

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v.1.5**

RELATED SUPPORT

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KEY PROJECT INFORMATION

GS ID of Project	GS 1068
Title of Project	Bursa-Hamitler Landfill Gas Collection and Energy Utilization Project
Time of First Submission Date	13/03/2026 (for third crediting period)
Date of Design Certification	29/08/2013
Version number of the PDD	07
Completion date of version	28/08/2026
Project Developer	ITC-KA Enerji Üretim Sanayi ve Ticaret A.Ş.
Project Representative	Life Climate (Life İklim ve Enerji Ltd. Şti.)
Project Participants and any communities involved	ITC-KA Enerji Üretim Sanayi ve Ticaret A.Ş.
Host Country (ies)	Turkey
Activity Requirements applied	☐ Community Service Activity ☒ Renewable Energy ☐ Land-Use and Forests Activity Requirements /Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☒ Small Scale ☐ Large Scale
Other Requirements applied	N/A
Methodology (ies) applied and version number	A6.4-AMM-001: Flaring or use of landfill gas (version 01.0)
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☒ Regular ☐ Retroactive

Land-use & Forest Key Project Information¹

N/A

¹ Please refer to Appendix 3 for detailed information on LUF projects

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
SDG 13- Take urgent action to combat climate change and its impacts	Reduction of Greenhouse gas emission	41,645	tCO ₂ e/yr
SDG 7– Ensure access to affordable, reliable, sustainable and modern energy for all	Electricity generated using landfill gas	19,600	MWh/yr.
SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Employment generated due to the project activity	At least 5 employees, each receiving at least 1 training per year	Number

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

Bursa-Hamitler Landfill Gas Collection and Energy Utilization Project (hereafter referred to as "the Project") is being developed by "ITC-KA Enerji Üretim San. ve Tic. A.Ş." (hereafter referred to as the "Project Participant"). On 14/01/2011 Bursa Greater Municipality has transferred the right of use of the landfill area to the Project Participant.

The objective of the project activity is to capture and utilize the LFG (Landfill Gas) from Hamitler Landfill Area for electricity generation which will be exported to the national grid. The Hamitler Landfill Area, is located in Bursa Province, has been established as a wild landfill area in 1996 and has been operational since then accepting approximately 2,000 ton/day Municipal Waste (MSW) from approximately 2.6 million inhabitants of Bursa Province. The receipt of waste at the specified landfill site has currently been discontinued. However, in order to ensure the continuity and sustainability of the project, the acceptance of waste to the same site may be resumed if deemed necessary in the future. As no new waste has been received at the landfill site since 2020, waste quantities from 2020 onwards are considered zero, and the baseline emissions have been determined accordingly².

The Bursa-Hamitler Landfill Gas Collection and Energy Utilization Project holds an operation license valid until 2040 according to Generation License. This validity relates to the energy generation activity rather than the waste disposal operations at the landfill site. In Türkiye, such licenses define the maximum authorized operational period for the energy recovery installation; however, actual waste disposal activities at the landfill site depend on the decisions of the competent municipality and regional waste management planning. The project owner has officially confirmed through a signed declaration that no additional waste is currently being disposed at the Bursa-Hamitler landfill site.³ Therefore, no additional waste is currently being accepted at the landfill site. For conservativeness purposes, waste quantities throughout the crediting period were assumed to be zero, while the landfill gas collection and energy utilization plant may continue operating under its respective license conditions. Accordingly, for the baseline scenario and emission reduction calculations, waste quantities from 2020 onward were conservatively assumed as zero. Methane generation was therefore estimated only based on the degradation of the historical waste already deposited at the landfill prior to the suspension of waste acceptance.

The project activity involves the covering of the landfill area and installation of a gas extraction system, capturing the LFG and feeding it to gas engines for electricity

² The project owner has officially confirmed this information through a signed declaration. And the signed declaration is submitted to VVB.

³ The signed declaration is submitted to VVB.

generation. Any excess of LFG (during emergency / non-operational phase of gas engine) will be flared in an enclosed flare system. The total installed capacity of the 7 gas engines under the project activity is 9.8 MW⁴ with an estimated electricity generation of approximately 68.6 GWh/year⁵; however, since only 2 gas engines are currently active, the expected electricity generation has been assumed to be 19.6 GWh/year for this crediting period. The generated electricity will be delivered to the national grid.

In the baseline situation the LFG was released into the atmosphere without any collection, flaring or utilization. Landfill gas is one of the largest sources of methane emissions to the atmosphere and typically contains approximately 50% methane⁶, which is a potent greenhouse gas.

The baseline scenario is the same as the existing scenario, in which the municipal waste is deposited and left for decay at the landfill site, leading to generate and release of large amounts of landfill gas. Landfill gas is one of the largest sources of methane emissions to the atmosphere and typically contains 50% methane, a potent greenhouse gas. GHG emission reductions will be achieved by two means.

- By collection and destruction of methane by power generation, and;
- Displacing an equal amount of electricity generated by power plants connected to the electricity system.

The total estimated GHG emission reductions of the project activity for the third crediting period are 291,516 tCO₂e.

The important milestones of the project activity addressing the prior consideration are presented as follows:

Date	Event
10/12/2010	Board Decision on GS VERs
14/01/2011	Transfer of Landfill to the PP
21/04/2011	LSC meeting
20/06/2011	Start of construction
19/05/2012	Commissioning of five power generation units (confirmed through the Temporary Acceptance Protocol)
27/07/2012	Commissioning of one power generation units (confirmed through the Temporary Acceptance Protocol)
07/09/2012	Commissioning of one power generation units (confirmed through the Temporary Acceptance Protocol)

⁴ The Generation License obtained from EMRA (Electricity Market Regulatory Authority) is available to the VVB)

⁵ Based on the assumption of a 7000h operational hour when reaching full capacity of 9.8MW.

⁶ <https://www.epa.gov/lmop/basic-information-about-landfill-gas>

19/05/2012	Start date of the first crediting period ⁷
18/05/2019	End date of the first crediting period
19/05/2019	Start date of the second crediting period
18/05/2026	End date of the second crediting period
19/05/2026	Start date of the third crediting period
18/05/2033	End date of the third crediting period

Both awareness and consideration could be demonstrated transparently through the timeline of the project activity. The board has decided to put an offer to the tender of Bursa Landfill Management by the Municipality based on the GS VERs revenues. This decision has been documented very clearly and transparently through the board decision on 10/12/2010, which predates any kind of action towards implementation of the project activity.

Contribution to Sustainable Development:

The project activity will also contribute significantly to the region's sustainable development:

- The project activity will significantly improve local air quality by reducing the amount of pollutants emissions contained in the LFG. Landfill areas cause odour nuisance and have a high risk of explosion and fire. By properly covering the landfill and extracting the landfill gas, the odour nuisance and risk of explosion and fire will be significantly reduced.
- The project activity will result in creation of local employment.
- The project activity will contribute to reduce global warming by reducing CH₄, which has a global warming potential 28 times of CO₂.
- The project results in the transfer of knowledge on waste management principles

A.1.1. Eligibility of the project under Gold Standard

The project activity meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements document, 2.1⁸, as described below:

(a) Types of project: The project activity is a waste handling and disposal project involving the recovery and utilization of landfill gas for electricity generation. The project generates electricity from a non-fossil renewable energy source and supplies the generated electricity to the national grid. Accordingly, the project complies with the eligibility requirements set out in Sections 2.1.2(a) and 2.1.2(b) of the Gold Standard Renewable Energy Activity Requirements (Version 1.4). The project applies methodologies Approved mechanism methodology

⁷ The estimated starting date of the crediting period is defined as 01/09/2012 as per the registered PDD. However, first five gas engines were in operation on 19/05/2012 as confirmed through the temporary acceptance protocol. Therefore, the date is revised in the first monitoring report.

⁸ <https://globalgoals.goldstandard.org/101-par-principles-requirements/>

- A6.4-AMM-001: Flaring or use of landfill gas Version 01.0; which is an approved methodology under Gold Standard.
- (b) **Location of Project:** The project is located in Turkey is eligible. Refer section A.2 for the geo-coordinates.
 - (c) **Project Area, Project Boundary and Scale:** The project activity follows the UNFCCC approved methodology and project area and boundary is defined in line with methodological requirement. The project activity is a Waste Handling and Disposal project along with electricity generation units and qualifies under small scale projects (In accordance with GS Product Requirement - GHG Emissions Reduction & Sequestration Product Requirements, Version 3.2. Paragraph 9: Project Scale, All Projects exceeding the small-scale thresholds are defined as large scale. The project activity being a landfill gas and alternate water treatment measures belongs to Type 3: Other project activities. Since the annualized emission reduction from the project activity of 41,645 tCO₂e/annum is lower than small-scale thresholds of 60,000 tCO₂e per year in any year of the crediting period therefore the project activity complies to the small-scale project activity).
 - (d) **Host Country Requirements:** The projects have obtained all the required clearances for the commissioning of the project from the host country government.
 - (e) **Contact Details:** Please refer Appendix 2 for the contact details. ITC-KA Enerji Üretim San. ve Tic. A.Ş. is acting as project proponent (PP) of project activity.
 - (f) **Legal ownership:** please refer section A.1.2 for the legal ownership details.
 - (g) **Other Rights:** The project activity adapts Turkish Republic Laws and Regulations governing the landfill gas component.
 - (h) **Official Development Assistance (ODA) Declaration:** Refer Section A.5 for the information of funding sources of projects.

The project activity results in displacement of electricity from fossil fuel powered power stations supplying to the grid while contributing to sustainable development of Turkey. Hence, the project contributes to the Gold Standard Vision and Mission.

As per section 1 Scope and Applicability of GS4GG-Renewable-Energy-Activity-Requirements-v1.4⁹, the project activity conforms (a) Gold Standard for the Global Goals Principles & Requirements (and associated documents) AND (b) Gold Standard Renewable Energy Activity Requirements.

As per the Renewable-Energy-Activity-Requirements-v1.4¹⁰, section 2 Eligible Project Types is described below:

⁹ https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf
¹⁰ https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf

- The project activity is in compliance to section 2.1.2 (a) of Renewable-Energy-Activity-Requirements-v1.4, as the project is generating electricity from non-fossil fuel i.e., from landfill gas and biogas.
- As per the section 2.1.2 (b), this project comprises of electricity generation through landfill gas and biogas and supplying electricity to the grid.
- The project is grid connected energy project and not supplying electricity to a mini-grid and therefore is not required to refer to Community Services Activity Requirements (2.1.2 (c)).
- As per Section 2.1.4 since the project includes waste to energy projects that involve utilization of landfill gas/biogas to electricity generation the project is not required to satisfy the eligibility condition of section 2.1.3.
- The project activity is not generating on-site energy for captive consumption at an industrial facility therefore the eligibility criteria is not applicable to the project activity (2.1.2(d)).
- In accordance with Electricity Market Production Capacity Report, Installed Capacity and Production by Resources by the end of 2024 ¹¹

Resource Type	Total Generation (GWh)	Share (%)
HYDRAULIC	74.881,58	21,57
WIND	36.628,89	10,55
SOLAR	25.894,53	7,46
BIOMASS	10.162,56	2,93
GEOTHERMAL	11.241,52	3,24
RENEWABLE	158.809,10	45,74
IMPORT COAL	75.408,27	21,72
NATURAL GAS	64.927,63	18,70
LIGNITE	42.055,09	12,11
HARD COAL	4.131,66	1,19
ASPHALTITE	1.153,81	0,33
FUEL OIL	727,68	0,21
NAPHTHA	0,00	0,00
LNG	0,00	0,00
DIESEL	0,00	0,00
THERMIC	188.404,15	54,26
TOTAL	347.213,24	100,00

The above data clearly shows that the percentage generation capacity from biogas+waste is 1.6% and the level of penetration is lower than 5% of the total grid installed capacity. Therefore, the project is eligible (2.1.3). Although in accordance with paragraph 2.1.4 and 2.1.5 the project is not required to establish its eligibility against paragraph 2.1.3.

- The project activity includes use of landfill gas for power generation and claims for emission reductions from both methane avoidance (including from the flared biogas fraction) and non-renewable fuel substitution and is demonstrated that

¹¹ <https://www.epdk.gov.tr/Detay/Icerik/3-0-24/elektrikyllik-sektor-raporu>

the system was designed in a way to at least make use of some of the biogas recovered for the delivery of energy services (e.g., electricity, heat) in accordance to Annex A (Additional Eligibility criteria for specific project types) of Renewable-Energy-Activity-Requirements-v1.4 document is not applicable for the project activity.

- In accordance with paragraph 2.1.8 Additional eligibility criteria for specific Renewable Energy project technologies like Hydropower, projects using biomass resources, biogas, waste heat/gas recovery, fossil co-generation, waste incineration and gas, and waste handling and disposal etc., are prescribed in Annex A. In accordance with Technology Specific Eligibility Criteria under Annex-A

Methane recovery project activities shall be eligible for emission reductions from both methane avoidance (including from the flared biogas fraction) and non-renewable fuel substitution as long as evidence is provided on time for validation to demonstrate that the system was designed in a way to at least make use of some of the biogas recovered for the delivery of energy services (e.g., electricity, heat).	The project activity includes use of recovered landfill gas and biogas for power generation and export of the power to the national grid. Since the project activity is designed to make use of the biogas recovered for the delivery of energy services i.e. electricity generation therefore the project activity is eligible for emission reductions from both methane avoidance and non-renewable fuel substitution (substituting grid power generated in the fossil fuel-based power plant)
Methane recovery project activities at wastewater treatment plants related to Palm Oil production shall comply with all the Palm Oil related rules mentioned above (paragraph 1.2.7 above).	The project activity does not include methane recovery at wastewater treatment plants related to Palm Oil production and hence is not applicable to project activity.

- The project activity is not seeking the renewable Energy Labels, hence criteria 2.1.6 of Renewable-Energy-Activity-Requirements-v1.4 document is not applicable for project activity.
- There is no potential for double counting of impacts if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature and confirm that the project is not registered with any other voluntary or compliance schemes.¹²

Accordingly, project activity registered under Gold Standard with ID No. GS 1068.

Please refer below link: <https://registry.goldstandard.org/projects/details/53>

¹² Declaration on double counting is submitted to VVB.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

ITC-KA Enerji Üretim San. ve Tic. A.Ş.¹³ is the project proponent (PP) of project activity and have the legal right to control and operate the project activity.

A.2 Location of project

Host Country: Turkey

Region: Marmara Region, Bursa Province

Bursa is located at the south of Marmara region and is the 4th largest city in Turkey with a population of approximately 2,600,000 inhabitants. The Hamitler landfill is the largest landfill area within Bursa Province and is located in Osmangazi District. The nearest settlements to the project site are Yenibağlar Village and Fatih Sultan Mehmet Village.

The geographic boundary of the project activity is defined by the coordinates provided in Table 2. The coordinates are expressed in the WGS84 geographic coordinate system. A KML file defining the project boundary is also provided in accordance with paragraph 22 of A6.4-AMM-001.

Table 2. Geographic boundary coordinates of the project activity¹⁴

Corner No	Latitude	Longitude
1	40°15'42.00"N	28°58'44.00"E
2	40°15'42.00"N	28°58'46.0"E
3	40°15'38.00"N	28°58'46.00"E
4	40°15'39.00"N	28°58'47.00"E

¹³ The owner of the project is changed from ITC Bursa Enerji Üretim Sanayi ve Ticaret A.Ş. to ITC-KA Enerji Üretim Sanayi ve Ticaret A.Ş. New generation license in the name of ITC-KA Enerji Üretim Sanayi ve Ticaret A.Ş. is given by EPDK on 03/02/2022 as a continuation of the old generation license. ITC-KA Enerji Üretim San. ve Tic. A.Ş. is a group company of ITC Invest Trading & Consulting AG Ankara Branch.

¹⁴ The coordinates presented in this PDD were converted from the coordinates provided in the Generation License into the WGS84 geographic coordinate system (latitude/longitude) for consistency and ease of reference.



Figure 1. Location of the Project

A.3 Technologies and/or measures

Hamitler Landfill Area was opened in 1996 and operated by the municipality as an uncontrolled dumpsite without any LFG extraction, flaring or utilization. The scenario existing prior to the start of implementation of the project activity is the same as the baseline scenario.

The purpose of the project activity is to recover the LFG gas accumulated in the landfill area and generate electricity via gas engines to generate electricity. In order to recover the LFG, the closed lots of the landfill will be covered by an appropriate layer to maximize the collection efficiency. The LFG is collected actively via collection system.

7 sets of GE Jenbacher 1.4 MW gas engines installed within the scope of the project activity, of which 2 are currently operational. An enclosed flare system is also installed

to burn the excess LFG in a controlled environment and disposal of it safely to the atmosphere. The specifications of gas engine are given in Table below.

