool 32, however, the additionality of methodology ACM0022 version 04.0 has not been demonstrated as per the methodology requirement. Po is requested to add the same.</p>					
<p>CAR is open.</p>					
Project Owner's response					Date: 30/08/2023
<p>Tool justification is corrected.</p>					
GCC Project Verifier assessment					Date: 20/09/2023
<p>In the section B.5 of PSF, PO has mentioned that "<i>For demonstrate additionality, section 5.1 Simplified procedures to identify the baseline scenario and demonstrate additionality of "Version 3.0 "Alternative waste treatment process" was followed. According to the paragraph 25, Project activities implementing greenfield composting facilities for the treatment of MSW are deemed automatically additional when any of conditions below is fulfilled"</i>.</p> <p>The project activity uses Anaerobic digestion as the waste treatment option using fresh waste as per the section B.3 of PSF, which is also in compliance with the table 2 of methodology ACM0022. Compositing is not included in the project activity, therefore PO is requested to clarify the relevance of this statement. The additionality for methodology should be demonstrated through Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality"</p>					
<p>CAR is open.</p>					

Project Verification Report

Project Owner's response	Date: 08/10/2023
The PSF is revised and demonstration of additionality is corrected..	
GCC Project Verifier assessment	Date: 20/10/2023
PO has removed the application of methodology ACM0001 from the PSF. The additionality has been demonstrated as per methodology ACM0022 and CDM tool 02.	
CAR is closed.	

CAR ID	19	Section no.	B.6.2	Date:	01/05/2023
Description of CAR					
<p><i>In section B.6.2 and B.7.1 of the PSF, PO is requested to complete the data/parameter table with all the columns filled with appropriate responses. As it has been observed that an appropriate source has not been provided. PO is requested to provide the proper reference to the value used. Also the measuring frequency of parameters has been found to be blank for parameters such as EGpjy, PO is requested to provide the same.</i></p> <p><i>Moreover, the data unit has been left blank for most of the parameters. Po is requested to complete the table with appropriate responses. The serial number of measuring instruments with their calibration dates and frequencies are also requested to be added.</i></p>					
Project Owner's response					Date: 11/07/2023
ER calculation and related sections are revised.					
Documentation provided by Project Owner					
GCC Project Verifier assessment					Date: 29/08/2023
PO has provided an equation and its description between section B.6 and B.6.1 of PSF. The relevance of the equation in that section to be clarified in line with the PSF template guideline.					
PO is requested to refer to the finding below (CAR20) and provide all the missing parameters in the section B.6.2 and B.7.1 of the PSF.					
The serial number of the flow meters is to be included.					
It has been observed that the quantification procedures of the GHG emission reduction has not been documented in the PSF appropriately. Similarly, the data fixed ante and data monitored related to these quantification procedures is also not documented in section B.6.2 and B.7.1 of PSF. Therefore PO is requested to PSF accordingly and document the monitoring procedures of all the required parameters.					
CAR is open.					
Project Owner's response					Date: 30/08/2023
The equation is removed. Please specify missing parameters Serial numbers of the flowmeter is provided. All equations are assessed and the PSF is revised. Please direct the request to a specific point for missing parameters and other missing points.					
GCC Project Verifier assessment					Date: 27/09/2023
It has been observed that PO has revised the PSF accordingly.					
CAR is closed					

CAR ID	20	Section no.	B.6.2	Date:	01/05/2023
Description of CAR					
<p><i>1. In section B.6.1 of PSF, the baseline emission stated to be made consistent with the baseline identified in section B.4 of PSF. The calculation procedure explained below should also be made consistent with the baseline stated above. The explanation of the baseline, as well as project and leakage emissions in line with the methodology to be provided. Po is also requested to clearly state each equations used in baseline,</i></p>					

project and leakage emissions.

Para 36 and 37 of PSF template guideline to be followed while filling this section

2. The sample calculation of all the equation used is to be provided in section B.6.3 of PSF

3. The baseline emission calculation as per methodology acm0022(para 32) is found to be missing in PSF.

4. It has been observed that the project emission and leakage has not been documented as per the methodology requirement in the PSF section B.6. The project emission associated with methodology ACM0022 should be demonstrated as per equation 17 and project emission associated with methodology ACM0001 should be demonstrated using equation 22. Leakage emission associated with methodology ACM0022 should be demonstrated using equation 32.

5. In page number 58 of PSF, for Ex post determination of FCH₄,P_J,y and referring to para 14 of CDM tool 08, “for the determination of ex post determination of FCH₄P_JY, Project owner should document in the PSF which option is applied (as per table 2 of tool). Fi,t should be calculated following the steps/guidance described for each option below(table 2 of tool 08)”. The requirements in the tool is also requested to apply and document in PSF accordingly.

6. In page number 58 of PSF, for ex post determination of FCH₄P_JY, PO is requested to clarify why FCH₄P_JY is given for LFG used for flaring. It should be FCH₄flared.

7. It has been observed that PO has not considered the flaring in the quantification of GHG emission. PO has mentioned in the section A.3 of PSF that “Project owner also has installed a flare. This ensure that the LFG, which could not be combusted in the power generation units, is destroyed. The flare unit provides conditions for high temperature combustion to effectively destroy methane with other combustible LFG components and end up with low GHG emissions.” Any situation which leads to unintended emission is not addressed. Po is requested to address the emissions from flaring in the PSF.

8. The ex-ante estimation of parameter FCH₄P_JY is carried out through equation 5 , para 37 of methodology ACM001 version 19.0. PO is requested to clarify why it has not been used in the ex ante estimation.

9. In page number 60 of PSF, for Baseline emissions associated with electricity generation (BEEC,y), As per CDM tool 05 para 14, Project participants should document transparently in the CDM-PDD and in monitoring reports which sources of electricity consumption are calculated with this tool and, for each source, which scenario (A, B or C, as described in Section 2.2, paragraph 5 above) applies. PO has not documented the same in the PSF and therefore, PO is requested to document the same in PSF. The reference to the equation to the tool 05 is also requested to be added.

PO is requested to provide response to all the above comments.

CAR is open.

Project Owner’s response

Date: 11/07/2023

- 1. The findings do not specify the problem in the PSf. As per the quidelines and methodologies all necessary equations and references are added and each step is explicitly shown in the Er calculation sheet.*
- 2. Every equation is indicated in the psf and ER sheet is referred for the calculations.*
- 3. The para 32 is added to PSF.*
- 4. Equations and steps of both methodology are included.*
- 5. Added*
- 6. Corrected.*
- 7. Since the flare device is equipped for emergency situations only, PE_{flare},y shall also be accounted as zero.*
- 8. Added.*
- 9. The calculations for baseline emission from electricity generation is added to Section B.6.1 and 6.2*