Manufacturer	Engine Type	Capacity (MWm / MWe)	Gas Volume (Full Load to Part Load)	Electrical Efficiency (Full Load to Part Load)
GE Jenbacher GmbH & Co OG	JGS 420 GS-B121	1.427 MWm / 1.400 MWe	Full load - 755 Nm ³ /h Part Load - 583 / 410 Nm ³ /h	Full load 41.6 % Part Load - 40.4 / 38.1 %

The generated electricity is exported to the national grid, through Bursa II TM transformer station via Medium Voltage Level.

A.4 Scale of the project

The project activity includes methane avoidance through capture and utilizations of landfill gas for power generation. The total installed generation capacity of the plant is 9.8 MWe consisting of seven gas engines, currently only two gas engines are in operation, corresponding to an active installed capacity of 2.8 MWe. Average emission reduction/GHG avoidance from the project activity is 41,645 tCO₂e/annum.

In accordance with GS Product Requirement - GHG Emissions Reduction & Sequestration Product Requirements, Version 3.2. Paragraph 9: Project Scale, All Projects exceeding the small-scale thresholds are defined as large scale. The project activity being a landfill gas and alternate water treatment measures belongs to Type 3: Other project activities. Since the annualized emission reduction from the project activity of 41,645 tCO₂e/annum is lower than small-scale thresholds of 60,000 tCO₂e per year in any year of the crediting period therefore the project activity complies to the small-scale project activity.

A.5 Funding sources of project

The project activity does not have any public funding or Official Development Assistance (ODA) funding.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

Approved mechanism methodology A6.4-AMM-001: Flaring or use of landfill gas (Version 01.0)¹⁵

Used tools¹⁶:

- A6.4-AMT-001: Common practice analysis (Version 01.0)
- A6.4-AMT-002: Investment analysis (Version 01.0)
- A6.4-AMT-003: Emissions from solid waste disposal sites (Version 01.0)
- A6.4-AMT-004: Project emissions from flaring (Version 01.0)
- A6.4-AMT-005: Mass flow of a greenhouse gas in a gaseous (Version 01.0)

B.2. Applicability of methodology (ies)

The project activity involves waste management technologies including LFG extraction, and utilization of the produced LFG for electricity generation. The applicability of the methodologies and tools have been discussed below. The applicability of the project is validated against the current version of the methodology.

Methodology	Applicability Criteria	Justification
A6.4-AMM-001	11. The mechanism methodology is applicable to Article 6.4 activities that involve: a) The installation of a new LFG capture system in an existing or new (greenfield) SWDS where no LFG capture system was installed prior to the implementation of the Article 6.4 activity (except for legal or contractual requirements) or would be installed in the absence of the Article 6.4 activity; or b) Upgrading an existing (active or passive) LFG capture system to increase the recovery rate,	The project includes installation of new LFG capture system in an existing SWDS where no LFG capture system was or would have been installed prior to the implementation of the project activity therefore the methodology condition 11 (a) is applicable to the project activity. The methodology includes installation of new LFG capture system and hence para 11 (b) is not

¹⁵ <https://unfccc.int/sites/default/files/resource/A6.4-AMM-001-v01.0.pdf>

¹⁶ <https://unfccc.int/process-and-meetings/the-paris-agreement/article-6/article-64-pacm/mechanism-process/methodologies/a64-amm-001>

	where the captured LFG prior to the implementation of the Article 6.4 activity was flared and not used, and: (i) The amount of LFG captured by the existing system is collected and measured separately from the upgrade implemented as part of the Article 6.4 activity; or (ii) The efficiency of the existing system is not impacted by the upgrade implemented as part of the Article 6.4 activity, and historical data on the amount of LFG captured and flared is available (if such historical data is not available, no A6.4 ERs can be claimed).	applicable to the project activity.
A6.4-AMM-001	12. The mechanism methodology is only applicable to activities that meet the requirements of paragraph 11 above and that collect the LFG under the Article 6.4 activity exclusively for one or more of the following applications: a) Flaring; b) Generating electricity; c) Generating heat in a boiler, air heater or kiln (brick firing only) or glass melting furnace; d) Supplying the biomethane produced from the LFG to consumers through a natural gas distribution network; e) Supplying the LFG or the biomethane produced from the LFG to consumers via trucks; f) Supplying the LFG or the biomethane produced from the LFG to consumers through a dedicated pipeline.	LFG captured is used for the purpose of generation of electricity and hence the methodology condition 12 (b) is applicable to the project activity.
A6.4-AMM-001	13. The mechanism methodology is only applicable if the project does not reduce the amount of organic waste that would be recycled in the absence of the Article 6.4 activity.	The project does not result in reduction of organic waste that would be recycled in the absence of the project activity and hence the methodology

		condition 13 is applicable to the project activity.
A6.4-AMM-001	14. The mechanism methodology is only applicable for the following baseline scenarios: (a) For the methane contained in the LFG component (hereafter referred to as "methane component"): (i) For Article 6.4 activities developed in an existing SWDS, the most plausible baseline scenario is that the methane contained in the LFG generated in the SWDS would be either released to the atmosphere or captured and destroyed through flaring to comply with legal or contractual requirements, to address safety and odour concerns, or for other reasons; (ii) For Article 6.4 activities implemented in a greenfield SWDS, the most plausible baseline scenario, as identified based on the best-available technology (BAT) approach, is that the methane contained in the LFG generated in the SWDS would be either released to the atmosphere or captured and destroyed through flaring to comply with legal or contractual requirements, to address safety and odour concerns, or for other reasons. b) For the electricity generation component: (i) If the electricity generated by the Article 6.4 activity is supplied to the grid, the most plausible baseline scenario is the same amount of electricity is generated from other power plants connected to the same electric grid; (ii) If the electricity generated by the Article 6.4 activity replaces the electricity generated in an existing	The project activity is implemented in an existing SWDS where methane contained in the LFG would otherwise be released to the atmosphere in the absence of the project activity. Under the project activity, the captured LFG is utilized for electricity generation and the generated electricity is supplied to the grid. Therefore, in accordance with paragraph 14(a)(i), the baseline scenario for the methane component is the release of methane to the atmosphere. In addition, in line with paragraph 14(b)(i), the electricity generated by the project activity displaces electricity that would otherwise be generated by power plants connected to the same electricity grid. The project activity does not involve heat generation and does not replace any existing heat generation equipment within the project boundary. Therefore, the applicability condition defined under paragraph 14 (c) is not applicable to the project activity. The project activity does not supply of LFG or biomethane to consumers through trucks or dedicated pipeline, or the supply of biomethane through natural gas

	captive fossil fuel fired power plant located within the project boundary, the most plausible baseline scenario is the continued operation of the existing captive fossil fuel fired power plant located using the same fuel; (iii) If the electricity generated by the Article 6.4 activity replaces the electricity generated in a new captive fossil fuel fired power plant located within the project boundary, the baseline scenario is determined based on the best available technology approach. c) For the heat generation component: (i) If the heat generated by the Article 6.4 activity is replacing heat generated in existing equipment located within the project boundary (e.g., a boiler, air heater, glass melting furnace or brick kiln), the most plausible baseline scenario is the continued generation of heat in the existing equipment using the same fuel; (ii) If the heat generated by the Article 6.4 activity is replacing heat generated in new equipment located within the project boundary (e.g., a boiler, air heater, glass melting furnace or kiln), the baseline scenario is determined based on the best available technology approach. d) For the supply of LFG or biomethane to consumers through trucks or dedicated pipeline, or the supply of biomethane through natural gas dedicated network (hereinafter referred to as "supply of LFG or biomethane to consumers component"), the most plausible baseline scenario is the	dedicated network within the project boundary. Therefore, the applicability condition defined under paragraph 14 (d) is not applicable to the project activity.
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	consumption of natural gas from an existing natural gas network.	
A6.4-AMM-001	15. If the Article 6.4 activity involves heat generation and results in existing heat generation equipment being replaced as per paragraph 14(c)(i) above, then activity participants shall demonstrate that: a) The existing heat generation equipment that is replaced is scrapped, and provide evidence of the scrapping to the DOE performing the validation or at first verification; or b) The existing heat generation equipment is used outside of the activity boundary and has a higher efficiency than any equipment it may replace. Evidence of the efficiency of the replaced heat generation equipment outside of the activity boundary shall be provided to the DOE performing the validation. If activity participants cannot demonstrate that a higher efficiency equipment is replacing a lower efficiency equipment, then the mechanism methodology is not applicable.	The project activity does not involve heat generation and does not replace any existing heat generation equipment within the project boundary. Therefore, the applicability condition defined under paragraph 15 is not applicable to the project activity.
A6.4-AMM-001	16. This mechanism methodology is only applicable as a standalone methodology and cannot be applied in combination with other methodologies.	The project activity applies A6.4-AMM-001 (version 01.0) as a standalone methodology and is not combined with any other methodology. Therefore, the applicability condition defined under paragraph 16 is satisfied.
A6.4-AMM-001	17. This mechanism methodology is not applicable if the management of the SWDS in the Article 6.4 activity scenario is changed in a manner that	The project activity does not involve any change in the design or management of the

	increases methane generation compared to the situation prior to the implementation of the Article 6.4 activity (for example by recirculating the leachate in the project scenario which was not done in the baseline), unless the change is implemented due to legal requirements. At the validation and at each verification, the DOE shall assess whether any changes in the design or management of the SWDS have been implemented and review any applicable legal requirements (e.g., changes to the maximum allowable emission limit for VOCs).	SWDS that would increase methane generation compared to the baseline situation. The project only includes the installation and operation of an LFG capture and electricity generation system. Therefore, the applicability condition defined under paragraph 17 is satisfied.
A6.4-AMM-001	18. The above provisions shall be demonstrated as follows: a) The provisions in paragraphs 11, 12, 14 and 16 be demonstrated in the Project Design Document (PDD) and be assessed at the initial validation; b) The provisions in paragraphs 13 and 17 above shall be demonstrated in each monitoring report and be assessed at each verification; c) The provisions in paragraph 15 may be demonstrated in the PDD and assessed at the validation or demonstrated in the first monitoring report and assessed at the first verification.	The applicability conditions defined in paragraphs 11, 12, 14 and 16 are demonstrated in the Project Design Document (PDD) and will be assessed during validation. The conditions defined in paragraphs 13 and 17 will be demonstrated in each monitoring report and assessed during each verification. As the project activity does not involve heat generation equipment replacement, paragraph 15 is not applicable.
A6.4-AMM-001	19. The applicability conditions included in the methodological tools referred to in paragraph 9 above also apply.	The applicability conditions included in the relevant methodological tools referred to in paragraph 9 are applicable to the project activity. These conditions are demonstrated separately in the subsequent table.

Tool	Applicability Criteria	Justification
A6.4-AMT-001	9. This methodological tool is applicable to Article 6.4 activities that involve emission reductions and/or net removals where its use is explicitly referenced in the applicable mechanism methodology.	The use of A6.4-AMT-001 is explicitly referenced in the applicable mechanism methodology A6.4-AMM-001. Therefore, the applicability condition defined under paragraph 9 is satisfied.
A6.4-AMT-001	10. The methodological tool may only be used if recent data on common practice is available as further elaborated in paragraph 21 below.	Recent data on common practice for LFG capture and electricity generation activities is available for the applicable geographical area (host country). The common practice analysis has been conducted using available data sources including national and international databases and publicly available project registries. Therefore, the applicability condition defined under paragraph 10 is satisfied.
A6.4-AMT-001	11. This methodological tool is applicable to Article 6.4 activities implemented at the project level. The methodological tool may be amended in the future to also cover activities implemented at other scales (e.g. programmes of activities, policies, sectoral approaches, etc.).	The project activity is implemented at the project level, involving the installation and operation of an LFG capture and electricity generation system at a specific existing SWDS. Therefore, the applicability condition defined under paragraph 11 is satisfied.
A6.4-AMT-001	12. This methodological tool may be used by mechanism methodologies related to both emission reductions and net removals.	The project activity involves emission reductions through the capture of LFG (methane) that would otherwise be released to the atmosphere, and the displacement of grid electricity. The applicable

		mechanism methodology A6.4-AMM-001 references this tool in relation to emission reductions. Therefore, the applicability condition defined under paragraph 12 is satisfied.
A6.4-AMT-001	13. Mechanism methodologies intending to use this methodological tool shall include a reference to this methodological tool within the mechanism methodology and shall specify: (a) Which of the following two Approaches shall be used by the activity participants to conduct the common practice analysis, as further elaborated in paragraph 21 and section 7.1 below: (i) Approach A: which is based on the identification of existing “comparable activities” and differentiation between ‘similar’ and ‘different’ activities and is generally suited for discrete, large-scale activities; or (ii) Approach B: which is based on the determination of a ‘target market size’ and the ‘market penetration’ of the relevant technology, measure or practice and is generally suited for highly distributed small-scale technologies and practices.	The applicable mechanism methodology A6.4-AMM-001 includes a reference to A6.4-AMT-001 and specifies the use of Approach A for conducting the common practice analysis. The project activity is a discrete LFG capture and electricity generation facility, which is consistent with the use of Approach A. Therefore, the applicability condition defined under paragraph 13 is satisfied.
A6.4-AMT-001	14. For both Approaches A and B, the mechanism methodology shall specify the following: (a) Whether the indicator of common practice to be used by activity participants when conducting the common practice analysis is: (i) Count-based (i.e., based on the number of units); or (ii) Capacity/output-based (e.g., based on kilowatt hours of electricity produced or megawatt of capacity installed). (b) Whether a stock-based approach (e.g., considering all installed plants to date, or all operational devices to date) or a time-bound approach (e.g., assessing uptake or sales within a defined recent	The applicable mechanism methodology A6.4-AMM-001 specifies the required elements for the common practice analysis conducted under Approach A as follows: (a) A capacity/output-based indicator (installed MW) is used. (b) A stock-based approach is applied, considering all LFG capture and electricity generation projects operational to date.

	period) is used to assess common practice. If a time-bound approach is selected, the mechanism methodology shall clearly define the applicable reference period (e.g., the most recent three years) to be used for assessing common practice; (c) How the applicable geographical area for the common practice analysis shall be determined by activity participants (e.g., global, host country, or sub-national jurisdiction); (d) Whether the scale of output or capacity of the technology, measure, or practice shall be considered for identifying comparable activities under Approach A, or for determining target market size under Approach B and, if so, the mechanism methodology shall specify the output or capacity range to be applied on such cases, or provide clear guidance for how activity participants shall determine such a range and the appropriate justification; (e) What common practice threshold shall be applied to assess whether a technology, measure or practice is considered common practice; (f) Which activities other than the Article 6.4 activity shall be considered comparable to the Article 6.4 activity under Approach A and, within this cohort of comparable activities, which activities shall be considered similar to the Article 6.4 activity and which activities shall be considered different from the Article 6.4 activity (see definitions above), including relevant parameters for such differentiation, in line with the requirements and guidance provided in this methodological tool; (g) How, in the case of Approach B, the market penetration of a given technology, measure or practice and the target	(c) The host country is defined as the applicable geographical area. (d) The scale of installed capacity is considered when identifying comparable activities, consistent with the capacity range of the project activity. (e) The common practice threshold specified in the methodology has been applied. The analysis demonstrates that LFG capture to electricity generation is not common practice in the host country. (f) Comparable activities are defined as renewable energy systems. Similar activities are those generating electricity from LFG. (g) Not applicable, as Approach A is used. Therefore, the applicability condition defined under paragraph 14 is satisfied.
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	market size shall be determined, as further outlined in section 7.6. below.	
A6.4-AMT-001	15. Mechanism methodologies may specify additional provisions for the application of this methodological tool in relation to the mitigation activity types they cover. These may include sector-specific parameters, methodological considerations, or data requirements relevant to conducting the common practice analysis.	The applicable mechanism methodology A6.4-AMM-001 specifies any additional sector-specific provisions for the common practice analysis relevant to LFG capture and utilization activities. The project activity has been assessed against these additional provisions as required. Therefore, the applicability condition defined under paragraph 15 is satisfied.
A6.4-AMT-001	16. Where the mechanism methodology referring to this methodological tool specifies approaches for conducting the common practice analysis that differ from those described in this methodological tool, the requirements contained in the mechanism methodology shall take precedence.	The project activity applies the common practice analysis in accordance with the requirements specified in the applicable mechanism methodology A6.4-AMM-001. Where any provisions in A6.4-AMM-001 differ from those in A6.4-AMT-001, the requirements in A6.4-AMM-001 have been applied. Therefore, the applicability condition defined under paragraph 16 is satisfied.
A6.4-AMT-002	8. This methodological tool is applicable to Article 6.4 activities: (a) That involve removals and/or emission reductions; (b) That are implemented by private or public entities operating in an environment where the decision to implement an activity is mainly based on the consideration of whether the activity is financially attractive or which option is the most or least financially attractive; 1 and (c) Where	The project activity involves emission reductions through LFG capture and electricity generation. The project is implemented by a private entity operating in a commercial environment where investment decisions are based on financial attractiveness.