Documentation provided by Project Owner	
CC Project Verifier assessment	Date: 29/08/2023
<p>A. In section B.6.1 of PSF, PO has provided the methodological choices for the baseline emission for waste management activities, but the methodological choice of the baseline emission from electricity generation is not provided. PO is requested to provide the same.</p> <p>Also, in the section B.6.1 of PSF, PO has provided the baseline emission calculation under the heading "project emissions". PO is requested to rectify.</p> <p>B. For the demonstration of baseline emission from methane from SWDS as per the methodology ACM0022 in section B.6.1 of PSF, para 36 of methodology ACM0022 has been used. Para 36 of the methodology is used for the determination of baseline emission from organic wastewater ($BE_{ww,t,y}$), which is not considered as a baseline emission from the project activity. The baseline emission of methane from SWDS ($BE_{CH_4,t,y}$) is determined through para 33 of methodology ACM0022 using equation 1 or equation 2 provided in the para 17 of Tool 04. PO is requested to clarify on this incompliance with the methodology requirement.</p> <p>C. In the section B.6.1, for the determination of baseline emission from methane using the methodology ACM0001, in the procedure for Ex post determination of FCH_4,PJ,y, PO has stated that LFG is not sent for flaring, and therefore the baseline emission from amount of methane in the LFG which is destroyed by flaring ($FCH_4,flared,y$) is not considered in the baseline calculation. PO has stated in the section A.3 of the PSF that a flaring unit is a part of the project activity. Therefore PO is requested to add the calculation for the determination of FCH_4,y in the PSF.</p> <p>Also, the ex post determination of FCH_4,PJ,y in the PSF does not contain the calculation procedure for $FCH_4,flared,y$ and FCH_4,EL,y as provided in the para 32 and 34 of methodology ACM0001. PO is requested to provide the same.</p> <p>D. In the section B.6.1, for the determination of baseline emission from methane using the methodology ACM0001, in the procedure for Ex ante estimation of FCH_4,PJ,y, PO has stated that "As per ACM0001 "Flaring or use of landfill gas" version 19.0,- FCH_4,EL,y are determined using the Tool 08 "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" version 03.0.0. ". PO is requested to clarify the relevance of this statement in this section.</p> <p>Also, in the same heading, PO has stated that "The mass flow of $BE_{CH_4,y}$, generated via anaerobic digesters is determined through measurement of the flow and volumetric fraction of the gaseous stream. The "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" version 03 provides 6 different ways to make these measurements and the corresponding calculation option for F_i,t". Referring to para 38 of methodology ACM0001, $BE_{CH_4,SWDS,y}$ is determined using the methodological tool "Emissions from solid waste disposal sites". PO is requested to revise the calculation to comply with the methodology requirement.</p> <p>E. In section B.6.1, PO has provided the calculation procedure for Baseline emissions associated with electricity generation ($BE_{EC,y}$). But PO has not provided any methodology references in the calculation. PO is requested to provide the basis of the calculation with reference to applicable methodology.</p> <p>F. Under the heading "Project emissions from use of electricity ($PE_{EC,y}$)", the paragraphs are found to be repeating. PO is requested to rectify. Also, PO is requested to state how the compliance with para 19 of tool 05 has been met in the calculation of $PE_{EC,y}$.</p> <p>G. In the section B.6.1 of PSF, under the project emission of ACM0022, PO has stated that "In addition, since the flare device is equipped for emergency situations only, $PE_{flare,y}$ shall also be accounted as zero.". PO in section A.3 stated that the project activity include a flare unit. PO is requested to clarify how it can be ensured that the project emission from flare can be considered as zero. PO is requested to provide the calculation procedure for $PE_{flare,y}$ as well.</p> <p>H. In section B.6.1, page 63 of PSF clean version, PO has stated that "Accordingly, project emissions</p>	

associated with the anaerobic digester in year y (PEAD,y) is equivalent to project emissions of methane from the anaerobic digester in year y (PECH4,y) and Project emissions from electricity consumption associated with the anaerobic digester in year y (t CO_{2e}) as follows:". PO is requested to clarify the relevance of the statement "project emission from electricity consumption associated with the anaerobic digester.

Moreover , PO is requested to provide the calculation procedure for Quantity of methane produced in the anaerobic digester in year y (QCH4,y) under the calculation for Project emissions associated with the anaerobic digester in year y (PEAD,y) ,

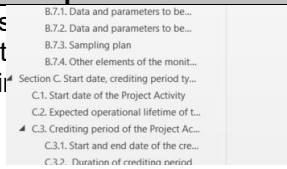
I. PO has also stated that the leakage emission associated with anaerobic digesters are not considered since it is already calculated in project emissions. PO is requested to demonstrate the leakage emission under ACM0022 referring to the section 6.2 of tool14 and state how the provided statement is complying with the Tool 14.

CAR is open.

Project Owner's response

Date: 30/08/2023

A. Please see the screenshot below for the response to the comment.



As per the para 5 of the tool 05, if emissions are calculated for electricity consumption, the tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption:
 (a) Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer.
 The electricity in the project area and in the host country of the project. Türkiye, is purchased from-

- B. The methodological tool and the calculation is corrected in B.1. and B.2.
- C. ACM0001 is removed.
- D. ACM0001 removed.
- E. Methodology references are added to the baseline calculation from electricity generation.
- F. Corrected.
- G. Calculation procedure for flaring is added.
- H. Sentence is corrected and the Qch4 calculation is added.
- I. Leakage emission calculation is corrected.

GCC Project Verifier assessment

Date: 27/09/2023

It has been observed that PO has removed the application of methodology ACM0001 and revised PSF. Based on the assessment of the latest PSF, GCC verifier has observed the following.

1. In the section B.6.1 of PSF, under "Determining the model correction factor ϕ_y , PO is requested to state how the baseline emission will be determined as per the options provided in table 2 and para 19 of Tool 04.
2. In section B.6.1 of PSF, under "Determining the amounts of waste types j disposed in the SWDS (W_{j,x} or W_{j,i})", PO has copy pasted the statement from methodology without providing any justification on how the condition is applicable to the project activity. PO is requested to state if only one type or different type of waste is prevented from disposal. Also, PO is requested to state how the para 28 of tool 04 has been taken into consideration for calculating the parameter "p_{j,x}".
3. The categories of waste provided in section B.6.1 under heading "Determining the fraction of DOC that decomposes in the SWDS (DOC_{f,y})" and "Determining the amounts of waste types j disposed in the SWDS (W_{j,x} or W_{j,i})" are not consistent. PO is requested to provide consistent categorization throughout PSF.
4. PO is requested to provide evidence to prove that there is no water table above the bottom of the SWDS. (Procedure to determine the methane correction factor (MCF_y))
5. Considering that the Gas engines produces electricity from the gases from all the sources, including LFG and anaerobic digesters. It has been observed that PO has not provided how the electricity from anaerobic digester gases will be monitored separately in In section B.6.1, "Baseline emissions

associated with electricity generation (BEEC,y)". PO is requested to justify how the electricity generation will be bifurcated and used for calculation.

6. in section B.6.1, under heading "Baseline emissions associated with electricity generation (BEEC,y)", PO is requested to state how the parameter $feel/K/I,y$ will be determined as given in the para 6.2.1.1 of Tool 05. version 3.0. as the parameter provided in section B.6.2 of PSF is found to be "EFC02,grid,y".
7. The parameter provided in section B.7.2 of PSF is $EGpj,y$ while in section B.6.1, it is represented as $ECBL,K,Y$. PO is requested to provide the justification for the inconsistent representation of the same parameter in the PSF.
8. PO has mentioned that "(b) $ECBL,k,y$ in the tool is equivalent to the net amount of electricity generated using LFG in year y ($EGPJ,y$)". Since LFG is not considered for the project activity, PO is requested to clarify the relevance of this statement.
9. In section B.6.1 of PSF, under the heading "Project emissions associated with the anaerobic digester in year y ($PEAD,y$)", PO has mentioned the following. "Although, energy requirement for the plant will be supplied from national grid, possible emissions caused by the generator could be calculated and added to the project emission in related year when it is needed. There are two ways to calculate PE,FC,y which are Option A and Option B stated in "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion version 02. Option A should be the preferred approach, if the necessary data is available. In addition, the emissions are negligible when the emission reductions from the Diesel Generator are lower than 1% of the total emission reductions; otherwise, the emissions will be calculated". PO is requested to clarify the relevance of this statement provided that such requirements is not given in tool 05 or tool 14.
10. PO has also mentioned that "For the proposed project activity will consume electricity from the national grid for internal consumption of electricity at the plant, including the digesters, $PEEC,y$ in this equation shall be regarded as zero since the calculation of project emissions from electricity consumption and fossil fuel combustion ($PEEC/FC,y$) that will be made below is going to consist of $PEEC,y$ ". PO has provided calculation procedure for electricity use and flaring of Biogas in the section below but has not considered in the equation $PEAD,y = PECH4,y$. PO is requested to revise the provided equation.
11. In section B.6.1 of PSF, under the heading "Project emissions associated with the anaerobic digester in year y ($PEAD,y$)" and "Project emissions from flaring of biogas", PO is requested to state how the requirement as per para 23 and 24 of CDM Tool 08 version 3.0 has been met with.
12. In section B.6.1, "project emission from use of electricity", PO has provided the reference to para 65 of applied methodology. However, the applied methodology para 65 does not state any such statement, PO is requested to provide revise the paragraph reference.
13. In section B.6.1, "Leakage emissions", under step 1, PO has not provided which among the available options (a and b as per para 26 of tool14) is applicable to the project activity. PO is requested to add the same. Also, the procedure for determining $QCH4 y$ provided in equation 8 of tool14 is not given in PSF. PO is also not requested to justify why the $LEstorage,y$ value of solid digestate is not considered for calculation.

CAR is open.

Project Owner's response

Date: 24/10/2023

1. Determining of model correction factor ϕy revised and model correction factor for baseline emission

<p>calculations updated as 0.85. In depth explanations added the title under “Determining the model correction factor (ϕ_y)” of revised PSF file. Relatedly, baseline emission values updated.</p> <ol style="list-style-type: none"> 2. As per Solid Waste Characterization Report (page 3), project gather 600 tonne mixed MSW daily. Hence it becomes 219.000 tonnes in a year. In the Table 3 of the report, the characterization of wastes of this amount given by percentages by each waste type (Table 4.3 in the related report). In fact, average fraction of waste types already calculated and given by Table 4.3 of this report (These fractions are representing the parameter “$p_{j,x}$”). Since the fraction ratios given in related report were given as “specific waste type weight/total waste weight”, values given in this report used could instead “$p_{j,x}$” for estimated calculation. Moreover, project owner separated wastes coming to project site and weight each type of waste. These real values will be used in monitoring terms to calculate “$p_{j,x}$”. 3. <i>DOC_(hazardous waste, waste electronic devices, ash) is added in the table.</i> 4. <i>Added in PSF.</i> 5. Related explanations added under heading “Baseline emissions associated with electricity generation (BEEC,y)” in section B.7.1. The ratio and methane contents LFG production and biogas production via anaerobic digesters will be used to exclude electricity production due to LFG installations. 6. Explanation under section B.6.1 under heading “Baseline emissions associated with electricity generation (BEEC,y)” revised since the older version mentions about the project emission calculation mistakenly. The parameter “EFEL,j/k/l,y” is related with project emissions and explanations on this parameter given under heading “Explanation under section B.6.1 under heading “Baseline emissions associated with electricity generation (BEEC,y)” revised since the older version mentions about the project emission calculation mistakenly. The parameter “EFEL,j/k/l,y” is related with project emissions and explanations on this parameter given under heading “Project emissions from use of electricity (PEEC,y)” which is equal to combined margin since the project use electricity from grid (Tool 05, Option A1, paragraph 19) 7. “ECBL,K,Y.” removed from the PSF file 8. Related statement deleted from the PSF. 9. Related statement deleted from the PSF. 10. Equation of PEAD,y revised as “$PE_{AD,y} = PE_{CH_4,y} + PE_{EC,y} + PE_{flare,y}$” in section B.6.1 and B.6.3 11. Temperature in digesters varies between 50-60 celcius. Hence Option A of Tool 8 could be chosen. In addition, project owner will provide actual temperature record during monitoring terms (related parameter <p>¶ Where digestate is liquid, as per the definitions section, or where a liquid fraction of mechanically separated digestate is stored, then choose between Options 1 or 2 to determine <i>LEstorage</i>. Option 2 is chosen for this project, as option 1 is based on monitored data while option 2 is based on default value. ¶</p> <p>¶ Option 2: Procedure using a default value¶</p>	<p>¶</p>
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GCC Project Verifier assessment	Date: 05/12/2023
<ol style="list-style-type: none"> 1. CAR is closed 2. CAR is closed 3. CAR is closed 4. CAR is closed 5. <ol style="list-style-type: none"> a. PO is requested to cross check the values used in the calculation provided in cell B5, tab “electricity generation” of ER sheet. b. PO has estimated the LFG generation from year 2020, and biogas from year 2021, while the start date of the project is from 25/10/2019. PO is requested to maintain consistency in the data selection. c. Based on the above corrections, PO is requested to revise the installed capacity, estimated electricity generation, ER and IRR calculations in ER sheet, IRR sheet and PSF. 6. CAR is closed 7. CAR is closed 8. CAR is closed 	

Project Verification Report

<p>9. CAR is closed</p> <p>10. It has been observed that PO has not provided the calculation procedure of PECH_{4,y} in PSF as given in para 23 of tool 14</p> <p>11. CAR is closed</p> <p>12. CAR is closed</p> <p>13. CAR is closed</p> <p>CAR is open</p>	
Project Owner's response	Date: 11/12/2023
<p>5. Electricity generation is corrected as 2022-2031 values to consider complete capacity of the plant and for the ease of calculation. All calculation has started from 2022 and the cumulative biogas calculation starts from 2022.</p> <p>10. Added.</p>	
GCC Project Verifier assessment	Date: 13/12/2023
<p>5. PO has corrected the calculation provided in cell B5, tab "electricity generation" of ER sheet, To maintain consistency of data selection, PO has selected the expected LFG and Bio methanization values from the year 2022. The installed capacity expected electricity generation and IRR input values remains the same.</p> <p>CAR is closed</p>	

CAR ID	21	Section no.	B.7.1	Date: 01/05/2023
Description of CAR				
<i>Referring to the GCC Environmental and social safeguards standard v.3.0, para 12 (c), PO is requested to provide the monitoring procedure for each E+ and S+ parameter identified harmful and harmless.</i>				
Project Owner's response				Date: 11/07/2023
<i>They are identified as Harmless if necessary they are identified as N/A as the table instruction implies. Hence B.7.2 is identified as N/A. B.7.1. Parameters are corrected accordingly (harmless and positive impacts are included.)</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 20/09/2023
<p>Referring to para 13 of GCC Environmental and social safeguard standard version 3.0 PO is requested to clarify if all the key environmental and social aspects provided in appendix 01 has been taken into considering among the E+ and S+ parameters.</p> <p>Po is requested to add the monitoring procedure of parameters "Project related knowledge disseminated" in section B.7.1 of PSF.</p> <p>CAR is open.</p>				
Project Owner's response				Date: 30/08/2023
<i>Corrected.</i>				
GCC Project Verifier assessment				Date: 27/09/2023
<i>It has been observed that PO has provided the E+ and S+ parameter as per the GCC Environmental and Social safeguards standard version 03.0 and the monitoring procedure of all the scores parameters is given in section B.7.1 of PSF.</i>				
<i>CAR is closed</i>				

CAR ID	22	Section no.	A.1	Date: 14/11/2023
Description of CAR				

<i>In the section A.1, PP has mentioned that "The baseline scenario is the same as the initial baseline scenario at the time of project start date.". PP is requested to state the exact baseline scenario. Established in section B.4 of PSF</i>				
Project Owner's response			Date: 30/11/2023	
<i>"In the absence of project activity, electricity would be generated through the operation of grid-connected power plants by the fossil fuel source, which is directly substituted by project activity. The baseline scenario/alternatives also include disposal of the organic waste at unmanaged SWDS, which results in methane release into the atmosphere which is also replaced by project activity with anaerobic treatment of the organic waste. " Added in the section A.1.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment			Date: 05/12/2023	
The baseline scenario has been added to the section A.1 of the PSF.				
CAR is closed				
CAR ID	23	Section no.	A.3	Date: 14/11/2023
Description of CAR				
<i>In the section A.3 of PSF, PP has mentioned that "for the proposed project activity the captured LFG from the existing SWDS will be excluded. Hence, the electricity generated from the biogas coming from the digesters corresponds to the 29,893 MWh and corresponding annual estimated emission reduction values are and 105,304 tCO₂ respectively". PP is requested to state in PSF how the bifurcation has been done.</i>				
<i>Also, PO has provided the details of 4 flow meters used in the project activity in section A.3 of PSF. PP is requested to state if the flow meters mentioned are fixed or portable.</i>				
Project Owner's response				Date: 30/11/2023
<i>The exclusion is explained briefly in B .6.1 and B.6.3. The flowmeters's propoties are stated.</i>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 05/12/2023
It has been observed that required explanation has been given in section A.3 of PSF.				
CAR is closed				
CAR ID	24	Section no.	B.1	Date: 14/11/2023
Description of CAR				
<i>PO is requested to include CDM tool 24 and 27 in section B.1 of PSF and provide its applicability condition and its justification</i>				
Project Owner's response				Date: 30/11/2023
Added under section B.1 Applicability conditions are also added under section B.2				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
It has been observed that PO has provided the applicability condition and its justification in section.1 of PSF.				
CAR is closed				
CAR ID	25	Section no.	B.4	Date: 14/11/2023
Description of CAR				