	it is referred to in the applied mechanism methodology.	The applicable mechanism methodology A6.4-AMM-001 refers to A6.4-AMT-002 for the investment analysis. Therefore, all conditions under paragraph 8 are met and the tool is applicable to the project activity.
A6.4-AMT-002	9. This version of the tool is applicable to Article 6.4 activities implemented at the project level. The tool may be amended in the future to also cover activities implemented at other scales (e.g., programmes of activities, policies, sectoral approaches, etc).	The project activity is implemented at the project level, involving the installation and operation of an LFG capture and electricity generation system at a specific existing SWDS. Therefore, the applicability condition defined under paragraph 9 is satisfied.
A6.4-AMT-002	10. Mechanism methodologies intending to use this methodological tool shall include a reference to this tool within the mechanism methodology and specify the following elements or provide guidance for how activity participants applying this tool shall address them: (a) What realistic and credible alternative scenarios to the proposed Article 6.4 activity, or what minimum list of scenarios, shall be assessed by activity participants in undertaking the investment analysis or how activity participants shall identify these alternative scenarios; ² (b) Which of the methods for investment analysis provided in this tool (simple cost analysis, benchmark analysis, investment comparison analysis) shall be applied by the activity participants or how activity participants may choose between these methods; (c) Where mitigation activities covered by the mechanism methodology do not	The applicable mechanism methodology A6.4-AMM-001 references A6.4-AMT-002 and specifies the relevant elements for conducting the investment analysis, including the alternative scenarios, the investment analysis method, the assessment period, and the applicable financial indicators. An investment analysis has been conducted for the project activity in accordance with these specifications, demonstrating that the project activity is not financially attractive without Article 6.4 revenues. Therefore, the applicability condition

	have an end date of expected operation, what assessment period shall be used by the activity participants in conducting the analysis or how activity participants shall determine the assessment period; (d) Where the investment comparison analysis or benchmark analysis is to be applied by activity participants, specify: (i) Which financial indicator is most suitable for the type of mitigation activity and decision context and shall be used by activity participants, either by specifying an indicator (e.g., net present value (NPV) or internal rate of return (IRR)) and/or by describing how activity participants may choose a suitable financial indicator; (ii) How the sensitivity analysis shall be conducted by activity participants in the context of the type of mitigation activities covered by the methodology, including by specifying which assumptions and parameters should be varied and the degree of these variations or how activity participants shall determine the assumptions and parameters to be varied; and (iii) Whether the type of activities covered by the methodology could (1) only be implemented by the activity participants and not by any other entities³ or (2) be implemented by either the activity participants or other entities⁴ , or how activity participants may make this determination.	defined under paragraph 10 is satisfied.
A6.4-AMT-002	11. Mechanism methodologies may provide further specifications and requirements for how this methodological tool shall be applied by activity participants in the context of the type of mitigation activities covered by the methodology.	The applicable mechanism methodology A6.4-AMM-001 provides further specifications for the application of the investment analysis tool in the context of LFG capture and utilization activities. The project activity has been

		assessed in accordance with these additional specifications. Therefore, the applicability condition defined under paragraph 11 is satisfied.
A6.4-AMT-002	12. Where the mechanism methodology referring to this tool contains requirements for conducting the investment analysis that are different from those described in this tool, the requirements contained in the methodology shall take precedence.	The project activity applies the investment analysis in accordance with the requirements specified in the applicable mechanism methodology A6.4-AMM-001. Where any provisions in A6.4-AMM-001 differ from those in A6.4-AMT-002, the requirements in A6.4-AMM-001 have been applied. Therefore, the applicability condition defined under paragraph 12 is satisfied.
A6.4-AMT-003	8. This methodological tool may be used by mechanism methodologies related to emission reductions.	The project activity involves emission reductions through the capture of methane from an existing SWDS. The applicable mechanism methodology A6.4-AMM-001 references A6.4-AMT-003 for determining methane emissions from the SWDS. Therefore, the applicability condition defined under paragraph 8 is satisfied.
A6.4-AMT-003	9. This version of the methodological tool applies only to Article 6.4 projects and may be amended in the future to cover activities at other scales (e.g., programmes of activities, policies, sectoral approaches) once the adopted standards for the development of mechanism methodologies (e.g., additionality standard, baseline-	The project activity is implemented at the project level and applies the mechanism methodology A6.4-AMM-001, which is designed for Article 6.4 project activities involving LFG capture and utilization at SWDS. Therefore, the

	setting standard) are revised to incorporate other scales.	applicability condition defined under paragraph 9 is satisfied.
A6.4-AMT-003	10. This methodological tool may be used to determine methane emissions from a SWDS for the following types of applications: (a) Application A: The Article 6.4 activity mitigates methane emissions from an existing specific SWDS. Methane emissions are mitigated by capturing and flaring or combusting the methane. The methane is generated from waste disposed in the past, including waste disposed prior to the start of the Article 6.4 activity. In these cases, this methodological tool is only applied for an ex-ante estimation of emissions in the project design document (PDD). Emissions shall then be monitored during the crediting period using the applicable approaches in the relevant mechanism methodologies (e.g. measuring the amount of methane captured from the SWDS); (b) Application B: The Article 6.4 activity avoids or involves the disposal of waste at a SWDS. This applies, for example, where municipal solid waste (MSW) is treated under an Article 6.4 activity using an alternative waste treatment measure, such as composting or anaerobic digestion, and thus prevented from being disposed of in a SWDS. The methane is generated from waste disposed of, or avoided from disposal, during the crediting period. In these cases, the methodological tool shall be applied for both ex-ante and ex-post estimation of emissions. Under this application, activity participants may apply the simplified approach detailed in section 5.1 below when calculating baseline emissions.	The project activity falls under Application A, as it mitigates methane emissions from an existing specific SWDS by capturing LFG and utilizing it for electricity generation. The methane is generated from waste disposed in the past, including waste disposed prior to the start of the project activity. Accordingly, this methodological tool is applied for the ex-ante estimation of methane emissions in the PDD. Emissions are monitored during the crediting period by measuring the amount of methane captured from the SWDS. Therefore, the applicability condition defined under paragraph 10(a) is satisfied.

A6.4-AMT-003	11. These two types of applications are referred to in this methodological tool, for the purpose of determining relevant parameters.	As noted in paragraph 10 above, the project activity falls under Application A of this methodological tool. The relevant parameters for Application A have been applied in the ex-ante estimation of methane emissions in the PDD. Therefore, the applicability condition defined under paragraph 11 is satisfied.
A6.4-AMT-003	12. If (a) different types of residual waste are disposed of or prevented from disposal; or (b) both MSW and residual waste(s) are prevented from disposal, then this methodological tool shall be applied separately to each residual waste type and to MSW.	The project activity is implemented at an existing SWDS that receives municipal solid waste (MSW). The project does not involve different types of residual waste or a combination of MSW and residual wastes that would require separate application of this tool. Therefore, the applicability condition defined under paragraph 12 is not applicable to the project activity.
A6.4-AMT-003	13. This methodological tool may also be applied for: (a) Monitoring the flux of methane leaving the surface a SWDS; and/or (b) Determining the fraction of methane in the landfill gas (LFG) that is oxidized in the soil or other material covering the waste in the SWDS (OXy).	The project activity applies this methodological tool for determining the oxidation factor (OXy) representing the fraction of methane oxidized in the soil covering the waste in the SWDS, as specified in the applicable mechanism methodology A6.4-AMM-001. Surface flux monitoring is not applied under the project activity. Therefore, the applicability condition

		defined under paragraph 13(b) is satisfied, and paragraph 13(a) is not applicable to the project activity.
A6.4-AMT-003	14. Mechanism methodologies intending to use this methodological tool shall include a reference to this tool within the mechanism methodology and shall specify: (a) Whether the methodological tool shall be applied by activity participants to determine methane emissions from SWDS and, if so: (i) For which emission sources the tool shall be applied; (ii) Which of the application cases in paragraph 10 above apply; and (iii) Whether the simplified or regular approach shall be used; (b) Whether the methodological tool shall be applied by activity participants to determine the fraction of methane in the landfill gas (LFG) that is oxidized in the soil or other material covering the waste in the SWDS and, if so, for which purposes this parameter is determined; and/or (c) Whether the methodological tool shall be applied by activity participants to determine the flux of methane leaving the surface a SWDS and, if so, for which purposes the flux is determined.	The applicable mechanism methodology A6.4-AMM-001 references A6.4-AMT-003 and specifies that the tool shall be applied to determine methane emissions from the SWDS under Application A (existing SWDS with LFG capture), using the regular approach for baseline emission estimation. The methodology also specifies the application of the tool for determining OXy. Surface flux determination is not specified in the methodology for this project. Therefore, the applicability conditions defined under paragraph 14(a) and 14(b) are satisfied, and paragraph 14(c) is not applicable to the project activity.
A6.4-AMT-003	15. Mechanism methodologies may specify additional provisions for the application of this methodological tool in relation to the mitigation activity types they cover. Where the mechanism methodology referring to this tool specifies approaches that differ from those described in this tool, the requirements contained in the mechanism methodology shall take precedence.	The applicable mechanism methodology A6.4-AMM-001 specifies any additional provisions for the application of A6.4-AMT-003 in the context of LFG capture and utilization activities. The project activity has been assessed in accordance with these provisions. Where any

		requirements in A6.4-AMM-001 differ from those in A6.4-AMT-003, the requirements in A6.4-AMM-001 have been applied. Therefore, the applicability condition defined under paragraph 15 is satisfied.
A6.4-AMT-004	9. Mechanism methodologies intending to use this methodological tool shall include a reference to this tool within the mechanism methodology and shall specify for which residual gases it shall be applied.	The applicable mechanism methodology A6.4-AMM-001 refers to A6.4-AMT-004 for project activities involving landfill gas (LFG) flaring. The project includes an enclosed backup flare installed exclusively for emergency operation when the electricity generation units are out of service. Under normal operating conditions, all recovered LFG is directed to the electricity generation system. The backup flare is not intended for routine operation, and its use is only for emergency situations or limited start-up and maintenance purposes. Accordingly, project emissions associated with backup flaring are expected to be negligible throughout the crediting period. If the backup flare is operated during the crediting period, the corresponding activity data will be monitored and the associated project emissions will be calculated in accordance

		with A6.4-AMT-004 and reported in the verification processes.
A6.4-AMT-004	10. This tool may be used by mechanism methodologies related to emission reductions.	The project includes an enclosed backup flare intended solely for emergency operation. Since routine flaring is not expected under normal operating conditions, project emissions associated with backup flaring are estimated to be negligible. If the backup flare operate during the crediting period, the associated project emissions will be quantified in accordance with A6.4-AMT-004.
A6.4-AMT-004	11. This version of the methodological tool applies only to Article 6.4 projects and may be amended in the future to cover activities at other scales (e.g., programmes of activities, policies, sectoral approaches) once the adopted standards for the development of mechanism methodologies (e.g., additionality standard, baseline-setting standard) are revised to incorporate other scales.	The project activity applies the methodology A6.4-AMM-001, which refers to A6.4-AMT-004 for the quantification of project emissions associated with backup flaring, where applicable.
A6.4-AMT-004	12. This methodological tool is applicable to the flaring of flammable greenhouse gases in the project scenario where: (a) Methane is the component with the highest concentration in the flammable residual gas; (b) The source of the residual gas is biogenic (e.g., biogas, landfill gas, or wastewater treatment gas); and (c) Electric igniters in the flare are only used for start-up or flame recovery in case of flame quenching.	The project includes an enclosed backup flare intended solely for emergency operation. a) Methane is the principal combustible component of the landfill gas, b) the gas is of biogenic origin, c) and the flare is designed to operate using electric ignition for start-up and flame recovery only.

		Under normal operating conditions, all recovered landfill gas is expected to be utilized for electricity generation.
A6.4-AMT-004	13. This methodological tool is not applicable to the use of auxiliary fuels; therefore, the residual gas must contain sufficient flammable gas to sustain combustion.	The enclosed backup flare is designed to operate without auxiliary fuel. Therefore, the applicability condition specified in paragraph 13 is satisfied.
A6.4-AMT-004	14. In the case of an enclosed flare, this methodological tool is applicable only if the flare is operated in line with the operating instructions specified by the manufacturer.	The project includes an enclosed backup flare, which will be operated in accordance with the manufacturer's operating instructions whenever its operation is required.
A6.4-AMT-004	15. The provisions in paragraphs 12 to 14 above shall be demonstrated in the PDD and assessed at the validation. Moreover, the same provisions shall be demonstrated in each monitoring report and be assessed at each verification.	Compliance with the applicability conditions described in paragraphs 12–14 is demonstrated in the PDD. If the backup flare is operated during the crediting period, the corresponding operating data will be monitored and the associated project emissions will be quantified in accordance with A6.4-AMT-004 and reported in the Monitoring Report.
A6.4-AMT-004	16. The provisions in paragraph 14 above shall be demonstrated in each monitoring report and assessed at each verification.	If the enclosed backup flare is operated during the crediting period, it will be operated in accordance with the manufacturer's operating instructions, and the associated project emissions will be calculated in accordance with A6.4-AMT-004.
A6.4-AMT-004	17. Mechanism methodologies may specify additional provisions for the	No additional applicability provisions specified in the

	application of this tool in relation to the mitigation activity types they cover. Where the mechanism methodology referring to this tool specifies approaches that differ from those described in this tool, the requirements contained in the mechanism methodology shall take precedence.	applicable mechanism methodology affect the application of this methodological tool to the project activity..
A6.4-AMT-005	9. Mechanism methodologies intending to use this methodological tool shall include a reference to this tool within the mechanism methodology and shall specify to which gaseous stream and which greenhouse gases in the gaseous streams it shall be applied.	The applicable mechanism methodology A6.4-AMM-001 references A6.4-AMT-005 and specifies that the tool shall be applied to the LFG stream captured at the SWDS, for the purpose of determining the mass flow of methane (CH ₄) in the captured LFG. Therefore, the applicability condition defined under paragraph 9 is satisfied.
A6.4-AMT-005	10. This methodological tool is used to measure the mass flow of greenhouse gases in gaseous streams under Article 6.4 baseline or project scenarios and may be used by mechanism methodologies related to emission reductions and/or net removals.	The project activity involves measuring the mass flow of methane in the captured LFG stream under the project scenario, which is directly referenced in the applicable mechanism methodology A6.4-AMM-001. The project activity involves emission reductions, and this tool is used to support the quantification of project emissions (methane captured and combusted). Therefore, the applicability condition defined under paragraph 10 is satisfied.
A6.4-AMT-005	11. This version of the methodological tool applies only to Article 6.4 projects and may be	The project activity is implemented at the project level, involving

	amended in the future to cover activities at other scales (e.g., programmes of activities, policies, sectoral approaches) once the adopted standards for the development of mechanism methodologies (e.g., additionality standard, baseline-setting standard) are revised to incorporate other scales.	the installation and operation of an LFG capture and electricity generation system at a specific existing SWDS. Therefore, the applicability condition defined under paragraph 11 is satisfied.
A6.4-AMT-005	12. This methodological tool applies to ideal gases only and shall be updated in the future to incorporate CO ₂ under non-ideal gases condition (e.g., for geological storage).	The project activity applies this methodological tool to measure the mass flow of methane (CH ₄) in the captured LFG stream, which is treated as an ideal gas under standard operating conditions at the SWDS. Therefore, the applicability condition defined under paragraph 12 is satisfied.
A6.4-AMT-005	13. Mechanism methodologies intending to use this methodological tool shall include a reference to it and shall specify: (a) The gaseous streams to which the methodological tool shall be applied to; (b) The greenhouse gas for which the mass flow shall be determined; (c) The time intervals at which the flow of the gaseous stream shall 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 (e.g., where the gaseous stream is predominantly composed of a gas other than N ₂).	The applicable mechanism methodology A6.4-AMM-001 references A6.4-AMT-005 and specifies: (a) the tool is applied to the captured LFG stream; (b) the mass flow of methane (CH ₄) shall be determined; (c) continuous or periodic flow measurement at defined intervals is required; and (d) the simplification for molecular mass calculation is valid for LFG streams predominantly composed of methane and CO ₂ . The project activity applies the tool in accordance with these specifications. Therefore, the applicability condition

		defined under paragraph 13 is satisfied.
A6.4-AMT-005	14. The provisions in paragraph 13 above shall be demonstrated in the Project Design Document (PDD) and in each monitoring report and be assessed at the validation and at each verification.	The applicability conditions and specifications defined in paragraph 13 of A6.4-AMT-005 are demonstrated in this Project Design Document (PDD) and will be assessed during validation. The same provisions will be demonstrated in each monitoring report and assessed at each verification. Therefore, the applicability condition defined under paragraph 14 is satisfied.
A6.4-AMT-005	15. Mechanism methodologies may specify additional provisions for the application of this tool in relation to the mitigation activity types they cover. Where the mechanism methodology referring to this tool specifies approaches that differ from those described in this tool, the requirements contained in the mechanism methodology shall take precedence.	The applicable mechanism methodology A6.4-AMM-001 specifies any additional provisions for the application of A6.4-AMT-005 in the context of LFG capture and utilization activities. The project activity has been assessed in accordance with these provisions. Where any requirements in A6.4-AMM-001 differ from those in A6.4-AMT-005, the requirements in A6.4-AMM-001 have been applied. Therefore, the applicability condition defined under paragraph 15 is satisfied.