<p><i>In section B.4, PO has provided the following, "M1: The project needs carbon credit revenues due to the financial barriers. Hence, a is not applicable". PO is requested to clarify how this alternative scenario is deemed to be not applicable, as the financial viability can only be confirmed after investment analysis</i></p> <p><i>PO has not provided which among the alternative scenarios as per para 18 of methodology is applicable as alternative scenario for the project activity.</i></p>	
Project Owner's response	Date: 30/11/2023
<p>Alternative scenarios added under Step 1 of demonstration of additionality under a new heading "Step 1a (ongoing): Define alternatives to the proposed GCC project activity (as per ACM0022)"</p>	
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: 08/12/2023
<p>The baseline identification procedures provided by PO in section B.4 and B.5 is not consistent. PO is requested to provide consistent baseline identification procedures in both the sections of PSF.</p> <p>CAR is open.</p>	
Project Owner's response	Date: 11/12/2023
corrected	
GCC Project Verifier assessment	Date: 13/12/2023
<p><i>It has been observed that PO has provided consistent baseline identification procedure in section B.4 and B.5 of PSF.</i></p> <p><i>CAR is closed.</i></p>	

CAR ID	26	Section no.	B.5	Date: 14/11/2023
Description of CAR				
<p><i>Referring to para 4 of CDM tool 02 version 7.0, "The tool is applicable to all types of proposed project activities. However, in some cases, methodologies referring to this tool may require adjustments or additional explanations as per the guidance in the respective methodologies. This could include, inter alia, a listing of relevant alternative scenarios that should be considered in Step 1, any relevant types of barriers other than those presented in this tool and guidance on how common practice should be established.". Para 16 to 19 of methodology ACM0022 version 3.0 provides the guidance for choosing the alternatives.</i></p> <p><i>It has not observed that PO has not chose any of the applicable alternatives provided in para 16 to 19 of methodology in step 1 of demonstration of additionality. Therefore PO is requested to provide the same in PSF.</i></p>				
Project Owner's response				Date: 30/11/2023
<p>Alternative scenarios added under Step 1 of demonstration of additionality under a new heading "Step 1a (ongoing): Define alternatives to the proposed GCC project activity (as per ACM0022)"</p>				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
<p>It has been observed that PO has provided the alternative scenarios as per tool 02 and as per methodology separately in section B.5 of PSF.</p> <p>Also the last paragraph of "Step 1a (ongoing):" says that alternatives P1 and M6 are the possible alternatives, while the outcome of step 1 a says that scenarios M1, M8, P1, and P6 are possible alternative scenarios. PO is requested to justify the inconsistent approach used.</p> <p>PO is also requested to justify how each alternative is applicable/not applicable in PSF. The applicability of alternative M8 is to be justified.</p> <p>CAR is open</p>				
Project Owner's response				Date: 11/12/2023

Project Verification Report

<i>All B.4 justifications, stepwise approach of alternative baseline scenario identification and outcomes are corrected.</i>	
GCC Project Verifier assessment	Date: 13/12/2023
<i>It has been observed that the step 1 a of additionality demonstration has been corrected in PSF and alternatives provided are consistent with the applied methodology. PO has also provide the justification for the applicability or non applicability of each alternative in section B.4 of PSF.</i>	
CAR is closed	

CAR ID	27	Section no.	B.5	Date: 14/11/2023
Description of CAR				
<i>It has been observed that PO has not provided the step 2, barrier analysis in section B.5 of PSF. PO is requested to justify why barrier analysis is not used stating the requirement from tool 02. PO is requested to provide the barrier analysis otherwise.</i>				
Project Owner's response				Date: 30/11/2023
List of alternative scenarios to the project activity added in Step 1 of additionality with outcomes. Hence, the proposed project does not use barrier analysis as the additionality has been demonstrated in other steps (Tool 02 ver. 07; paragraph 18). Related explanation of barrier analysis in PSF is revised				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 05/12/2023
PO has provided the justification in PSF which is deemed to be acceptable to GCC verifier.				
CAR is closed				

CAR ID	28	Section no.	B.5	Date: 14/11/2023
Description of CAR				

1. Referring to para 30 of CDM tool 02, version 7.0, "Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the PDD, so that a reader can reproduce the analysis and obtain the same results. Refer to critical techno-economic parameters and assumptions (such as capital costs, fuel prices, lifetimes, and discount rate or cost of capital). Justify and/or cite assumptions in a manner that can be validated by the GCC verifier.". It has been observed that PO has not provided the details of all relevant assumptions in section B.5 of PSF. PO is requested to provide the same.
2. In investment analysis, PO has provided the world bank figures as the applied benchmark and equity IRR has been considered as financial indicator. As per para 15 of tool 27, benchmark supplied by relevant national authorities are to be used. PO is requested to clarify how the source follows the tool 27 is requested to use an appropriate source as benchmark.
3. It has not been stated the calculated IRR is post tax or pre tax, PO is requested to state the same.
4. Under step 2b, PO has stated that "Calculations for IRR were performed for integrated plant considering that the economic analysis is covering for both the plant and generation license also reflects the electricity generation and the installed capacity for the integrated system as well. The electricity tariff will also be evaluated over biogas energy production since the solar power plant is considered as an additive system". Po is requested to clarify the relevance of this statement.
5. PO has provided the following statement in step 2b of PSF
 "Investment decision date has been identified as the date of construction agreement."
 "Investment decision date for the Project was chosen as 07/12/2018 as per Letter of Commitment to Municipality of Biogas Power Plant. ". PO is requested to clarify which is the actual date of investment decision.
6. 5. As per para 10 of CDM Tool 27 version 11.0, Input values used in all investment analysis shall be valid and applicable at the time of the investment decision taken by the project participant.". Po is requested to clarify how the input data were available at the time of investment decision date.

Project Owner's response

Date: 30/11/2023

- 1-Each parameter is given in the PSF.
- 2-Worldbank document is prepared by the Türkiye based national standards. Details are added to B.5.
- 3-Stated in substep 2b and 2c
- 4-Statement is removed.
- 5-Investment decision date is considered as the letter since this reveals the first financial and official step towards implementation of the project activity as CDM start date is defined.
- 6-Input values's references are already cited. The date of the document is already stated as 2012 which is way before the investment decision date. More detail is added to section to support and clarify more.

GCC Project Verifier assessment			Date: 08/12/2023
<p>1. It has been observed that PO has provided the demonstration of step 3 of tool 02 appropriately. PO has not provided in PSF any justification of selection of appropriate analysis method as per tool 02. Since there are more than one alternatives has been identified,. Referring to para Para 31 of tool 02 "Present in the CDM-PDD submitted for validation a clear comparison of the financial indicator for all alternative scenarios and rank the alternative scenarios according to the financial indicator", PO has not provided a clear comparison of all the alternatives. PO is requested to provide the source of development fees provided in the IRR assumptions. PO is requested to provide the source of share of municipality provided in the IRR assumptions</p> <p>2. The justification provided by PO is deemed to be acceptable to GCC verifier.</p> <p>3. PO has clarified in PSF that post tax equity IRR is considered as financial indicator.</p> <p>4. Unrelated statement has been removed.</p> <p>5. PO has clarified the investment decision date as mentioned above.</p> <p>6. All the input values provided are found to be available at the time of invest decision date (Subject to closure of comment 1 above).</p> <p>CAR is open</p>			
Project Owner's response			Date: 11/12/2023
<p>1. Source of development fee is provided in IRR sheet. Source of municipality share is provided.</p>			
GCC Project Verifier assessment			Date: 13/12/2023
<p>1. It has been observed that PO has provided the justification of selection of alternative scenario and applicability for the necessity of comparison of alternatives in financial analysis in section B.4 of PSF. The source of development fee and share of municipality has been added in IRR sheet.</p> <p>CAR is closed</p>			
CAR ID	29	Section no.	B.5
			Date: 14/11/2023
Description of CAR			
<p>1. PO is requested to provide the relevance of providing the statements regarding investment analysis in common practice analysis provided in section B.5 of PSF.</p> <p>2. In the step 2 of common practice, PO has mentioned that "Projects that apply the same measure as the proposed project have been determined to be all renewable energy projects and selected as the same type of energy source projects*. All of the selected plants deliver the same service, which is electricity generation are listed including thermal power plants.". PO is requested to clarify how the thermal power plants be included under renewable energy projects.</p> <p>3. PO has not stated the outcome of step 2 (c) of common practice analysis</p> <p>4. PO is requested to justify why step 2 (d) of common practice analysis is considered NA.</p> <p>5. PO has considered investment decision date for demonstrating the step 2 (f) of common practice analysis. As per tool 24, it should have been GSC date or start date of proposed project activity whichever is earlier. PO is requested to revise the step accordingly.</p> <p>6. PO is requested to clarify why fair value of the project activity assets are not included in cash inflow.</p> <p>7. PO is requested to provide the evidence of all input values provided in IRR calculation</p>			
Project Owner's response			Date: 30/11/2023

<ol style="list-style-type: none"> 1. Irrelevant statements are removed and corrected. 2. Outcome of "c" is revised 3. Outcome of "d" is revised 4. GSC was held on at 10.12.2020 as already indicated in Section G of the PSF. Hence there is no need for revision of "f" 5. : Investment decision date of the project is 07/12/2018 as per Letter of Commitment to Municipality. While GSC date is in 2022. It is obvious that GSC is later than the CDM start date being an A2 project. Clarification is also added anyways. 6. The final year of the project's cash flows do not include a fair value of assets at that point in time. The fair value is assumed to be zero at the end of the project's life As per the local depreciation legislation, depreciation period is 10 years for such equipment and therefore 10 year is used for financial analysis calculations and residual value is therefore assumed as "0". Financial analysis had been conducted for longer period for conservativeness and since despite depreciation and decrease in efficiency etc, plant is expected to operational after 10 years. 7. Evidences are already provided in section B.5. and the sheets in the IRR excel sheet.

Documentation provided by Project Owner
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GCC Project Verifier assessment	Date: 08/12/2023
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<ol style="list-style-type: none"> 1. 2. PO has revised the step to exclude thermal power and included only renewable energy power plants as the energy source. 3. Added in PSF 4. Added in PSF 5. The start date provided by PO in the common practice analysis (07/12/2018) is not consistent with the start date of project provided in section c.2 of PSF (25/10/2019. PO is requested to maintain consistent data selection. <p style="margin-left: 40px;">Also PO has provided reference to Bor Biogas Power Plant in step 2f of common practice analysis. PO is requested to clarify</p> <p style="margin-left: 40px;">PO is also requested to clarify how the power plants identified in step 3 has been confirmed.</p> <p>CAR is open.</p>

Project Owner's response	Date: 11/12/2023
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5. , Start date is corrected. Common practice analysis is also corrected accordingly. Irrelevant names are removed. Please see Common practice sheet for the details.

GCC Project Verifier assessment	Date: 13/12/2023
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PO has considered the start date as 25/10/2019) for common practice which is the actual start date of the project activity as per section C.2 of PSF.
CAR is closed

CAR ID	30	Section no.	B.6.2, B.7.1	Date: 14/11/2023
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Description of CAR

<p>The following data and parameter are not found in the Section B.6.2 of PSF</p> <ol style="list-style-type: none"> 1. F: Fraction of methane in the SWDS gas (Volume fraction) 2. $\eta_{flare,m}$ = Flare efficiency in the minute m (provided in equation 15 of tool 06 version 04.0) 3. fCH\$,default: Data/parameter table 1 of tool 14 <p>The following parameters are found to be missing in the section B.7.1 of PSF.</p> <ol style="list-style-type: none"> 1. V,i,t,db: As per data/parameter table 9 of tool 08 2. Density of greenhouse gas in the gaseous stream in time interval t. (monitored parameter provided in equation 5 of tool 08 version 3.0) 3. Pt, Pressure of the gaseous stream in time interval t: Data/parameter table 15 of tool 08 version 3.0
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Project Owner's response	Date: 30/11/2023
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<p>Relevant parameters added to sections B.6.2 and B.7.1</p> <ul style="list-style-type: none"> - “<i>fCH4,default</i>” is same as “<i>F</i>” since “<i>fCH4,default</i>” value used for determination of project emissions of methane from the anaerobic digester and fraction of methane is same under consideration of same digester unit. - In addition, “<i>Flame_m</i>” parameter is added to Section B.7.1 to choose the proper flare efficiency “<i>η_{flare,m}</i>” which is added to Section B.6.2 as a parameter <p>Density of gas stream calculated with temperature, pressure, and default values. Relevant explanations given under heading “project emissions from flaring” in section B.6.3. There is no need to add a parameter table for this one. Parameter tables for pressure and temperature are present in PSF.</p>			
<p>Documentation provided by Project Owner</p>			
<p>GCC Project Verifier assessment</p>			<p>Date: 08/12/2023</p>
<p>Data/parameter table of following are missing in the section B.6.2</p> <ol style="list-style-type: none"> 1. <i>F_w,ch4default</i>(Leakage emission) 2. <i>F_s,ch4default</i>(leakage emission) 3. <i>EF_{EPJY}</i> (project emission from electricity) 4. <i>F</i>: Fraction of methane in the SWDS gas (volume fraction) baseline emission from methane as given in tool 04 <p>The following parameter missing in section B.7.2</p> <ol style="list-style-type: none"> 1. <i>EC_{PJY}</i>: Quantity of electricity consumed by the project electricity consumption source <i>j</i> in year <i>y</i>, tool 05 <p>The value of first two parameter is provided in ER sheet but not represented as required in tool.</p> <p>CAR is open</p>			
<p>Project Owner’s response</p>			<p>Date: 11/12/2023</p>
<ol style="list-style-type: none"> 1. <i>Added</i> 2. <i>Added</i> 3. <i>Added</i> 4. <i>Added</i> <p style="margin-left: 40px;">- <i>EC_{PJY} is added.</i></p> <p style="margin-left: 40px;">- <i>First two parameter is corrected in ER sheet.</i></p>			
<p>GCC Project Verifier assessment</p>			<p>Date: 13/12/2023</p>
<p><i>It has been observed that PO has provided all the above mentioned parameters in appropriate section of PSF.</i></p> <p>CAR is closed</p>			
<p>CAR ID</p>	<p>31</p>	<p>Section no.</p>	<p>B.6.2</p>
<p>Date: 14/11/2023</p>			
<p>Description of CAR</p>			
<p>Referring to tool 04, section 6.4, data/parameter table 7.</p> <p>Document in the CDM-PDD the climatic conditions at the SWDS site (temperature, precipitation and, where applicable, evapotranspiration). Use long-term averages based on statistical data, where available. Provide references</p> <p>In section B.6.2, under the parameter <i>K_j</i>, PO is requested to provide a statement as per the above mentioned requirement including on how the rate of degradation and climatic condition has been chosen among the options available .</p>			

Project Owner's response	Date: 30/11/2023
MAP and MAT values taken from Turkish State of Meteorological Service open source release which indicates long term average conditions for Van Province. In addition PET value taken from an academic paper on related province. Hence these values were used to calculate indicators and chose related decay rate values for each type of waste. Relevant explanation added to Section B.6.2 in parameter table.	
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: 08/12/2023
PO has provided the explanation in section B.6.2 of PSF.	
CAR is closed.	

CAR ID	32	Section no.	B.6.1/B.6.3	Date: 14/11/2023
Description of CAR				
<i>It has been observed that the information provided in section B.6.1 and B.6.3 of PSF are exactly the same. PO has provided the approached and justification of methodological choices in section b.6.1 of PSF. In section B.6.3, PO is only requested to Provide a transparent ex-ante calculation of baseline emissions, project emission and leakage emissions expected during the crediting period of the Project Activity, applying all relevant equations provided in the applied methodology(ies) and, where applicable, the applied standardized baseline</i>				
Project Owner's response				Date: 30/11/2023
Both the sections were revised. The calculations removed from the section B.6.1. Unnecessary details of methodological choices removed from the section B.6.3				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
It has been observed that PO has provided the information in section B.6.1 and B.6.3 as per the PSF template requirement.				
CAR is closed.				