B.3. Project boundary

In line with the requirements of A6.4-AMM-001 Flaring or use of landfill gas Version 01.0, the project boundary of the project activity include the site where the LFG is captured and, as applicable:

- Site where the LFG is captured and used;
- Power generation sources connected to the grid, which are supplying electricity to the project activity
- Power generation sources connected to the grid, which are supplying electricity in the baseline that is displaced by electricity generated by captured LFG in the project activity;

The project activity is connected to the Turkish national electricity grid. The geographic and system boundaries of the electricity grid are clearly identified, and the electricity generated by the project activity is exported to the Turkish national grid. Baseline emissions associated with electricity generation are determined in accordance with the applicable provisions of A6.4-AMM-001 Version 01.0.

The gases and sources relevant to the project are listed in the below table.

	Source	GHGs	Included?	Justification / Explanation
Baseline Scenario	Emissions from decomposition of waste in the SWDS (venting or flaring)	CO ₂	No	Not accounted for since the CO ₂ is also released in the Article 6.4 activity scenario
		CH ₄	Yes	Major emission source
		N ₂ O	No	Emissions are small compared to CH ₄ emissions from SWDS and exclusion is conservative
	Emissions from electricity generation by power plants connected to the electric grid or captive power plant(s) displaced by the Article 6.4 activity	CO ₂	Yes	Major emission source if the project involves the generation of electricity using LFG
		CH ₄	No	Excluded for simplification and conservativeness
		N ₂ O	No	Excluded for simplification and conservativeness
Project Scenario	Emissions from on-site fossil fuel consumption for purposes other than electricity generation	CO ₂	Yes	Significant emission source if fossil fuels are consumed to operate the project
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification
	Emissions from on-site electricity consumption	CO ₂	Yes	Significant emission source if electricity is consumed to operate the project
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification
		CO ₂	No	Not accounted (biogenic)

Emissions from	CH ₄	Yes	Significant emission source
flaring of LFG	N ₂ O	No	Excluded for simplification

Although project scenario emissions identified in table above include potential electricity and fossil fuel consumption sources, the proposed project activity does not currently require external electricity consumption or fossil fuel use during normal operation.

The project activity generates electricity from landfill gas, and a portion of the generated electricity is consumed internally for the operation of project equipment and systems in the project activity of the Monitoring Plan. The remaining net electricity generated is supplied to the grid. Therefore, the operational processes of the project activity are sustained through self-generated electricity, without the need for external electricity import or fossil fuel consumption under current operating conditions.

For this reason, the relevant project emission formulas have been included in the calculation framework solely for completeness, transparency, and verification purposes, while the corresponding emission values have been conservatively set to zero based on the actual operating conditions of the project activity.

The inclusion of these formulas is intended to ensure that any potential future external electricity consumption or fossil fuel use, should such situations arise during the crediting period, can be properly monitored and accounted for within the established monitoring framework.

As presented by the below figure, the physical boundary of the project are the components of the project activity in which the gas will be captured and utilized/destroyed (including gas collection system, electric generators and flaring system) and their connection to the Turkish National Grid.

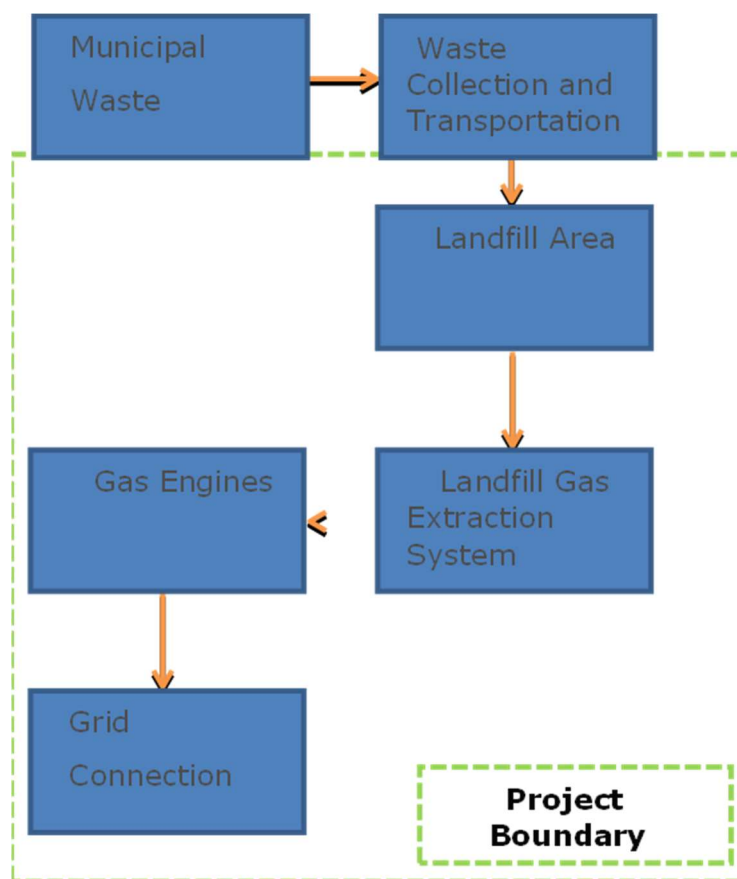


Figure 2. Project Boundary

B.4. Establishment and description of baseline scenario

Identification of components and sub-components of the Article 6.4 activity

In accordance with paragraphs 37 and 38 of A6.4-AMM-001, the baseline scenario and baseline emissions are determined separately for each applicable component and sub-component. The following components and sub-components apply to the project activity:

(a) Methane Component: The project activity is implemented at an existing SWDS where methane generated through the anaerobic decomposition of Municipal Solid Waste would otherwise be released to the atmosphere in the absence of the project activity. Accordingly, the methane component is applicable to the project activity.

(b) Electricity Generation Component — Sub-component (i) The project activity involves the generation of electricity from the captured LFG, which is supplied to the national grid. Therefore, sub-component (b)(i) is applicable to the project activity. Sub-components (b)(ii) and (b)(iii), which relate to the replacement of captive fossil fuel fired power plants, are not applicable.

(c) Heat Generation Component The project activity does not involve heat generation. Therefore, the heat generation component and its sub-components (c)(i) and (c)(ii) are not applicable to the project activity.

(d) Supply of LFG or Biomethane to Consumers Component The project activity does not involve the supply of LFG or biomethane to consumers through any distribution network, trucks, or dedicated pipeline. Therefore, the supply component

and its sub-components (d)(i), (d)(ii), and (d)(iii) are not applicable to the project activity.

In summary, the applicable components for this project activity are the methane component (a) and the electricity generation component, sub-component (b)(i).

Selection of the Baseline Approaches from Paragraph 36 of the Rules, Modalities and Procedures

In accordance with paragraph 39 of A6.4-AMM-001, the baseline approaches applicable to the project activity are selected for each relevant component as follows:

(a) Methane Component

The project activity is developed at an existing SWDS. Therefore, in line with paragraph 39(a)(i) of A6.4-AMM-001, the baseline for the methane component is determined through existing actual or historical emissions (paragraph 36(iii) of the RMPs). This approach is applied because data from existing SWDSs is strongly heterogeneous and methane emissions are highly site-specific, depending on factors such as the climate, waste composition, and operational characteristics of the specific SWDS.

(b) Electricity Generation Component

The electricity generated by the project activity is supplied to the national grid. Therefore, in line with paragraph 39(b)(i) of A6.4-AMM-001, the baseline for the electricity generation component is determined through existing actual or historical emissions (paragraph 36(iii) of the RMPs).

(c) Heat Generation Component

The project activity does not involve heat generation. Therefore, the baseline approach defined under paragraph 39(c) of A6.4-AMM-001 is not applicable to the project activity.

(d) Supply of LFG or Biomethane to Consumers Component

The project activity does not involve the supply of LFG or biomethane to consumers. Therefore, the baseline approach defined under paragraph 39(d) of A6.4-AMM-001 is not applicable to the project activity.

In summary, for both applicable components of the project activity, the baseline is determined through existing actual or historical emissions in accordance with paragraph 36(iii) of the RMPs, as specified in paragraphs 39(a)(i) and 39(b)(i) of A6.4-AMM-001.

In accordance with paragraph 40 and Table 2 of A6.4-AMM-001, the baseline scenarios applicable to the project activity are as follows:

Component	Baseline Approach	Baseline Scenario
LFG – Article 6.4 activity implemented in an existing SWDS	Existing actual or historical emissions	The continuation of the pre-activity scenario, whereby the methane generated at the existing SWDS is emitted to the atmosphere without capture or treatment in the absence of the project activity.

Electricity generation and supply to the electric grid	Existing actual or historical emissions (grid emission factor)	The continuation of the pre-activity scenario, whereby the same amount of electricity would have been generated by existing power plants connected to the same national electricity grid.
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Identification of the conservative Business-as-usual scenario

In accordance with Section 7.5 of A6.4-AMM-001, the conservative Business-as-Usual (BAU) scenario has been identified separately for each component of the proposed Article 6.4 activity. The applicable BAU scenarios are summarized in Table below.

Table 3. Identification of the Conservative Business-as-Usual (BAU) Scenario

Project Component	Baseline Approach	Conservative BAU Scenario
Landfill gas management (existing SWDS)	Existing actual or historical emissions	Continuation of the historical situation, i.e. continued collection and destruction of landfill gas to address legal requirements, contractual requirements and safety and odour concerns.
Electricity generation supplied to the grid	Existing actual or historical emissions (grid emission factor)	Continuation of the historical situation, i.e. electricity generation from power plants connected to the grid.

The proposed Article 6.4 activity is implemented at an existing solid waste disposal site where landfill gas is collected and utilized for electricity generation. Therefore, the applicable conservative BAU scenarios are the continuation of the historical situation for both the landfill gas management and electricity generation components, as defined in Table 4 of the methodology.

In accordance with paragraph 142 of the methodology, the identification of the BAU scenario considers all applicable legal requirements as well as relevant national policies and sectoral targets expected to be effective during the crediting period.

B.5. Demonstration of additionality

In accordance with paragraph 23 of A6.4-AMM-001, additionality is demonstrated through the following four analyses:

1. Regulatory Analysis
2. Lock-in Analysis
3. Investment Analysis
4. Common Practice Analysis

1. Regulatory Analysis

In accordance with paragraphs 25–27 of A6.4-AMM-001, a regulatory analysis has been conducted to confirm that the emission reductions resulting from the project activity would not occur as a result of any applicable legal requirements. The relevant legislation in Turkey has been reviewed against each of the conditions specified in paragraph 25 as follows:

(a) Explicit requirement to install an LFG capture and flaring or utilization system The Regulation on Solid Waste Control¹⁷ does not explicitly require SWDSs to install an LFG capturing and flaring system or an LFG capturing and utilization system. The regulation addresses solid waste management obligations in general terms but do not prescribe any specific technology or mandate LFG capture.

Article 8(2) of the Regulation on Sanitary Landfilling¹⁸ states that landfill gas generated at sanitary landfill facilities accepting biodegradable waste shall be collected and used for energy generation or, where energy recovery is not economically feasible, combusted in flares. This provision has been assessed in accordance with paragraph 25(a) of the methodology. While the regulation establishes a general requirement regarding the management of landfill gas, it does not prescribe the implementation of a specific landfill gas collection and utilization system or define the technical means by which compliance must be achieved. Furthermore, although this regulatory provision was already in force at the time of project implementation, landfill gas collection and utilization systems were not widely implemented across sanitary landfill sites in Türkiye. Therefore, the existence of this regulatory provision alone does not demonstrate that the emission reductions achieved by the proposed Article 6.4 activity would have occurred in the absence of the project activity.

(b) Waste treatment requirements only achievable through LFG collection and flaring or utilization The applicable regulations do not include any waste treatment requirements that can only be achieved by collecting and flaring LFG or by collecting and utilizing LFG for energy purposes. The Regulation on Solid Waste Control is instructive rather than normative and does not define specific technical measures for achieving compliance.

(c) Prohibition of specific waste treatment technologies mandating LFG collection and utilization No applicable legal or regulatory requirement in Turkey prohibits the use of specific waste treatment technologies or mandates the collection, flaring, and/or utilization of LFG for energy as part of a prescribed waste treatment technology or practice.

(d) Support scheme designed to achieve quantitative methane destruction targets The Renewable Energy Law¹⁹ provides a feed-in tariff for electricity generation from renewable sources. However, this support scheme is not designed to achieve a quantitative target for methane destruction at SWDSs, is not specifically applicable to

¹⁷ <https://www.cmo.org.tr/kati-atiklarin-kontrolu-yonetmeligi-16769>

¹⁸ <https://mevzuat.gov.tr/mevzuat?MevzuatNo=13887&MevzuatTur=7&MevzuatTertip=5>

¹⁹ <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf>

the collection of LFG and its destruction or utilization, and would not likely result in the same amount of emission reductions in the absence of the project activity.

Overall, the applicable legal requirements, including Article 8(2) of the Regulation on Sanitary Landfilling, have been assessed in accordance with paragraphs 25–27 of the methodology. Although the regulation includes provisions related to landfill gas management, it does not establish a support scheme or other regulatory mechanism that would ensure that the same emission reductions would occur in the absence of the proposed Article 6.4 activity. Accordingly, the emission reductions achieved by the project activity are not considered to result solely from compliance with legal requirements, and the project activity remains eligible under the methodology.

2. Lock-in Analysis

The SWDS at which the project activity is implemented is currently closed and no longer accepting waste.²⁰ In accordance with paragraph 28 of A6.4-AMM-001, Article 6.4 activities implemented at closed SWDSs are deemed to not have a lock-in risk, as the implementation of the activity does not prolong the lifetime for which emissions occur but rather reduces them.

Nevertheless, considering that the SWDS may potentially reopen and resume waste acceptance in the future, the requirements of paragraph 29 of A6.4-AMM-001 have also been addressed. The activity participants confirm that revenues from A6.4 ERs will not prolong reliance on landfilling practices or create or exacerbate barriers to the implementation of alternative, lower-emission waste management practices. The project activity is limited to the capture and utilization of landfill gas from waste already disposed of at the SWDS and does not involve any expansion of the landfill, increase in waste acceptance capacity, or modification of waste management practices. Any future decision regarding waste acceptance is independent of the project activity and the associated A6.4 ER revenues and will be made in accordance with the applicable legislation and the decisions of the competent authorities. In addition, under the agreement between the Project Owner and the Municipality, the Project Owner is authorized only to capture and utilize landfill gas for electricity generation, while the management of the SWDS, including decisions regarding waste acceptance, remains under the responsibility of the Municipality²¹. Therefore, the Project Owner does not have the authority to determine or prolong waste acceptance at the SWDS through the project activity or the associated A6.4 ER revenues.

The project activity is consistent with the waste sector objectives set out in Türkiye's Updated First Nationally Determined Contribution (NDC)²² and the 2053 Long-Term

²⁰ Signed declaration by the Project Owner, is submitted to VVB, confirming that the SWDS is currently closed and no longer accepting waste.

²¹ Agreement between the Project Owner and the Municipality confirming the Project Owner's authority to capture and utilize landfill gas for electricity generation, while SWDS management and waste acceptance remain under the Municipality's responsibility. The agreement has been provided to the VVB.

²² <https://unfccc.int/NDCREG>

Climate Strategy (LT-LEDS)²³, as it reduces methane emissions from landfill gas without encouraging additional landfilling.

3. Investment Analysis

According to A6.4-AMM-001: Flaring or use of landfill gas - Version 01.0, the realistic and credible alternative scenario is identified using the "A6.4-AMT-002 methodological tool : Investment Analysis Version 01.0".

In line with the requirements of A6.4-AMM-001, these alternatives are defined as follows:

For the capture and destruction of the LFG:

- a) LFG1: The Article 6.4 activity is implemented without being registered under the Article 6.4 mechanism (i.e., capture and flaring or use of LFG);
- b) LFG2: Atmospheric release of the LFG in a managed or unmanaged SWDS;
- c) LFG3: Capture of LFG in a managed SWDS and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for other reasons;
- d) LFG4: LFG generation is partially avoided because part of the organic fraction of the solid waste is recycled and not disposed in the SWDS;
- e) LFG5: LFG generation is partially avoided because part of the organic fraction of the solid waste is treated aerobically and not disposed in the SWDS;
- f) LFG6: LFG generation is partially avoided because part of the organic fraction of the solid waste is incinerated and not disposed in the SWDS.

For the electricity generation:

- a) E1: Electricity generation from LFG, undertaken without being registered under the Article 6.4 mechanism;
- b) E2: Electricity generation in existing or new renewable or fossil fuel based captive power plant(s);
- c) E3: Electricity generation in existing and/or new grid-connected power plants.

As the project does not involve thermal energy generation or the supply of LFG or biomethane to consumers, all the alternatives for heat generation and the supply of LFG or biomethane are not included in the analysis.

Alternatives LFG 3, 4, 5 and 6 as well as E 2 has been excluded from further consideration as a realistic alternative, which is explained as follows:

²³ https://unfccc.int/sites/default/files/resource/Turkiye_Long_Term_Climate_Strategy.pdf

Reference	Alternative	Justification
LFG 3	Capture of LFG in a managed SWDS and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for other reasons	There are no regulatory requirements, contractual obligations, or safety/odour concerns that mandate the flaring of LFG at this SWDS. In the absence of such requirements, flaring does not represent a financially attractive or environmentally beneficial alternative, as it destroys the energy potential of the captured LFG without generating any useful output. Therefore, Alternative LFG 3 has been excluded from further evaluation.
LFG 4	LFG generation is partially avoided because part of the organic fraction of the solid waste is recycled and not disposed in the SWDS	It is not realistic to consider recycling of solid waste which has been subject to decomposition for over 15 years as a realistic and credible alternative. Alternative LFG 4 has been excluded from further evaluation.
LFG 5	LFG generation is partially avoided because part of the organic fraction of the solid waste is treated aerobically and not disposed in the SWDS	It is not realistic to consider aerobic treatment of solid waste which has been subject to decomposition for over 15 years as a realistic and credible alternative. Alternative LFG 5 has been excluded from further evaluation.
LFG 6	LFG generation is partially avoided because part of the organic fraction of the solid waste is incinerated and not disposed in the SWDS	It is not realistic to consider incineration of solid waste which has been subject to decomposition for over 15 years as a realistic and credible alternative. Alternative LFG 6 has been excluded from further evaluation.
E 2	Electricity generation in existing or new renewable or fossil fuel based captive power plant(s)	There is no existing electricity generation in the SWDS. Also, there are no available renewable energy resources (hydro, geothermal, wind etc.) in or close to the vicinity of the SWDS. Alternative E 2 has been excluded from further evaluation.

Based on the above arguments, two alternatives' scenarios could be identified:

Scenario	Description of situation		
	Landfill Gas	Electricity	

1	LFG 1	E 1	Project activity including power generation from LFG without being registered as a VER project activity.
2	LFG 2	E 3	Atmospheric release of the LFG and electricity would have been generated by the existing grid connected power plants as continuation of the situation before the project activity.

Benchmark Analysis Method for Investment Analysis

In accordance with paragraph 25 of the Investment Analysis tool, the investment analysis for this project has been carried out using the benchmark analysis method (option b). This method involves a comparison of the financial attractiveness of the Article 6.4 activity against a financial benchmark.

The benchmark analysis is appropriate for this project as the project activity generates revenues through the sale of electricity to the grid and therefore has a calculable Internal Rate of Return (IRR). The project IRR is compared against a benchmark rate reflecting the minimum acceptable return for investors in similar projects in the host country. If the project IRR falls below the benchmark rate in the absence of Article 6.4 Emission Reductions (A6.4ERs), it demonstrates that the project is not financially attractive without carbon finance, thereby confirming its additionality.

In accordance with paragraph 29 of the tool, the benchmark analysis is applicable as the only alternative scenario to the Article 6.4 activity is the continuation of the current situation without any alternative investment by the activity participants.

The analyses include all identified alternative scenarios (Scenario 1 and Scenario 2). Since Scenario 2 corresponds to continuation of the current situation not requiring any investment or expenses to maintain, the financial indicator (Equity IRR) of scenario 1 will be compared against the benchmark.

Identification of the financial indicator

The following benchmark analysis applies the equity IRR as financial indicator. The Equity IRR is considered to be a suitable and widely used financial indicator to determine the attractiveness of equity investments.

When analysing a potential project, investors compare the equity IRR of the project against their required rate of return.

Calculation of financial indicators for alternative scenarios

Scenario 2:

In line with the requirements of applied tool the financial has been determined using government bond rates increased by a suitable risk premium to reflect private investment and the project type.

The expected return on equity is determined as 20%. According to the Project Appraisal Document of World Bank to TSKB (Turkish Industrial Development Bank), technologies that are newer in the Turkish market, such as biomass are expected to require a higher

risk adjusted returns. Therefore the threshold IRR on equity for biomass is proposed at 20%.²⁴

The calculation of the equity IRR of the proposed project activity includes all relevant costs and revenues, excluding any revenues from VERs. The key financial parameters applied to the project activity are presented in Table below.

Table 4. Key financial parameters applied to the project activity

Parameter	Unit	Value
Total Investment Cost	\$	17,432,000 ²⁵
Loan	%	50
Equity	%	50
Installed Capacity	MW	9.8
Annual Electricity Generation	GWh/year	68.6
Electricity tariff	\$cent/kWh	7.28 ²⁶
Annual Operational Expenses	\$	1,764,000
Municipality Share	%	41

- The calculation of the equity IRR of the proposed project activity includes all relevant costs and revenues.
- Input values used in all investment analysis are valid at the time of investment decision taken by the project participant, which is referred as the date of Board Decision dated 10.12.2010.
- 50% debt and 50% equity financing has been assumed as a default.
- The equity IRR has been calculated over a 21 year period²⁷.
- Only the portion of the investment costs which is financed by equity have been considered as the net cash outflow and the portion of the investment cost which is financed by debt have not been considered as a cash outflow.
- Taxation has not been included as an expense in the equity IRR calculation²⁸.
- The technical lifetime of a gas engine is considered to be 50,000 hours which approximately corresponds to 7 years of continuous full-load operation. In the

²⁴ Reference: World Bank Document

<https://documents1.worldbank.org/curated/en/112271468311114629/pdf/468080PAD0P112101Official0Use0Only1.pdf>

²⁵ <https://documents1.worldbank.org/curated/en/892171468766767158/pdf/multi-page.pdf>

²⁶ At the time of the investment decision the guaranteed electricity tariff was 5.5 €cent/kWh which is equal to 7.28 \$cent/kWh with an exchange rate of 1.3245 €/€ on 10.12.2010.

²⁷ Although the technical lifetime of gas fired engines (the most critical equipment of the system) is estimated as 7-8 years (please refer to EB 50Annex 15), the financial analysis has been conducted over a conservative value of 21 years.

²⁸ There is no clear information on whether the Benchmark indicator is intended for post-tax comparison or not. Therefore as a conservative approach, the equity IRR has been calculated for pre-tax.

project case, this would imply that the engines would need to be replaced at least twice over a 21-year period under continuous full-load conditions. However, this assumption does not reflect the actual operating conditions of landfill gas utilization projects. Landfill gas generation naturally varies over time depending on landfill characteristics, waste composition, waste acceptance rates, and the stage of waste degradation. Consequently, the quantity of available landfill gas is not sufficient to operate all gas engines simultaneously at full capacity throughout the entire operating period. In addition, the gas engines are periodically taken offline for routine maintenance, scheduled overhauls, and operational optimization. During periods when one or more gas engines are not operating or when the available landfill gas exceeds the utilization capacity of the operating engines, the collected landfill gas is diverted to the enclosed flare and combusted. Accordingly, landfill gas is continuously managed either through electricity generation or by flaring, ensuring continuous destruction of collected methane and preventing uncontrolled methane emissions. As a result, the cumulative operating hours of each individual engine remain significantly below the theoretical full-load lifetime threshold. Furthermore, the engines are subject to regular maintenance and scheduled major overhauls in accordance with the manufacturer's maintenance procedures, including the replacement of key components, ensuring their continued technical operability throughout the next crediting period. This has not been taken into account in the financial analysis.

- The annual operational cost is assumed to be as 180\$/kW annually.²⁹
- The landfill area covers 83 hectares in total.

The result of the equity IRR calculated for Scenario 1:

Table 5. Equity IRR of Scenario 1

Equity IRR of Scenario 1: Project activity including power generation from LFG without being registered as a VER project activity	%	-0.05
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Table 6. Comparison of financial indicators

Alternative Scenario	Financial Indicator	Value
Scenario 1: Project activity including power generation from LFG without being registered as a VER project activity.	Equity IRR	-0.05%

²⁹ Reference: <https://pdhonline.com/courses/c435/LFG%20to%20Energy%20Project%20Handbook.pdf> (Table3-4)

Scenario 2: Atmospheric release of the LFG and electricity would have been generated by the existing grid connected power plants as continuation of the situation before the project activity.	Expected return on equity	20%
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It could be seen that the equity IRR of -0.05% of Scenario 1 is far below the benchmark value of 20% (financial indicator representing Scenario 2) and cannot be considered to be a financially attractive alternative.

Sensitivity Analysis

The objective of the sensitivity analysis is to show whether the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions. The critical parameters identified as having an impact on the financial indicator of the project activity are: total investment, electricity price, electricity generation, and general overheads. The mentioned parameters have been changed significantly to result with equity IRR close or equal to the benchmark value (financial indicator of Scenario 2) and the probability of the increase/decrease of the parameter has been discussed further on.

The following table demonstrates the value of the parameters that results with equity IRR close or equal to the benchmark.

Table 7. Sensitivity Analysis of the equity IRR with variations in total investment, electricity price, electricity generation, investment and general overheads.

Variance Parameter	10%	0%	-10%	Variance Required to Reach Benchmark (%)
Electricity Generation	2.71%	-0.05%	-3.26%	90%
Investment	-0.87%	-0.05%	0.89%	-87%
Operating Expenses	-2.02%	-0.05%	1.75%	-136%
Electricity Price	2.71%	-0.05%	-3.26%	90%

Discussion on the Probability of the Deviations:

Electricity Price: The equity IRR reaches the benchmark threshold only when an electricity price increase of 90% is consistently applied throughout the entire 21-year period. At the time of the investment decision, the guaranteed electricity price for facilities generating electricity based on renewable energy sources including LFG was 7.28 \$cent/kWh (equivalent to 5.5 €cent/kWh). Following the revision of the "Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy," the guaranteed electricity price for electricity generated from biomass resources (including LFG) was set at 13.3 \$cent/kWh, applicable for 10 years. Even under this revised tariff, the equity IRR of the project activity increases only to 15.13%, which remains significantly below the benchmark value.

Electricity Generation: The equity IRR reaches the benchmark threshold only when electricity generation increase of 90%, which is scientifically impossible. Therefore, it is not realistic to expect electricity generation to reach this level.

Operational Expenses: The calculation shows that the equity IRR reaches only when operational costs decrease of 136%, which is not possible in practice. Therefore, variations in operational expenses cannot bring the equity IRR to the benchmark level.

Total Investment: The equity IRR reaches only when total investment costs decrease of 87%. Therefore, this assumption is not realistic for the proposed project activity.

Outcome of Sensitivity Analysis: The sensitivity analysis clearly demonstrates that the equity IRR of the proposed project activity does not overcome the financial benchmark despite favourable conditions. The sensitivity analysis further substantiates that the project activity is not financially attractive without revenues from A6.4ERs and therefore qualifies as additional.

4. Common Practice Analysis

Step 1 – Approach and Indicator

In accordance with paragraph 20 of the A6.4-AMT-001: Common practice analysis tool, the common practice analysis is conducted using Approach A with a count-based indicator (number of comparable activities). The common practice threshold ($F_{\max}$) is set at 16% as prescribed by the applicable mechanism methodology.

Step 2 – Applicable Output or Capacity Range

The analysis considers all Article 6.4 project activities defined under the methodology, including (a) Activity 1: LFG capture and flaring; (b) Activity 2: LFG capture and use for electricity generation; (c) Activity 3: LFG capture and use for heat generation; (d) Activity 4: LFG capture, supply of LFG or biomethane to consumers; and (e) Activity 5: any combination of Activities 2 to 4.

The applicable output range or the design capacity of the proposed capacity is calculated as 4.9 MWe – 14.7 MWe.

The Bursa-Hamitler LFG project falls under Activity 2: LFG capture and use for electricity generation.

Step 3 – Applicable Geographical Area

The applicable geographical area is Turkey. This is appropriate as Turkey represents a coherent regulatory, economic, and technological environment relevant to the assessment of common practice for LFG electricity generation projects.

Step 4 – Identification of Comparable Activities

According to the official report "*Turkish Electrical Energy 10 Years Projection on Generation Capacity 2012–2021*"³⁰ published by TEİAŞ, as of the end of 2011 there were a total of 11 waste-to-energy facilities in Türkiye.

In addition, according to the Ministry of Environment, the total number of managed solid waste disposal sites in 2011 was 46. Out of these, only 11 facilities were generating energy, while 35 sites were operating without any energy recovery.

Among the existing waste-to-energy facilities, 4 plants had already been commissioned before the start date of the Bursa-Hamitler LFG project. Therefore, the total number of comparable activities (SWDS and LFG energy recovery plants) considered as of the start date is 39.

Accordingly, it is noted that;

$$N_{\text{all}} = 39$$

Since $N_{\text{all}} = 39 \geq 3$, the dataset is sufficiently large to proceed with the analysis.

Step 6 – Total Number of Similar Activities

Similar activities are specifically defined as LFG-based electricity generation projects. Four such projects exist in Turkey as of the project start date.

$$N_{\text{sim}} = 4$$

Step 7 – Common Practice Factor (F)

$$F = N_{\text{sim}} / N_{\text{all}} = 4 / 39 = 10.26\%$$

Step 8 – Comparison with Threshold

$F (10.26\%) < F_{\text{max}} (16\%) \rightarrow$ The activity is not common practice.

B.5.1 Prior Consideration

The project activity is already registered with GS and the weblink of the same is outlined below: <https://registry.goldstandard.org/projects/details/53>

B.5.2 Ongoing Financial Need

Implementation of the project activity has been constrained by multitude of barriers including but not limited to "access to financing" due to unfavourable investment and financial structure which results in high risks and limited access to project financing. Implementation of the waste management project requires high level of financing and

³⁰ Please see; ANNEX 1 "Current System as of end of 2011" (page 118).
(<https://s1p.doczz.net/store/data/000189035.pdf?key=3fa9e1a93a26668a7ab9b69b4c1a2179&r=1&fn=189035.pdf&t=1778833917858&p=86400>.)

long repayment periods. In addition, waste management project (coupled with power generation) investments are perceived as investments with high risks as it is coupled with unfavourable investment conditions due to several reasons like uncertainty in electricity generation, prevailing practice and impact of feed in tariff. The amount of electricity generated and sold to the grid is the only source of company's income and is central to the project's cash flow. However, the electricity generation potential has a considerable margin of error related to the estimation of gas generation, depending on the unpredictable behaviour of landfill gas. Adding to the difficulty in estimating landfill gas generation is the complexity of rehabilitating an uncontrolled waste dump. The installing of the gas extraction system is marked by uncertainty and the composition of the waste beneath. Water table levels within the landfill are unknown and can vary strongly, thus adds a lot of uncertainty to the calculated gas generation potential.

Waste management projects need a high level of financing and long repayment periods. In the project activity, 80% of the investment is realised with debt funding with a repayment period of 6 years and 20% from equity. However, the project developers face certain barriers to secure loan from finance institutions / creditor banks. The project participant was only able to obtain debt funding by demonstrating the additional revenues from VERs. Even the financial analysis (equity IRR) carried out for the project represented a negative return. Furthermore, the financial analysis including a separate scenario with carbon revenue has been conducted for the project. In order to maintain a conservative approach, VER revenues were estimated based on projected emission reductions under full operational capacity assumptions. The analysis demonstrates that the project is unable to achieve the benchmark equity IRR without carbon revenue and can only reach the benchmark level under a VER price assumption of 7.35 USD/tCO_{2e} or higher. This demonstrates that continued carbon revenue remains essential for the sustained operation and financial sustainability of the project under the current circumstances.

The revenue realisation of project as envisaged to cover up the debt from the first crediting period is constrained by multiple factors outlined below:

1. With the drastic and inordinate dip in the price of voluntary credits in the global carbon market, the carbon market got totally distressed. These incidents had forbidden the project proponent to realise revenue from sale of VER. Jeopardised with the burden of non-revenue realisation from carbon credit the project proponent was unable to remit the debt in proper schedule, nor could carry out expenditure required to cover the periodic cost of verification and certification.
2. Emergence of COVID further complicated the financial situation of the project proponent and imposed constraints to repay the debt.

Inability of the project proponent to remit the debt in proper time and schedule enhanced the interest accrual and imposed additional debt burden over the project proponent. Realisation of carbon revenue is therefore essential to ensure the financial sustainability of the project towards ensuring contribution of sustainable development by the project.

The project proponent due the ongoing financial challenges could not facilitate the verification for the remaining monitoring cycle of the first crediting period although

monitoring was carried out for the said period. Therefore, the realisation of carbon credit during the first crediting period was much lower than the total expected carbon credits planned to be monetised during the first crediting period. Moreover, the reduction in the per unit credit rate in compared to the investment decision period further lowered the revenue realisation.