CAR ID	33	Section no.	B.7.1	Date: 14/11/2023
Description of CAR				
<i>As per para 33 of methodology, sampling is used to determine the fractions of different waste types is necessary for determining value for parameter "Wjx". Po is requested to provide the sampling procedure in section B.7.2 under the data/parameter table for parameter Wjx.</i>				
<i>The serial number and calibration dates and calibration frequency of weighbridge is also requested to be provided. Evidence of calibration frequency and calibration dates is requested to be provided to GCC verifier</i>				
Project Owner's response				Date: 30/11/2023
Project Approved EIA document (Table 23, page 63) gives detailed separation units of MSW (sorting of waste). Project does not have combustion unit and MSW do not contain biogenic or fossil matter. Hence there is no need to ash analysis for the waste sampling. Project weighted the sorted MSW and recorded the amount and fraction which are fed up to anaerobic digesters. Related explanation added to "additional comments" raw of the referred parameter in section B.7.1. Calibration document of weighbridge is to be provided during monitoring periods of the project activity.				
The calibration frequency of weighbridge and its related regulation added to table of the parameter.				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
The justification provided by PO is deemed to be acceptable to GCC verifier.				
CAR is closed				

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CAR ID	34	Section no.	B.7.1	Date: 14/11/2023
Description of CAR				
<i>It has been observed that in section B.7.1 of PSF, under parameter "φdefault", PO has not specified the value for baseline emissions. Therefore PO is requested to specify the value for baseline emissions.</i>				
Project Owner's response				Date: 30/11/2023
"φdefault specified as "0.85" with relevant explanations, references in revised PSF file for baseline emissions				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
PO has provided the value of baseline emission in the section B.7.1 of PSF.				
CAR is closed.				

CAR ID	35	Section no.	B.7.1	Date: 14/11/2023
Description of CAR				
<i>In section B.7.1, under the data/parameter table Tt,AD, PO has mentioned that the calibration of temperature meter will be provided. PO is requested to provide the details of the instruments used for measuring the temperature, and its calibration frequency with the related regulation if there is any. The data source is given as project owner. This is also requested to be revised with the exact source of monitoring of value.</i>				
Project Owner's response				Date: 30/11/2023
Details of the instruments are to be provided. The exact source is the project owner since the instruments calibrated, recorded, and read by project owner. There is no need to change this one. Calibration document will be provided during monitoring terms.				
Documentation provided by Project Owner				
Technical specification sheet of temperature meter				
GCC Project Verifier assessment				Date: 08/12/2023
PO will provide the same during monitoring.				
CAR is closed.				

CAR ID	36	Section no.	B.7.1	Date: 14/11/2023
Description of CAR				
<i>The unit of data/parameter Vt,db provided in section B.7.1 of PSF is not consistent with the Data.parameter table 8 provided in tool 08. PO is requested to correct the same. The calibration frequency of flow meter and its related regulation should be provided in the table</i>				
Project Owner's response				Date: 30/11/2023
The calibration frequency of flow meter and its related regulation added to table of the parameter. Unit of the parameter revised as per Tool 8				
Documentation provided by Project Owner				
GCC Project Verifier assessment				Date: 08/12/2023
Explanation has been provided by PO in section B.7.1 of PSF.				
CAR is closed				

Table 3. FARs from this Project Verification

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				

Project Verification Report

Project Owner's response	Date: DD/MM/YYYY
Documentation provided by Project Owner	
GCC Project Verifier assessment	Date: DD/MM/YYYY

Appendix 5. Matrix for Identifying Environmental Impacts, Establishing Safeguards and Performing Do-No-Harm Risk Assessments in the PSF and GCC verifier's conclusion

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards								Project Owner's Conclusion		GCC Project Verifier's Conclusion (To be included in Project Verification Report only)	
		Description of Impact <i>(positive or negative)</i>	Legal/voluntary corporate requirement / regulatory/voluntary corporate threshold Limits	Do-No-Harm Risk Assessment (choose which ever is applicable)			Risk Mitigation Action Plans for aspects marked as Harmful		Performance indicator for monitoring of impact		Ex-ante scoring of environmental impact	Explanation of the Conclusion	3 rd Party Audit
				Not Applicable	Harmless	Harmful	Operational Controls	Program of Risk Management Actions	Monitoring parameter frequency and of monitoring	Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)			
Environmental Aspects on the identified categories ¹⁴ indicated below.	Indicators for environmental impacts	Describe and identify anticipated and actual significant environmental impacts, both positive and negative from all sources (stationary and mobile) during normal and abnormal/emergency conditions, that may result from the construction and operations of the Project Activity, within and outside the project boundary, over which the Project Owner(s) has/have control.	Describe the applicable national regulatory requirements /legal limits / voluntary corporate limits related to the identified environmental impacts.	If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Not Applicable	If environmental impacts exist but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/voluntary corporate limits by way of plant	If negative environmental impacts exist that will not be in compliance with the applicable national legal/regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause	Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as Harmful at least to a level that is in compliance with applicable legal/regulatory requirements or industry best practice or stricter voluntary	Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce or eliminate the risk of impacts that have been identified as Harmful .	Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless or harmful. The frequency of monitoring to be specified as well including the data source.	-1 0 +1	Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.	Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect and in case of "harmful impacts" how has the project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.	

¹⁴ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

Project Verification Report

					design and operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmless /If the project has a positive impact on the environment mark it as "harmless" as well.	harm (may be un-safe) and shall be indicated as Harmful	corporate requirements					
Reference to paragraphs of Environmental and Social Safeguards Standard		Paragraph 12 (a)	Paragraph 13 (c)	Paragraph 13 (d) (i)	Paragraph 13 (d) (ii)	Paragraph 13 (d) (iii)	Paragraph 13 (e) (i)	Paragraph 13 (e) (ii)	Paragraph 12 (c) and Paragraph 13 (f)	Paragraph 22		Paragraph 24 and Paragraph 26 (a) (i)
Environment - Air	SO _x emissions (EA01)	As per EIA report, Sox content in the exhaust gas of LFG generators is around 2.78 kg/hr significantly lower than the emission limit ¹⁵ .	Limit:60 kg/hr ¹⁶	N/A	harmless	N/A	N/A	N/A	1. The project owner regularly entrusts a third-party agency to conduct sampling and testing to monitor the SOx content in the exhaust gas to ensure	+1	LFG Pre-treatment system has been installed and properly operated to ensure the compliance with regulations.	GCC verifier has reviewed the EIA report/07-b/ provided by the PO has observed that the SOx content in the exhaust gas is below the threshold limit and therefore the +1 score provided by PO is deemed to be acceptable to GCC verifier. Moreover, the testing of SOx will be conducted on annual basis to ensure that the emissions are below the threshold. The test results will be provided by PO

¹⁵ EIA Report, Page 200

¹⁶ http://www.cmo.org.tr/mevzuat/mevzuat_detay.php?kod=348

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									the compliance with regulations. Once per year			during the emission reduction verification. The monitoring procedure of this parameter is provided in section B.7.1 of PSF.
<i>NO_x emissions (EA02)</i>	As per EIA report, Nox content in the exhaust gas of LFG generators is around 8.5 kg/hr significantly lower than the emission limit ¹⁷ .	20 kg /hr ¹⁸	N/A	harmless	N/A	N/A	N/A	2. The project owner regularly entrusts a third-party agency to conduct sampling and testing to monitor the NOx content in the exhaust gas to ensure compliance with regulations. Once per year	+1	LFG Pre-treatment system has been installed and properly operated to ensure the compliance with regulations.	GCC verifier has reviewed the EIA report/07-b/ provided by the PO has observed that the NOx content in the exhaust gas is below the threshold limit and therefore the +1 score provided by PO is deemed to be acceptable to GCC verifier. Moreover, the testing of Sox will be conducted on annual basis to ensure that the emissions are below the threshold. The test results will be provided by PO during the emission reduction verification. The monitoring procedure of this parameter is provided in section B.7.1 of PSF.	
<i>CO₂ emissions (EA03)</i>	The project reduces CO ₂ emissions since it reduces the amount of fossil fuel used. In case of "no project", stated amount of electricity would be generated from fossil fuels and cause air pollution.	Not applicable for biodegradable waste processing facilities.		N/A				The electricity generation will be monitored by using electricity meters. Therefore, emission reduction will be calculated accordingly.	+1	The project will be preventing CO ₂ emissions due to its nature.	Project activity, generates and supplies the electricity to the Turkish national grid/06/09/ thereby reducing the reliance of the fossil fuel powered power plants and results in reduced CO ₂ emissions. Thus, the	

¹⁷ EIA Report, Page 200

¹⁸ http://www.cmo.org.tr/mevzuat/mevzuat_detay.php?kod=348

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												score +1 provided for this environmental safeguard parameter is deemed to be acceptable to GCC verifier. The monitoring procedure for electricity generation and the calibration procedure of the measuring equipment is provided in section B.7.1 of PSF. The emission factor used for the calculation of emission reduction has been cross checked against the source/32/ and is deemed to be acceptable
<i>CO emissions (EA04)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Suspended particulate matter (SPM) emissions (EA05)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Fly ash generation (EA06)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Odor (EA08)</i>	The project reduces odor emissions by LFG recovery, purification, and	The project reduce odor emissions	N/A	N/A	N/A	N/A	N/A	N/A	No monitoring activity will be performed. To be conservative, this	0	N/A	GCC verifier through on-site visit, interviews, and desk review /07-b/