It is in the context of the ongoing financial requirement, towards reducing the financial constraint of the project proponent and enhance project operational sustainability the revenue from sale of VER credit is essential for the project. Moreover, there has been no change of policy/market which may impact on the project finance including that of electricity tariff, O&M cost, investment cost and annual electricity export to the national grid during the 3rd crediting period.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

SUSTAINABLE DEVELOPMENT GOALS TARGETED			MOST RELEVANT SDG TARGET		SDG IMPACT	
					INDICATOR (PROPOSED OR SDG INDICATOR)	
13	Climate (mandatory)	Action	13.2	Integrate climate change measures into national policies, strategies and planning	13.2.2	Total greenhouse gas emissions per year
SDG 7– Ensure access to affordable, reliable, sustainable and modern energy for all			7.2	By 2030, increase substantially the share of renewable energy in the global energy mix.	7.2.1	Renewable energy share in the total final energy consumption.
SDG 8	– Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		8.5	By 2030 achieve full and productive employment and decent work for all women and men including young people and persons with disabilities, and equal pay for work of equal value	Impact- generated through project Indicator Average	Employment through project 8.5.1 hourly earnings of female and male employees, by occupation, age and persons with disabilities

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

SDG Goal	Methodological choices/approaches for estimating the SDG outcome
SDG 7 – Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all. (7.2 ‘By 2030, increase substantially the share of renewable energy in the global energy mix.”)	Measurement Method: Electricity produced and supplied to the grid is monitored through energy meter. Monthly protocols (EPIAS Records) will be received from grid operator and stored. QA/QC Process: This parameter is monitored monthly, and value of parameter is cross checked OSOS (Automatic Meter Reading System) records . The meters are calibrated on regular frequency.
SDG 8 – Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, full and productive employment and decent work for all (8.5 By 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”)	Measurement Method: Training and employment generation is monitored through training records; staff register or letter from O&M contractor for training and employment details or SSI records. QA/QC Process: This parameter is based on records, data and no QA/QC procedure required. The VVB can confirm this parameter with interview with PP or Site in charge or employees for training and employment generation.
SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts. (13.3. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.)	Measurement Method: The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The emission reductions are calculated as per registered PDD and as per methodology requirement. QA/QC Process: This parameter is calculated, and no QA/QC procedure required.

Explanation of Methodological Choices

The emission reductions resulting from the project is calculated according to A6.4-AMM-001 “Flaring or Use of Landfill Gas” Version 01.0.

According to the referred methodology the emission reductions are calculated with the following equation:

$$ER_y = BE_{adj,y} - PE_y - LE_y \quad \text{Equation 55 in A6.4-AMM-001 V01.0}$$

Where:

- ER_y = Emission reductions in year y (tCO₂e/year)
- $BE_{adj,y}$ = Downward adjusted baseline emissions in year y (tCO₂e/year)

- PE_y = Conservative project emissions in year y (tCO₂e/year), determined by applying the uncertainties required in section 8.2 above to the parameters from Equation (45) above
- LE_y = Leakage emissions in year y (tCO₂e/year)

Baseline Emissions

The downward adjusted baseline emissions from the Article 6.4 activity is determined based on the equation below:

$$BE_{adj,y} = BE_{CH_4,adj,y} + BE_{EG,adj,y} + BE_{HG,adj,y} + BE_{NG,adj,y} \quad \text{Equation 37 in A6.4-AMM-001 V01.0}$$

Where:

- $BE_{adj,y}$ = Downward adjusted baseline emissions in year y (t CO₂e/year)
- $BE_{CH_4,adj,y}$ = Downward adjusted baseline emissions of methane from the SWDS in year y (t CO₂e/year), determined based on section 7.4.2.1 above
- $BE_{EG,adj,y}$ = Downward adjusted baseline emissions from the electricity generation component in year y (t CO₂e/year), determined based on section 7.4.2.2 above
- $BE_{HG,adj,y}$ = Downward adjusted baseline emissions from the heat generation component in year y (t CO₂e/year), determined based on section 7.4.2.3 above
- $BE_{NG,adj,y}$ = Downward adjusted baseline emissions associated with LFG or biomethane supplied to consumers replacing natural use from a natural gas network component in year y (t CO₂e/year), determined based on section 7.4.2.4 above

Since there is no heat generations or natural gas usage in the baseline scenario, only baseline emissions from methane emissions from SWDS (A) and electricity generation (B) will be taken into account. The baseline emissions are calculated as follows:

$$BE_{adj,y} = BE_{CH_4,adj,y} + BE_{EG,adj,y}$$

Calculation of baseline emissions prior to downward adjustment

Baseline emissions of methane from the SWDS ($BE_{CH_4,y}$)

Baseline emissions of methane from Article 6.4 activities developed in an existing or new SWDS are determined based on the amount of actual methane that is captured under the activity, discounted by the amount that would have been captured and destroyed in the baseline (such as due to legal requirements). In addition, the effect of methane oxidation due to the cover material in the baseline shall be taken into account:

$$BE_{CH_4,y} = [F_{CH_4,PJ,capt,y} \times (1 - OX_y) - F_{CH_4,BL,y}] \times GWP_{CH_4} \quad \text{Equation (1) in A6.4-AMM-001 V01.0}$$

Where:

$BE_{CH_4,y}$	=	Baseline emissions of methane from the SWDS in year y (t CO ₂ e/year)
OX_y	=	Fraction of methane in the LFG that would be oxidized in the top layer of the SWDS in the baseline scenario in year y (dimensionless)
$F_{CH_4,PJ,capt,y}$	=	Amount of methane in the LFG which is collected and sent to flares and/or use under the project scenario in year y (t CH ₄ /year)
$F_{CH_4,BL,y}$	=	Amount of methane in the LFG that would be destroyed in the baseline in year y (t CH ₄ /year)
GWP_{CH_4}	=	Global warming potential of CH ₄ (t CO ₂ e/t CH ₄)

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

During the crediting period, $F_{CH_4,PJ,capt,y}$ is determined as the sum of the quantities of methane flared, used for electricity or heat generation, and/or supplied to consumers via a natural gas distribution network and/or dedicated pipeline and/or to the trucks, as follows:

$$F_{CH_4,PJ,capt,y} = F_{CH_4,flared,y} + F_{CH_4,EL,y} + (F_{CH_4,HG,y} \times fd_{CH_4,HG,j,default}) + F_{CH_4,NG,y}$$

Equation (2) in
A6.4-AMM-001
V01.0

Where:

$F_{CH_4,PJ,capt,y}$	=	Amount of methane in the LFG which is collected and sent to flares and/or use under the project scenario in year y (tCH ₄ /year)
$F_{CH_4,flared,y}$	=	Amount of methane in the LFG which is flared in year y (tCH ₄ /year)
$F_{CH_4,EL,y}$	=	Amount of methane in the LFG or in the biomethane which is used for electricity generation in year y (tCH ₄ /year)
$F_{CH_4,HG,y}$	=	Amount of methane in the LFG or in the biomethane which is used for heat generation in year y (tCH ₄ /year)
$fd_{CH_4,HG,j,default}$	=	Default value for the fraction of methane destroyed when used for heat generation equipment type j
$F_{CH_4,NG,y}$	=	Amount of methane in the LFG or in the biomethane which is supplied to consumers via a natural gas distribution network and/or dedicated pipeline and/or trucks in year y (tCH ₄ /year)

Since there is no heat generations or natural gas usage therefore *Ex-post determination of $F_{CH_4,PJ,y}$* will be limited to methane emissions from SWDS and electricity generation will be taken into account.

$$F_{CH_4,PJ,capt,y} = F_{CH_4,flared,y} + F_{CH_4,EL,y}$$

The parameters $F_{CH_4,EL,y}$ is determined using the mass flow tool and monitoring the working hours, such that no emission reductions are claimed for methane destruction during non-working hours. This is taken into account by monitoring the hours that the equipment utilizing the LFG is operating in year y ($Op_{j,h,y}$).

Determination of $F_{CH_4,BL,y}$

This step provides a procedure to determine the amount of methane that would have been captured and destroyed (by flaring) in the baseline due to regulatory

requirements, or to address safety and odour concerns. A6.4-AMM-001 “Flaring or Use of Landfill Gas” version 01.0 provides 4 cases and corresponding instructions.

Situation at the start of the Article 6.4 activity	Requirements to capture and destroy LFG	Existing LFG capture system
Case 1	No	No
Case 2	Yes	No
Case 3	No	Yes
Case 4	Yes	Yes

The situation at the start of the project activity falls under Case 1 since there are no legal requirements in Turkey to destroy methane and the LFG was not captured prior to the project activity.

Therefore:

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

Ex ante estimation of $F_{CH_4,PJ,capt,y}$

An ex-ante estimate of $F_{CH_4,PJ,capt,y}$ is used to estimate baseline methane emissions from the SWDS (according to Equation (2)) and calculate the emission reductions of the proposed Article 6.4 activity in the PDD. It is determined as follows:

$$F_{CH_4,PJ,capt,y} = \eta_{PJ} \times BE_{CH_4,SWDS,y} / GWP_{CH_4} \quad \text{Equation (14) in A6.4-AMM-001 V01.0}$$

Where:

$F_{CH_4,PJ,capt,y}$	=	Ex-ante estimation of the amount of methane in the LFG which collected and sent to flares and/or use under the project scenario in year y (t CH ₄ /year)
$BE_{CH_4,SWDS,y}$	=	Amount of methane in the LFG that is generated from the SWDS in the baseline scenario in year y (t CO ₂ e/year)
η_{PJ}	=	Efficiency of the Article 6.4 activity’s LFG capture system
GWP_{CH_4}	=	Global warming potential of CH ₄ (t CO ₂ e/t CH ₄)

$BE_{CH_4,SWDS,y}$ is determined using the solid waste tool. . The amount of methane generated from disposal of waste at the SWDS is calculated based on a first order decay (FOD) model. The amount of methane generated from disposal of waste at the SWDS is calculated for year y as follows:

$$\left. \begin{array}{l} BE_{CH_4,SWDS,y} \\ PE_{CH_4,SWDS,y} \\ LE_{CH_4,SWDS,y} \end{array} \right\} = \varphi_y \times (1 - f_y) \times GWP_{CH_4} \times (1 - OX_y) \times \frac{16}{12} \times F \times MCF_y$$

$$\times \sum_{x=1}^y \sum_j [W_{j,x} \times DOC_{f,j} \times DOC_j \times e^{-k_j \times (y-x)} \times (1 - e^{-k_j})]$$

Equation (1) in
A6.4-AMT-0003
V01.0

Where, for the yearly model:

$BE_{CH_4,SWDS,y}$	=	Methane baseline, project emissions or leakage emissions occurring in year y generated from waste disposal at a SWDS during a time period ending in year y (t CO ₂ e/yr)
$PE_{CH_4,SWDS,y}$	=	
$LE_{CH_4,SWDS,y}$	=	
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)
$W_{j,x}$	=	Amount of solid waste type j disposed or prevented from disposal in the SWDS in the year x (t)

Baseline emissions associated with electricity generation ($BE_{EG,y}$)

Baseline emissions from electricity generated and supplied to the electric grid are calculated as follows:

$$BE_{EG,y} = BE_{EG,grid,y} = EG_y \times EF_{grid,y}$$

Equation (15) in
A6.4-AMM-001 v01.0

Where:

$BE_{EG,y}$	=	Baseline emissions from electricity generation in year y (t CO ₂ /year)
$BE_{EG,grid,y}$	=	Baseline emissions from electricity generated and supplied to the electric grid in year y (tCO ₂ /year)
EG_y	=	Quantity of electricity generated by the power plant in the activity scenario in year y (MWh/year)
$EF_{grid,y}$	=	Emission factor of the electric grid in year y (tCO ₂ /MWh)

In accordance with paragraph 98 of the methodology, the grid emission factor ($EF_{grid,y}$) has been determined based on the proportion of renewable energy (including solar and wind) and nuclear energy in the annual electricity generation of the Turkish electricity grid. According to the 2024 Electricity Market Development Report published by the

Energy Market Regulatory Authority of Turkey (EPDK)³¹, the share of renewable energy and nuclear energy in Turkey's total electricity generation reached 45.74% in 2024, which exceeds 33% but remains below 67%. Therefore, in accordance with option (b) of paragraph 98, the applicable default grid emission factor is:

$$EF_{\text{grid},y} = 0.1 \text{ tCO}_2/\text{MWh}$$

Application of the downward adjustment

As the project is in its third crediting period, the downward adjustment applicable to the calendar year of the start date of the first crediting period as referred to in section 7.4.1 in methodology) has not been applied. Instead, the downward adjustment applicable to subsequent crediting periods has been applied in accordance with the relevant provisions of the methodology (i.e Section 7.4.2 in the applied methodology).

For the amount of methane in the LFG that is utilized for electricity or heat generation or that is supplied to consumers, the downward adjusted amount of methane is determined as follows:

$$F_{CH_4,EL,adj,y} = F_{CH_4,EL,y} - [DA_{CH_4,EL,y1} + F_{CH_4,EL,y1} \times 0.01 \times (y - y_1)] \quad \text{Equation (30)} \\ \text{in A6.4-AMM-001 V01.0}$$

Where:

$F_{CH_4,EL,adj,y}$	=	Downward adjusted amount of the methane in the LFG or in the biomethane which is used for electricity generation in year y (t CH ₄ /year)
$F_{CH_4,EL,y}$	=	Amount of methane in the LFG or in the biomethane which is used for electricity generation in year y (t CH ₄ /year), determined based on paragraphs 83 and 84 above
$DA_{CH_4,EL,y1}$	=	Initial downward adjustment to the amount of methane in the LFG or in the biomethane which is used for electricity generation (t CH ₄ /year), determined by replacing $BE_{act/hist,i,y1}$ by $F_{CH_4,EL,y1}$ and $UNC_{BE_{act/hist,i,y1}}$ by $UNC_{F_{CH_4,EL,y1}}$ in Equation (27)
$F_{CH_4,EL,y1}$	=	Amount of methane in the LFG or in the biomethane which is used for electricity generation in the calendar year of the start date of the crediting period (t CH ₄ /year), determined based on paragraphs 83 and 84 above

³¹ EPDK, 2024 Electricity Market Development Report, Table: Installed Capacity and Production by Resources by the end of 2024. Available at: <https://www.epdk.gov.tr/Detay/Icerik/3-0-24/yillik-sektor-raporu>

- y = Calendar years of the crediting period after the calendar year of the start date of the first crediting period
- y_1 = Calendar year of the start date of the first crediting period

The downward adjusted baseline emissions from the methane component in the SWDS ($BE_{CH_4,adj,y}$) are as follows;

$$BE_{CH_4,adj,y} = \{ [F_{CH_4,Primary-Flare,adj,y} + F_{CH_4,Backup-Flare,adj,y} + F_{CH_4,EL,adj,y} + (F_{CH_4,HG,adj,y} \times fd_{CH_4,HG,j,default}) + F_{CH_4,NG,adj,y}] \times (1 - OX_y) - F_{CH_4,BL,y} \} \times GWP_{CH_4}$$

Equation (33) in A6.4-AMM-001 v01.0

Where:

- $BE_{adj,CH_4,y}$ = Downward adjusted baseline emissions of methane from the SWDS in year y (t CO₂e/year)
- $F_{CH_4,Primary-Flare,adj,y}$ = Downward adjusted amount of methane in the LFG which is flared in the primary flare in year y (tCH₄/year), determined based on Equation (28)
- $F_{CH_4,Backup-Flare,adj,y}$ = Downward adjusted amount of methane in the LFG which is flared in the backup flare in year y (t CH₄/year), determined based on Equation (29)
- $F_{CH_4,EL,adj,y}$ = Downward adjusted amount of methane in the LFG or biomethane which is used for electricity generation in year y (t CH₄/year), determined based on Equation (30)
- $F_{CH_4,HG,adj,y}$ = Downward adjusted amount of methane in the LFG or biomethane which is used for heat generation in year y (tCH₄/year), determined based on Equation (31)
- $fd_{CH_4,HG,j,default}$ = Default value for the fraction of methane destroyed when used for heat generation equipment type j (dimensionless)
- $F_{CH_4,NG,adj,y}$ = Downward adjusted amount of the methane in the LFG or in the biomethane which is supplied to consumers in year y (t CH₄/year), determined based on Equation (32)
- OX_y = Fraction of methane in the LFG that would be oxidized in the top layer of the SWDS in the baseline scenario in year y (dimensionless), determined based on section 7.3.2.1.2
- $F_{CH_4,BL,y}$ = The amount of LFG that would have been captured and destroyed (by flaring) in the baseline due to legal or contractual requirements, to address safety and odour concerns, or for other reasons, determined based on section 7.3.2.1.3
- GWP_{CH_4} = Global warming potential for methane (tCO₂e/tCH₄)

The downward adjusted baseline emissions from electricity generation shall be determined based on an increase in the downward adjustment by 1 per cent per calendar year, as follows:

$$BE_{EG,adj,y} = BE_{EG,y} - \left[DA_{BE_{EG},y_1} + (BE_{EG,y_1} \times 0.01 \times (y - y_1)) \right] \quad \text{Equation (3)}$$

Where:

$BE_{EG,adj,y}$	=	Downward adjusted baseline emissions from the electricity generation component in year y (t CO ₂ e/year)
$BE_{EG,y}$	=	Baseline emissions from the electricity generation component in year y (t CO ₂ e/year), determined based on section 7.3.2.2 above
DA_{BE_{EG},y_1}	=	Initial downward adjustment to electricity generation component (t CO ₂ /year), determined by replacing $BE_{act/hist,i,y_1}$ by BE_{EG,y_1} and $UNC_{BE_{act/hist,i,y_1}}$ by UNC_{BE_{EG},y_1} in the Equation (27)
BE_{EG,y_1}	=	Baseline emissions from the electricity generation component in the calendar year of the start date of the crediting period (tCO ₂ /year)
y	=	Calendar years of the crediting period after the calendar year of the start date of the crediting period
y_1	=	Calendar year of the start date of the crediting period

In the downward adjusted baselines in subsequent years, the initial downward adjustment is required as a term. It shall be determined for each component or sub-component i as the highest value between the minimum downward adjustment and the downward adjustment based on the uncertainty, as follows:

$$DA_{i,y_1} = \max \left(\begin{array}{c} (BE_{act/hist,i,y_1} - PE_{y_1}) \times 0.1 \\ \text{or} \\ BE_{act/hist,i,y_1} \times UNC_{BE_{act/hist,i,y_1}} \end{array} \right) \quad \begin{array}{l} \text{Equation 27 in A6.4-} \\ \text{AMM-001 V01.0} \end{array}$$

Where:

DA_{i,y_1}	=	Initial downward adjustment for each component or sub-component i (t CO ₂ e/year)
$BE_{act/hist,i,y_1}$	=	Unadjusted existing actual or historical net baseline emissions for each baseline emission component or sub-component i in year 1 of the crediting period (tCO ₂ e/year)
PE_{y_1}	=	Project emissions for each baseline emission component or sub-component i in year 1 of the crediting period (tCO ₂ e/year)
$UNC_{BE_{act/hist,i,y_1}}$	=	Uncertainty of baseline emissions at the lower bound of the 95 per cent confidence interval relative to the central estimate of quantified unadjusted net baseline emissions for each baseline emission component or sub-component i in year 1 of the crediting period (fraction)
y_1	=	Calendar year of the start date of the first crediting period

Calculation of the Conservative Business-as-Usual Emissions

Since the proposed Article 6.4 activity includes landfill gas management and electricity generation only, the business-as-usual emissions are determined in accordance with Equation (38) of the methodology as follows:

$$BAU_y = BE_{CH_4,y} + BE_{EG,y}$$

Equation 38 in
A6.4-AMM-001 V01.0

Where:

Parameter Description

BAU_y	Business-as-usual emissions in year y (tCO ₂ e/year)
$BE_{CH_4,y}$	Baseline methane emissions from the solid waste disposal site determined in accordance with Section 7.3.2.1 (tCO ₂ e/year)
$BE_{EG,y}$	Baseline emissions associated with electricity generation determined in accordance with Section 7.3.2.2 (tCO ₂ e/year)

Since the proposed project does not include heat generation or the supply of landfill gas/biomethane to consumers, the parameters $BE_{HG,y}$ and $BENG,y$ are not applicable.

In accordance with paragraphs 145 and 146 of the methodology, the uncertainty associated with the business-as-usual emissions is determined at the 95% confidence level by considering the uncertainty of all parameters used in the calculation of BAU emissions. The uncertainty assessment is performed following the guidance provided in Volume 1, Chapter 3 of the 2019 Refinement to the IPCC Guidelines.

Conservative BAU emissions based on uncertainty

The conservative BAU emissions considering uncertainty are determined using Equation (41):

$$BAU_{cons,UNC,i,y} = BAU_{i,y} \times (1 - UNC_{BAU,CP1,i,y})$$

Equation 41 in
A6.4-AMM-001 V01.0

Where:

$BAU_{cons,UNC,i,y}$	Conservative BAU emissions based on uncertainty for component i in year y (tCO ₂ e/year)
$BAU_{i,y}$	Most likely BAU emissions for component i in year y (tCO ₂ e/year)
$UNC_{BAU,CP1,i,y}$	Relative uncertainty at the lower bound of the uncertainty interval

Minimum conservative BAU emissions

The minimum conservative BAU emissions are determined using Equation (42):

$$BAU_{cons,min,i,y} = BAU_{i,y} - (BAU_{i,y} - PE_y) \times 0.1$$

Where:

$BAU_{cons,min,i,y}$	Minimum conservative BAU emissions for component i in year y (tCO ₂ e/year)
$BAU_{i,y}$	Most likely BAU emissions (tCO ₂ e/year)
PE_y	Project emissions in year y (tCO ₂ e/year)

Determination of the conservative BAU baseline

The conservative BAU baseline is determined as the lower value between the results obtained in Steps 2 and 3, in accordance with Equation (43):

$$BAU_{cons,i,y} = \min(B; AU_{cons,UNC,i,y}BAU_{cons,min,i,y})$$

Where:

$BAU_{cons,i,y}$	Conservative BAU baseline emissions for component i in year y (tCO ₂ e/year)
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The final conservative BAU emissions for each year of the crediting period are presented in Table below.

Table 8. Conservative BAU Emissions

Vintage		BAU_y	$BAU_{cons,UNC}$	$BAU_{cons,min}$	BAU_{cons}
19.05.2026	31.12.2026	50,183	40,633	45,165	40,633
1.01.2027	31.12.2027	71,904	58,220	64,714	58,220
1.01.2028	31.12.2028	64,340	52,096	57,906	52,096
1.01.2029	31.12.2029	57,810	46,809	52,029	46,809
1.01.2030	31.12.2030	52,156	42,230	46,940	42,230
1.01.2031	31.12.2031	47,244	38,253	42,520	38,253
1.01.2032	31.12.2032	42,962	34,786	38,666	34,786
1.01.2033	18.05.2033	14,827	12,005	13,344	12,005

Comparison of Crediting Baselines

In accordance with Section 7.6 of the methodology, the downward adjusted baseline ($BE_{adj,y}$) determined in Section 7.4.2.5 is compared with the conservative Business-as-Usual baseline ($BAU_{cons,y}$) determined in Section 7.5.1.

The comparison is presented in Table below.

Table 9. Comparison of Downward Adjusted Baseline and Conservative BAU Baseline

Vintage	Vintage	Downward Adjusted Baseline ($BE_{adj,y}$)	Conservative BAU Baseline ($BAU_{cons,y}$)	Baseline Applied
19.05.2026	19.05.2026	38,106	40,633	38,106
1.01.2027	1.01.2027	56,068	58,220	56,068
1.01.2028	1.01.2028	48,994	52,096	48,994
1.01.2029	1.01.2029	42,931	46,809	42,931
1.01.2030	1.01.2030	37,717	42,230	37,717
1.01.2031	1.01.2031	33,216	38,253	33,216
1.01.2032	1.01.2032	29,319	34,786	29,319

1.01.2033	1.01.2033	6,634	12,005	6,634
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In accordance with Section 7.6 of the methodology, the downward adjusted baseline ($BE_{adj,y}$) is compared with the conservative Business-as-Usual baseline ($BAU_{cons,y}$). The comparison confirms that the downward adjusted baseline remains lower than the conservative BAU baseline for each calendar year and cumulatively over the crediting period. Therefore, the downward adjusted baseline is applied for ex-ante emission reduction calculations. During monitoring, the ex-post calculated values will be compared in accordance with paragraph 153 of the methodology. If the conservative BAU baseline is lower than the downward adjusted baseline for any calendar year, the conservative BAU baseline will be applied for that year.

Project Emissions

Project emissions are calculated as follows:

$$PE_y = PE_{EC,y} + PE_{FC,y} + PE_{DT,y} + PE_{SP,y} \quad \text{Equation 44 in A6.4-AMM-001 V01.0}$$

Where:

- PE_y = Project emissions in year y (t CO₂/year)
- $PE_{EC,y}$ = Project emissions from electricity consumption due to the Article 6.4 activity in year y (tCO₂/year)
- $PE_{FC,y}$ = Project emissions from fossil fuel consumption due to the Article 6.4 activity for purposes other than electricity generation in year y (tCO₂/year)
- $PE_{DT,y}$ = Project emissions from the distribution of LFG or biomethane using trucks, in year y (tCO₂/year)
- $PE_{SP,y}$ = Project emissions from the supply of biomethane or LFG to consumers through a dedicated pipeline, in year y (tCO₂/year)

In accordance with the applied methodology, project emissions in year y comprise emissions from electricity consumption, fossil fuel consumption for purposes other than electricity generation, distribution of LFG or biomethane using trucks, and supply of biomethane or LFG to consumers through a dedicated pipeline.

Of these components, the distribution of LFG or biomethane using trucks and the supply of biomethane or LFG to consumers through a dedicated pipeline are not applicable to the proposed project activity and fall outside the project boundary; therefore, the corresponding emission components are excluded from the calculation.

Project emissions from electricity consumption

Project emissions from electricity consumption are calculated as follows:

$$PE_{EC,y} = (EC_{grid,y} \times EF_{EC,grid,y} \times F_{TDL,grid}) + (EC_{captive,y} \times EF_{EC,captive,y}) \quad \text{Equation 44 in A6.4-AMM-001 V01.0}$$

Where:

- $PE_{EC,y}$ = Project emissions from electricity consumption due to the Article 6.4 activity in year y (t CO₂/yr)

$EC_{grid,y}$	=	Quantity of electricity consumed from the electric grid in year y (MWh/yr)
$EF_{EC,grid,y}$	=	Emission factor from the electric grid in year y (t CO ₂ /MWh)
$F_{TDL,grid}$	=	Factor to account for transmission and distribution losses from the electric grid (unitless)
$EC_{captive,y}$	=	Quantity of electricity consumed from the captive fossil fuel fired power plant in year y (MWh/yr)
$EF_{EC,captive,y}$	=	Emission factor from the fossil fuel fired captive power plant in year y (t CO ₂ /MWh)

In accordance with paragraph 156 of the methodology, the grid emission factor ($EF_{EC,grid,y}$) has been determined based on the proportion of renewable energy (excluding solar and wind) and nuclear energy in the annual electricity generation of the Turkish electricity grid. According to the 2024 Electricity Market Development Report published by the Energy Market Regulatory Authority of Turkey (EPDK)³², the share of renewable energy (excluding solar and wind) and nuclear energy in Turkey's total electricity generation reached 27.73% in 2024, which is less than 33%. Therefore, in accordance with option (a) of paragraph 156, the applicable default grid emission factor is:

$$EF_{EC,grid,y} = 1.3 \text{ tCO}_2/\text{MWh}$$

In accordance with paragraph 158 of the applied methodology, the parameter $F_{TDL,grid}$ is assigned a value of 1.25.

Project emissions from fossil fuel consumption

This source of project emissions is calculated as follows:

$$PE_{FC,y} = \sum_i (FC_{i,y} \times COEF_{i,y})$$

Equation 46 in A6.4-AMM-001 V01.0

Where:

$PE_{FC,y}$	=	Project emissions from fossil fuel consumption due to the Article 6.4 activity for purposes other than electricity generation in year y (tCO ₂ /year)
$FC_{i,y}$	=	Quantity of fuel type i combusted in process j during the year y (mass or volume unit/year)
$COEF_{i,y}$	=	Is the CO ₂ emission coefficient of fuel type i in year y (tCO ₂ /mass or volume unit)
i	=	Fuel types combusted

³² EPDK, 2024 Electricity Market Development Report, Table: Installed Capacity and Production by Resources by the end of 2024. Available at: <https://www.epdk.gov.tr/Detay/Icerik/3-0-24/yillik-sektor-raporu>

The CO₂ emission coefficient ($COEF_{i,y}$) can be calculated using one of the three options under paragraph 160 in the applied methodology. For the proposed project activity, the data required for Options A.1 and A.2 — namely the chemical composition of the fossil fuel consumed — are not specifically defined and cannot be reliably determined, as such detailed information is not provided by fuel suppliers and obtaining site-specific analytical data would be disproportionate to the scale of consumption. Accordingly, Option B has been selected for the determination of the relevant parameter.

Option B: Calculated based on net calorific value and CO₂ emission factor of the fuel type i , as follows:

$$COEF_{i,y} = NCV_{i,y} \times EF_{CO_2e,i,y} \quad \text{Equation 49 in A6.4-AMM-001 V01.0}$$

Where:

$$\begin{aligned} NCV_{i,y} &= \text{Net calorific value of the fuel type } i \text{ in year } y \text{ (GJ/mass or volume unit)} \\ EF_{CO_2e,i,y} &= \text{CO}_2 \text{ emission factor of fuel type } i \text{ in year } y \text{ (tCO}_2\text{e/GJ)} \end{aligned}$$

The project activity generates electricity from landfill gas, and a portion of this generated electricity is used internally to operate all equipment and processes of the project boundary. Therefore, the operational requirements of the system are fully met through on-site electricity generation, and no external electricity import or fossil fuel consumption is required under normal operating conditions. Accordingly, all project emission components have been estimated to zero based on actual monitoring conditions. The relevant emission formulas have been retained solely for completeness and verification purposes, to ensure that any potential future use of auxiliary electricity or fossil fuels, if ever required, can be properly accounted for within the monitoring framework. Thus, all project emission components are equal to zero:

$$PE_y = 0 \text{ tCO}_2\text{/year}$$

Project emissions from backup flaring

Project emissions associated with the operation of the enclosed backup flare shall be quantified in accordance with A6.4-AMT-004: Project emissions from flaring.

The project emissions from flaring in year y shall be calculated as:

$$PE_{flare,y} = GWP_{CH_4} \times \sum_{m=1}^{525,600} (F_{CH_4, RG,m} \times (1 - \eta_{flare,calc,m}) \times 10^{-3}) \quad \text{Equation 12 in A6.4-AMM-004 V01.0}$$

Where:

$$\begin{aligned} PE_{flare,y} & \text{ Project emissions from backup flaring in year } y & \text{tCO}_2\text{e} \\ GWP_{CH_4} & \text{ Global warming potential of methane} & \text{tCO}_2\text{e/tCH}_4 \end{aligned}$$

$F_{CH_4, RG, m}$	Mass flow of methane in the landfill gas sent to the backup flare during minute m	kg
$\eta_{flare, calc, m}$	Methane destruction efficiency of the enclosed backup flare in minute m , determined in accordance with A6.4-AMT-004	-

For the enclosed backup flare installed in the project, the methane destruction efficiency shall be conservatively adjusted by subtracting 10 percentage points from the measured destruction efficiency, in accordance with A6.4-AMT-004.

The enclosed backup flare is installed solely for emergency operation during emergency events, maintenance activities, start-up, or temporary shutdowns of the electricity generation units. Under normal operating conditions, all recovered landfill gas is directed to the electricity generation system. Therefore, routine operation of the backup flare is not expected, and project emissions associated with backup flaring are estimated to be negligible over the renewed crediting period.

If the enclosed backup flare be operated during the crediting period, the quantity of landfill gas sent to the flare and all other required parameters will be monitored in accordance with the monitoring plan. The corresponding project emissions will then be calculated using the equations and procedures specified in A6.4-AMT-004 and reported in the relevant Monitoring Report.

Leakage Emissions

In accordance with the applied methodology, the adjusted yearly baseline emissions have been discounted by 0.5% to account for leakage emissions.