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		destruction. This is a positive impact.	in the baseline; hence the project will not cause any harm in this regard						parameter is not scored.			observed that, prior to the project activity, the MSW has not been managed properly and was dumped in open landfill. The project activity involves the sealing of and collection of LFG from the existing landfill and biomethanization of organic waste from new SWDS. Therefore, the project reduces the odor emission and does not cause any harm. However, due to the lack of monitoring procedure, PO has opted not to score this parameter which is deemed to be acceptable to GCC verifier.
	Noise Pollution (EA09)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Others (EA10)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Add more rows if required and corresponding notation with EA as prefix)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Environment - Land	<i>Solid waste Pollution from Plastics (EL-01)</i>	There may be plastic wastes generated at the end of domestic use at the project site. Those wastes are properly stored and disposed.	According to the Regulation on Control of Packaging	N/A	Harmless	N/A	N/A	N/A	N/A	+1	Waste collection by municipality or licensed companies will be recorded.	Through on-site visit and interview, GCC verifier has observed that there is a potential for the generation of plastic

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			Waste, domestic solid wastes shall be collected in closed trashes and disposed by the municipality.									waste in the project site. The monitoring procedure for this parameter is provided in the PSF along with the disposal mechanisms. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Therefore the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
<i>Solid waste Pollution from Hazardous wastes (EL02)</i>	There may be Hazardous wastes, e.g., waste mineral oil generated at the project site. Hazardous wastes will be properly collected and treated by qualified entity.	Any hazardous waste will be handled according to the national regulations: Regulation on Waste Management (handling of hazardous wastes are included in chapter 3 of this law).	N/A	Harmless	N/A	N/A	N/A	N/A	N/A	+1	Waste collection by municipality or licensed companies will be recorded.	Through on-site visit and interview, GCC verifier has observed that there is a potential for the generation of hazardous in the project site. The monitoring procedure for this parameter is provided in the PSF along with the disposal mechanisms. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Therefore the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Solid waste Pollution from E-</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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wastes (EL04)												
Solid waste Pollution from Batteries (EL05)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Solid waste Pollution from end-of-life products/equipment (EL06)	If any end-of life products or equipment that is generated on site will be handled according to national regulations	Regulation on Waste Management, Regulation on Electrical and Electronic Waste Control, and Regulation on Battery and Accumulator Wastes	N/A	Harmless	N/A	N/A	N/A	N/A	N/A	.+1	Waste collection by municipality or licensed companies will be recorded	Through on-site visit and interview, GCC verifier has observed that there is a potential for the generation of solid waste pollution from end of life product in the project site. The monitoring procedure for this parameter is provided in the PSF along with the disposal mechanisms. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Therefore the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
land use change (change from cropland /forest land)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	<i>to project land) (EL08)</i>											
	<i>Others (EL09)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Add more rows if required</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Environment - Water	<i>Reliability/ accessibility of water supply (EW01)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Water Consumption from ground and other sources (EW02)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Generation of wastewater (EW03)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Discharge of harmful chemicals like marine pollutants /</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	<i>toxic waste (EW06)</i>											
	<i>Others (EW07)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Add more rows if required</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Environment – Natural Resources	<i>Conserving mineral resources (ENR01)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Protecting/enhancing plant life (ENR02)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Protecting/enhancing species diversity (ENR03)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Protecting/enhancing forests (ENR04)</i>	Project site is within the area of managed Greenfield SWDS. Therefore, no forest area used for the project	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
	<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	Project protect the land and groundwater resources by replacing the unmanaged SWDS site to a managed SWDS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
	<i>Conserving energy (ENR06)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Others (ENR09)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Add more rows if required</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Score:		+6										
Project Owner’s Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.										
GCC Project Verifier’s Opinion:		The GCC Verifier certifies that the Project Activity is not likely to cause any or net harm to the environment.										

Appendix 6. Matrix for Identifying Social Impacts, Establishing Safeguards and Performing Do-No-Harm Risk Assessments in the PSF and

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion		GCC project Verifier's Conclusion (To be included in Project Verification Report only)
		Description of Impact <i>(positive or negative)</i>	Legal requirement /Limit, Corporate policies / Industry best practice	Do-No-Harm Risk Assessment (Choose which ever is applicable)			Risk Mitigation Action Plans (for aspects marked as Harmful)	Performance indicator for monitoring of impact.	Ex-ante scoring of environmental impact	Explanation of the Conclusion	3 rd Party Audit
				Not Applicable	Harmless	Harmful					
Social Aspects on the identified categories¹⁹ indicated below.	<i>Indicators for social impacts</i>	<i>Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all sources during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control</i>	<i>Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts</i>	<i>If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Not Applicable</i>	<i>If social impacts exist but are expected to be in compliance with applicable national regulatory requirements/ stricter voluntary corporate limits by way of plant design and operating principles then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmful</i>	<i>If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm and shall be indicated as Harmful</i>	<i>Describe the operational or management controls that can be implemented as well as best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as Harmful.</i>	<i>Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless or harmful. The frequency of monitoring to be specified as well. Monitoring parameters can be quantitative or qualitative in nature along with the data source</i>	-1 0 +1	<i>Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulatory limits (if any) including basis of conclusion</i>	<i>Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful" aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of negative social impacts to levels that</i>

¹⁹ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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					<i>Harmless</i> , project having positive impact on society. To the BAU / baseline scenario must also mark their aspect as "harmless"						are unlikely to cause any harm. Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.
Reference to paragraphs of Environmental and Social Safeguards Standard		Paragraph 12 (a)	Paragraph 13 (c)	Paragraph 13 (d) (i)	Paragraph 13 (d) (ii)	Paragraph 13 (d) (iii)	Paragraph 13 (e) (i)	Paragraph 12 (c) and Paragraph 13 (f)	Paragraph 23		Paragraph 24 and Paragraph 26 (a) (ii)
Social - Jobs	<i>Long-term jobs (> 10 year) created/lost (SJ01)</i>	The project creates long term job opportunities during operation.	All employments are done according to the national employment regulations.	N/A	N/A	N/A	N/A	People will be employed as long terms employees.	+1	N/A	GCC verifier during on-site visit and desk review/10/ has observed that the long-term job opportunities has been provided by the project activity during the operational phase. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	<i>New short-term jobs (< 1 year) created/lost (SJ02)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Sources of</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	<i>income generation increased / reduced (SJ03)</i>										
	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) (Human rights)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social - Health & Safety	<i>Disease prevention (SHS01)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Occupational health hazards (SHS02)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Reducing / increasing accidents / incident / fatality (SHS03)</i>	Regular training on maintenance and occupational health and safety will be provided to staff those responsible for maintenance and repair of the panels.	All trainings are done according to the national "occupational health and safety" law 39	N/A	N/A	N/A	N/A	The training records will be provided during monitoring period	+1	The project activity will supply necessary trainings for occupational health and safety in the field	GCC verifier during on-site visit and desk review/11/ has observed that regular training programs/ 11/ has been provided by the project activity during the operational phase. The monitoring procedure of this

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											parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	<i>Reducing / increasing crime (SHS04)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Reducing / increasing food wastage (SHS05)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Reducing / increasing indoor air pollution (SHS06)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Efficiency of health services (SHS07)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Sanitation and waste management (SHS08)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Other health and safety issues (SHS09)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Add more rows if required</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Social - Education	<i>specialized training / education to local personnel (SE01)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Educational services improved or not (SE02)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Project-related knowledge dissemination effective or not (SE03)</i>	Regular training on maintenance and occupational health and safety will be provided to staff those responsible for maintenance and repair	All trainings are done according to the national "occupational health and safety" law 39	N/A	N/A	N/A	N/A	The training records will be provided during monitoring period	+1	The project activity will supply necessary trainings for occupational health and safety in the field	GCC verifier during on-site visit and desk review/11/ has observed that regular training programs/ 11/ has been provided by the project activity during the operational phase. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	<i>Other educational issues (SE03)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Add more rows if required (SE04)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social - Welfare	<i>Improving/ deteriorating working</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	conditions (SW01)										
	Community and rural welfare (indigenous people and communities) (SW02)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Poverty alleviation (more people above poverty level) (SW03)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Improving / deteriorating wealth distribution / generation of income and assets (SW04)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Increase or / deteriorating municipal revenues (SW05)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Women's empowerment (SW06) (Human rights)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	<i>Reduced / increased traffic congestion (SW07)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Exploitation of Child labour (Human rights) (SW08)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Minimum wage protection (Human rights) (SW09)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Abuse at workplace. (With specific reference to women and people with special disabilities / challenges) (Human rights) (SW10)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Other social welfare issues (SW11)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Avoidance of</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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<p><i>human trafficking and forced labour</i> (Human rights) (SW12)</p>											
<p><i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs</i> (Human rights) (CW13)</p>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p><i>Provisions of resettlement and human settlement displacement</i> (Human rights) (CW14)</p>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p><i>Add more rows if required</i></p>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Net Score:</p>	<p>+3</p>										

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Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.
GCC Project Verifier's Opinion:	The GCC Verifier certifies that the Project Activity is not likely to cause any or net harm to society.

Appendix 7. Matrix for Demonstration of Contribution of Project to Sustainable Development

UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs				GCC Project Verifier's Conclusion (To be included in Project Verification Report only)	
			Project-level SDGs	Project-level Targets/Actions	Contribution of Project-level Actions to SDG Targets	Monitoring	Verification Process	Are Goal/Targets Likely to be Achieved ?
<p>Describe UN SDG targets and indicators</p> <p>See: https://unstats.un.org/sdgs/indicators/indicators-list/</p>	Describe the UN-level target(s) and corresponding indicator no(s)	Has the host country declared the SDG to be a national priority? Indicate Yes or No	Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column for guidance.	Define project-level targets/actions in line with nee project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).	Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets	Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG indicator and its corresponding target, frequency of monitoring and data source	Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).	Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or no)
Goal 1: End poverty in all its forms everywhere								

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Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture									
Goal 3. Ensure healthy lives and promote well-being for all at all ages									
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all									
Goal 5. Achieve gender equality and empower all women and girls									
Goal 6. Ensure availability and sustainable management of water and sanitation for all	SDG Target 6.3 “By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the	Yes	Prevent water pollution via collection and abatement of manure and organic wastes. The project will provide a pollution prevention opportunity that might be emerged from the leachate as it causes groundwater pollution.	Project will enable proper management of waste and prevent groundwater pollution in the baseline.	The leachate can be calculated over the waste collected in the area. Hence, considering that minimum 100 tons of waste per day will be collected, the calculated leachate will be around 20 m ³ /day according to the EIA study.	Project will enable proper management of organic wastes and convert into organic fertilizer and prevent leachate to pollute the groundwater with leachate collection and removal systems integrated in the plant.	Amount of waste collected, and leachate calculated accordingly.	Prior to the project activity, unmanaged SDWS (open landfill) was used for the disposal of MSW which leads to the formation of leachates and pollution of groundwater. During the implementation of project activity, the organic waste separated from the MSW received is treated in an anaerobic digester and is used to produce electricity and supply to the national grid of Türkiye/07/09/. The EIA report/07-b/ and EIA approval document/07-a/ provided by PP has been reviewed by GCC verifier and based on the observation from on-site visit and interviews, GCC verifier confirms that the	Yes

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	proportion of untreated wastewater and substantially increasing recycling and safe reuse globally".							SDG 6 is likely to be achieved.	
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	SDG Target 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix" by the utilization of biomass as a renewable energy source." Indicator 7.2.1 Renewable energy share in the total final energy consumption	Yes	Increase the share of renewables in the total installed power capacity connected to the national grid.	Provides 30.604 GWh clean energy annually	Enhance the share of installed electricity generation capacity from renewable energy sources.	The project increases the renewable energy share in Türkiye's energy production mix. It provides 30.604 GWh annual clean energy to the grid.	Quantity of electricity generated and supplied to grid by the project	The project activity includes the segregation of MSW and anaerobic digestion of the organic materials separated and generation of electricity through gas engines and supply to the national grid of Türkiye/05/09/. Project is expected to produce 30.604 GWh of renewable energy as per the generation license/05-b/. Therefore, GCC verifier confirms that SDG 8 is likely to be achievable	Yes
Goal 8. Promote sustained, inclusive, and sustainable	SDG Target 8.5 "By	Yes	Generated job opportunities and income	Provide a minimum number of 22	Minimum 22 people to be recruited.	The project created job opportunity for	Monitoring employment records	GCC verifier during the onsite interview and desk review/10/ confirms that	Yes

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<p>economic growth, full and productive employment and decent work for all</p>	<p>2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value". Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</p>			<p>employment opportunity.</p>		<p>both construction and operation period. It created long term employment for Minimum 22 people who are directly working at the site</p>		<p>long term employment has been provided during the construction and operational phase of the project activity. The GCC verifier confirms that SDG 8 is likely to be achievable</p>	
<p>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>SDG Target 9.4 requires "By 2030, upgrade infrastructure and</p>	<p>Yes</p>	<p>Provides one clean and resilient energy generation facility</p>	<p>Project implementation is a 30.604 GWh resilient energy generation facility.</p>	<p>Project provides clean energy avoiding 86,576 tCO₂ annually.</p>	<p>The project helps adaptation of clean energy technologies by implementing</p>	<p>Calculate GHG emissions per unit of value added through monitoring quantity of</p>	<p>The project activity includes the segregation of MSW, and anaerobic digestion of the organic materials separated and generation of electricity through gas engines and supply to the national grid</p>	<p>Yes</p>

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	<p>retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities". Indicator 9.4.1 CO₂ emission per unit of value added</p>							<p>a wind power plant.</p>	<p>electricity generated and supplied to grid by the project and grid emission factor</p>		<p>of Türkiye/05/09/. Project is expected to produce 30,604 GWh of resilient energy as per the generation license/05-b/ and is expected to reduce 86,576 tCO₂e annually. Therefore, GCC verifier confirms that SDG 8 is likely to be achievable.</p>			
<p>Goal 10. Reduce inequality within and among countries</p>														
<p>Goal 11. Make cities and human settlements inclusive, safe,</p>														

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resilient, and sustainable									
Goal 12. Ensure sustainable consumption and production patterns									
Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”. Indicator 13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-	Yes	Eliminates 86,576 tCO ₂ annually		SDG13: Climate Action 13.3.2. Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development	Eliminates 86,576 tCO ₂ annually	Calculate avoided GHG emissions every year through monitoring quantity of electricity generated and supplied to grid by the project and grid emission factor	The project activity includes the segregation of MSW, and anaerobic digestion of the organic materials separated and generation of electricity through gas engines and supply to the national grid of Türkiye/05/09/. Project is expected to produce 30.604 GWh of resilient energy as per the generation license/05-b/ and is expected to reduce 86,576 tCO ₂ e annually. Therefore, GCC verifier confirms that SDG 8 is likely to be achievable	Yes

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	building to implement adaptation, mitigation and technology transfer, and development actions								
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development									
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss									
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels									

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Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development										
SUMMARY						Targeted	Likely to be Achieved			
Total Number of SDGs						5	5			
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF						Platinum	Platinum			

DOCUMENT HISTORY

Version	Date	Comment
V 3.1	31/12/2020	<ul style="list-style-type: none"> ▪ The name of GCC Program’s emission units has been changed from “Approved Carbon Reductions” or ACRs to “Approved Carbon Credits” or ACCs.
V 3.0	23/08/2020	<ul style="list-style-type: none"> ▪ Revised version released on approval by the Steering Committee as per the GCC Program Process; ▪ Revised version contains the following changes: <ul style="list-style-type: none"> ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by the Steering Committee: <ul style="list-style-type: none"> ➤ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➤ electronic consultations EC01-Round 04 (17.08.2020 – 22.08.2020). ▪ Feedback from the Technical Advisory Board (TAB) of ICAO on GCC submissions for approval under CORSIA²⁰;
V 2.0	25/06/2019	<ul style="list-style-type: none"> ▪ Revised version released for approval by the GCC Steering Committee. ▪ This version contains details and information to be provided, consequent to the latest worldwide developments (e.g., CORSIA EUC).
v1.0	01/11/2016	<ul style="list-style-type: none"> ▪ Initial version released for approval by the GCC Steering Committee under GCC Program Version 1

²⁰See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf



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