B.6.2 Data and parameters fixed ex ante

SDG13

Data/parameter	OX_y
Unit	-
Description	Fraction of methane in the LFG that would be oxidized in the top layer of the SWDS in the baseline scenario in year y
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	0.1

Choice of data or Measurement methods and procedures	The default factor is provided in the "Data / Parameters table" of the respective parameter in section 5.5 of the solid waste tool
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	GWP_{CH4}
Unit	tCO ₂ e/tCH ₄
Description	Global warming potential of CH ₄
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	28
Choice of data or Measurement methods and procedures	Default value and uncertainty from IPCC Fifth Assessment Report (AR5). Shall be updated according to any future CMA decisions
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	η_{PJ}
Unit	%
Description	Efficiency of the Article 6.4 activity's LFG capture system
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	50%
Choice of data or Measurement methods and procedures	Default value under A6.4-AMM-001 v01.0
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	BE _{CH4,SWDS,y}	
Unit	tCO ₂ e/year	
Description	Ex-ante estimated amount of methane in the LFG that is generated from the SWDS in the baseline scenario in year y	
Source of data	A6.4-AMM-001 v01.0	
Value(s) applied	Vintage	BE _{CH4,SWDS,y} (tCO ₂ e)
	19/05/2026-31/12/2026	108,812
	01/01/2027-31/12/2027	155,432
	01/01/2028-31/12/2028	138,623
	01/01/2029-31/12/2029	124,112
	01/01/2030-31/12/2030	111,547
	01/01/2031-31/12/2031	100,632
	01/01/2032-31/12/2032	91,117
	01/01/2033-18/05/2033	31,303
Choice of data or Measurement methods and procedures	Default value under A6.4-AMM-001 v01.0	
Purpose of data	Calculation of baseline emissions	
Additional comment	-	

Data/parameter	Φ_{default}
Unit	-
Description	Model correction factor to account for model uncertainties for year y
Source of data	A6.4-AMT-003 v01.0
Value(s) applied	0.75

Choice of data or Measurement methods and procedures	Default value for application A and humid/wet conditions under A6.4-AMT-003 v01.0
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	DOC_{f,j}
Unit	-
Description	Fraction of degradable organic carbon (DOC) for each waste type <i>j</i> that decomposes under the specific conditions occurring in the SWDS
Source of data	Volume 5, Chapter 3 of the IPCC (2019 Refinement)
Value(s) applied	0.5
Choice of data or Measurement methods and procedures	Default value
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter	MCF_y
Unit	-
Description	Methane correction factor
Source of data	Volume 5, Chapter 3 of the IPCC (2019 Refinement)
Value(s) applied	0.8
Choice of data or Measurement methods and procedures	Default value
Purpose of data	Calculation of baseline emissions

Additional comment	-
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Data/parameter	DOC_j														
Unit	-														
Description	Fraction of degradable organic carbon in waste type <i>j</i> (weight fraction)														
Source of data	Adapted from Tables 2.4 and 2.5 of Volume 5, Chapter 2 of the IPCC (2006)														
Value(s) applied	The following values for the different waste types have been applied: <table> <tr> <th>Waste type <i>j</i></th><th>DOC_j (% wet waste)</th></tr> <tr> <td>Wood and wood products</td><td>43</td></tr> <tr> <td>Pulp, paper and cardboard</td><td>40</td></tr> <tr> <td>Food, food waste, beverages and tobacco</td><td>15</td></tr> <tr> <td>Textiles</td><td>24</td></tr> <tr> <td>Garden, yard and park waste</td><td>20</td></tr> <tr> <td>Glass, plastic, metal, other inert</td><td>0</td></tr> </table>	Waste type <i>j</i>	DOC _j (% wet waste)	Wood and wood products	43	Pulp, paper and cardboard	40	Food, food waste, beverages and tobacco	15	Textiles	24	Garden, yard and park waste	20	Glass, plastic, metal, other inert	0
Waste type <i>j</i>	DOC _j (% wet waste)														
Wood and wood products	43														
Pulp, paper and cardboard	40														
Food, food waste, beverages and tobacco	15														
Textiles	24														
Garden, yard and park waste	20														
Glass, plastic, metal, other inert	0														
Choice of data or Measurement methods and procedures	Default value														
Purpose of data	Calculation of baseline emissions														
Additional comment	-														

Data/parameter	k_j
Unit	1/year
Description	Decay rate for the waste type <i>j</i>

Source of data	Adapted from Table 3.3 of Volume 5, Chapter 3 of the IPCC (2019 Refinement).		
Value(s) applied	The following values for the different waste types have been applied:		
			Boreal and Temperate (MAT≤20°C)
			Wet (MAP/ PET >1)
	Slowly degrading	Pulp, paper, cardboard (other than sludge), textiles	0.06
		Wood, wood products and straw	0.03
	Moderately degrading	Other (non-food) organic putrescible garden and park waste	0.10
	Rapidly degrading	Food, food waste, sewage sludge, beverages and tobacco	0.185
Choice of data or Measurement methods and procedures	Default value		
Purpose of data	Calculation of baseline emissions		
Additional comment	Climatic conditions for Bursa where project site located in: MAT –mean annual temperature: 14.7 °C ³³ MAP –Mean annual precipitation: 706.4 mm ²³		

³³ <https://www.mgm.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?k=A&m=BURSA>

	PET –potential evapotranspiration: 600 mm³⁴ Therefore, Boreal (MAT≤20°C) and wet (MAP/PET >1) conditions are observed in the project site.
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Data/parameter	EF_{grid,y}
Unit	tCO ₂ /MWh
Description	Emission factor of the electric grid in year y
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	0.1
Choice of data or Measurement methods and procedures	Default value In accordance with paragraph 98 of the applied methodology, the grid emission factor (EF_{grid,y}) has been determined based on the proportion of renewable energy (including solar and wind) and nuclear energy in the annual electricity generation of the Turkish electricity grid. According to the 2024 Electricity Market Development Report published by the Energy Market Regulatory Authority of Turkey (EPDK)³⁵, the share of renewable energy and nuclear energy in Turkey's total electricity generation reached 45.74% in 2024, which exceeds 33% but remains below 67%. Therefore, in accordance with option (b) of paragraph 98, the applicable default grid emission factor is: EF_{grid,y} = 0.1 tCO₂/MWh
Purpose of data	Calculation of baseline emissions
Additional comment	-

³⁴ <https://www.mqm.gov.tr/arastirma/buharlasma.aspx?s=2024>

³⁵ EPDK, 2024 Electricity Market Development Report, Table: Installed Capacity and Production by Resources by the end of 2024. Available at: <https://www.epdk.gov.tr/Detay/Icerik/3-0-24/yillik-sektor-raporu>

Data/parameter	EF_{EC,grid,y}
Unit	tCO ₂ /MWh
Description	Emission factor from the electric grid in year y
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	1.3
Choice of data or Measurement methods and procedures	Default value In accordance with paragraph 156 of the methodology, the grid emission factor (EF_{EC,grid,y}) has been determined based on the proportion of renewable energy (excluding solar and wind) and nuclear energy in the annual electricity generation of the Turkish electricity grid. According to the 2024 Electricity Market Development Report published by the Energy Market Regulatory Authority of Turkey (EPDK)³⁶, the share of renewable energy (excluding solar and wind) and nuclear energy in Turkey's total electricity generation reached 27.73% in 2024, which is less than 33%. Therefore, in accordance with option (a) of paragraph 156, the applicable default grid emission factor is: EF_{EC,grid,y} = 1.3 tCO₂/MWh
Purpose of data	Calculation of project emissions
Additional comment	-

Data/parameter	F_{TDL,grid}
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³⁶ EPDK, 2024 Electricity Market Development Report, Table: Installed Capacity and Production by Resources by the end of 2024. Available at: <https://www.epdk.gov.tr/Detay/Icerik/3-0-24/yillik-sektor-raporu>

Unit	-
Description	Factor to account for transmission and distribution losses from the electric grid
Source of data	A6.4-AMM-001 v01.0
Value(s) applied	1.25
Choice of data or Measurement methods and procedures	Default value in accordance with paragraph 158 of the applied methodology.
Purpose of data	Calculation of project emissions
Additional comment	-

B.6.3 Ex ante estimation of SDG Impact

SDG 7: Affordable and Clean Energy

The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum. The project activity is expected to generate Affordable and Clean Energy of 19,600 MWh per year.

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities and provides employment to around 5 people. Further, project activity improves the quality of employment by giving training to employee. Thus, 1 training per year is conducted by the project activity. This will be monitored through employment records.

SDG 13: Climate Action

The project is expected to result in emission reduction in tune of 41,645 tCO₂e/per annum. The ex-ante emission reductions are calculated using the formulas as described under section B.6.1. For a given year, the emission reductions contributed by the project activity (ER_y) is calculated as follows:

Emission Reductions

Table 10. Baseline emissions of the project activity (downward adjusted)

Year	Parameter		
	BE _{adj,y} (tCO ₂ e/yr.)	BE _{CH4,adj,y} (tCO ₂ e/yr.)	BE _{EG,adj,y} (tCO ₂ e/yr.)
19/05/2026-31/12/2026	38,106	37,213	893
01/01/2027-31/12/2027	56,068	54,556	1,512
01/01/2028-31/12/2028	48,994	47,502	1,492
01/01/2029-31/12/2029	42,931	41,459	1,472
01/01/2030-31/12/2030	37,717	36,264	1,453

01/01/2031-31/12/2031	33,216	31,783	1,433
01/01/2032-31/12/2032	29,319	27,905	1,414
01/01/2033-18/05/2033	6,634	6,203	431

Baseline Emissions of Methane from SWDS

A default value of 0.1 has been applied for $OX_{top-layer}$ and 28 for GWP_{CH_4} is considered.

Table 11: Baseline emissions of methane from SWDS (downward adjusted)

Year	Parameter		
	$BE_{CH_4,adj,y}$ (tCO ₂ /yr.)	$F_{CH_4,PJ,y}$ (tCH ₄ /yr.)	$F_{CH_4,BL,y}$ (tCH ₄ /yr.)
19/05/2026-31/12/2026	37,213	1,477	0
01/01/2027-31/12/2027	54,556	2,165	0
01/01/2028-31/12/2028	47,502	1,885	0
01/01/2029-31/12/2029	41,459	1,645	0
01/01/2030-31/12/2030	36,264	1,439	0
01/01/2031-31/12/2031	31,783	1,261	0
01/01/2032-31/12/2032	27,905	1,107	0
01/01/2033-18/05/2033	6,203	247	0

Amount of methane in the LFG which is flared and or used in the project activity

The amount of methane in the LFG which is flared and or used in the project activity in year y has been estimated ex-ante through FOD model. The following default values have been applied to the FOD model:

Table 12: Default values for FOD

Parameter	Value		
Φ_y	0.75		
OX	0.1		
F	0.5		
$DOC_{f,y}$	0.5		
MCF_y	0.8		
k_j	The following values for the different waste types have been applied as a default value:		
	Waste type j		Boreal and Temperate (MAT < 20°C)
			WET (MAP/PET > 1)
	Slowly degrading	Pulp, paper, cardboard	0.06
		Wood, wood products and straw	0.03
	Moderately degrading	Other (non-food) organic putrescible garden and park waste	0.10

	Rapidly degrading	Food, food waste, sewage sludge, beverages and tobacco	0.185														
DOC _j	The following values for the different waste types have been applied as a default value: <table><tr><th>Waste type j</th><th>DOC_j (% wet waste)</th></tr><tr><td>Wood and wood products</td><td>43</td></tr><tr><td>Pulp, paper and cardboard</td><td>40</td></tr><tr><td>Food, food waste, beverages and tobacco</td><td>15</td></tr><tr><td>Textiles</td><td>24</td></tr><tr><td>Garden, yard and park waste</td><td>20</td></tr><tr><td>Glass, plastic, metal, other inert</td><td>0</td></tr></table>			Waste type j	DOC _j (% wet waste)	Wood and wood products	43	Pulp, paper and cardboard	40	Food, food waste, beverages and tobacco	15	Textiles	24	Garden, yard and park waste	20	Glass, plastic, metal, other inert	0
Waste type j	DOC _j (% wet waste)																
Wood and wood products	43																
Pulp, paper and cardboard	40																
Food, food waste, beverages and tobacco	15																
Textiles	24																
Garden, yard and park waste	20																
Glass, plastic, metal, other inert	0																
f _y	0																
n _{pj}	50%																

Amount of solid waste type j disposed or prevented from disposal in the SWDS.

Table 13. Fraction of solid waste type j disposed or prevented from disposal in the SWDS

Waste Type	Fraction (%)
Wood and wood products	3%
Pulp, paper and cardboard	8%
Food, food waste, beverages and tobacco	53%
Glass, plastic, metal, other inert	30%

The receipt of waste at the specified landfill site has been discontinued. However, to ensure the continuity and long-term sustainability of the project, waste acceptance at the site may be resumed if deemed necessary in the future. As no new waste has been received, waste quantities from 2026 onwards are assumed to be zero, and the baseline emissions have been determined accordingly:

Table 14: Total amount of waste disposed to the SWDS

Year	W _x (tons/day)
19/05/2026-31/12/2026	0
01/01/2027-31/12/2027	0
01/01/2028-31/12/2028	0
01/01/2029-31/12/2029	0
01/01/2030-31/12/2030	0
01/01/2031-31/12/2031	0

01/01/2032-31/12/2032	0
01/01/2033-18/05/2033	0

Based on the above parameters the amount of methane in the LFG which is flared and or used in the project activity in year y has been estimated ex-ante as follows:

Table 15: The amount of methane in the LFG which is flared and or used (downward adjusted)

Year	F _{CH₄,PJ,y} (tCH ₄ /yr.)
19/05/2026-31/12/2026	1,477
01/01/2027-31/12/2027	2,165
01/01/2028-31/12/2028	1,885
01/01/2029-31/12/2029	1,645
01/01/2030-31/12/2030	1,439
01/01/2031-31/12/2031	1,261
01/01/2032-31/12/2032	1,107
01/01/2033-18/05/2033	247

Baseline Emissions Associated with Electricity Generation

The amount of estimated electricity generation has been taken from generation license.

Table 16: Baseline emissions associated with electricity generation (downward adjusted)

Year	Parameter			
	BE _{EG,adj,y}	BEEg,y (tCO ₂ /yr)	EG,y (MWh)	EF _{grid,y} (tCO _{2e} /MWh)
19/05/2026-31/12/2026	893	1,218	12,190	0.1
01/01/2027-31/12/2027	1,512	1,960	19,600	0.1
01/01/2028-31/12/2028	1,492	1,960	19,600	0.1
01/01/2029-31/12/2029	1,472	1,960	19,600	0.1
01/01/2030-31/12/2030	1,453	1,960	19,600	0.1
01/01/2031-31/12/2031	1,433	1,960	19,600	0.1
01/01/2032-31/12/2032	1,414	1,960	19,600	0.1
01/01/2033-18/05/2033	431	741	7,410	0.1

In accordance with the applied methodology, project emissions in year y comprise emissions from electricity consumption, fossil fuel consumption for purposes other than electricity generation, distribution of LFG or biomethane using trucks, and supply of biomethane or LFG to consumers through a dedicated pipeline. Of these components, the distribution of LFG or biomethane using trucks and the supply of biomethane or LFG to consumers through a dedicated pipeline are not applicable to the proposed project activity and fall outside the project boundary. Given that no electricity consumption or fossil fuel consumption occurs under the proposed project activity, all project emission components are considered to be zero:

$PE_y = 0 \text{ tCO}_2/\text{year}$

In accordance with the applied methodology, the adjusted yearly baseline emissions have been discounted by 0.5% to account for leakage emissions.

Table 17. Net emission reductions of the project activity (downward adjusted)

Year	Parameter			
	ER_y (tCO ₂ e/yr)	BE_y (tCO ₂ e/yr)	PE_y (tCO ₂ e/yr)	LE_y (tCO ₂ e/yr)
19/05/2026-31/12/2026	37,915	38,106	0	191
01/01/2027-31/12/2027	55,787	56,068	0	281
01/01/2028-31/12/2028	48,749	48,994	0	245
01/01/2029-31/12/2029	42,716	42,931	0	215
01/01/2030-31/12/2030	37,528	37,717	0	189
01/01/2031-31/12/2031	33,049	33,216	0	167
01/01/2032-31/12/2032	29,172	29,319	0	147
01/01/2033-18/05/2033	6,600	6,634	0	34

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	LEAKAGE ESTIMATE	NET BENEFIT
19/05/2026- 31/12/2026	38,106 tCO ₂ e	0	191 tCO ₂ e	38,106 tCO ₂ e
Year 2027	56,068 tCO ₂ e	0	281 tCO ₂ e	56,068 tCO ₂ e
Year 2028	48,994 tCO ₂ e	0	245 tCO ₂ e	48,994 tCO ₂ e
Year 2029	42,931 tCO ₂ e	0	215 tCO ₂ e	42,931 tCO ₂ e
Year 2030	37,717 tCO ₂ e	0	189 tCO ₂ e	37,717 tCO ₂ e
Year 2031	33,216 tCO ₂ e	0	167 tCO ₂ e	33,216 tCO ₂ e
Year 2032	29,319 tCO ₂ e	0	147 tCO ₂ e	29,319 tCO ₂ e
01/01/2033- 18/05/2033	6,634 tCO ₂ e	0	34 tCO ₂ e	6,634 tCO ₂ e
Total	292,985 tCO ₂ e	0	1,469 tCO ₂ e	291,516 tCO ₂ e
Total number of crediting years	7			
Annual average over the crediting period	41,645 tCO ₂ e			

SDG 7

YEAR	BASILINE ESTIMATE	PROJECT ESTIMATE	LEAKAGE ESTIMATE	NET BENEFIT
19/05/2026-31/12/2026	12,190 MWh	0	0	12,190 MWh
Year 2027	19,600 MWh	0	0	19,600 MWh
Year 2028	19,600 MWh	0	0	19,600 MWh
Year 2029	19,600 MWh	0	0	19,600 MWh
Year 2030	19,600 MWh	0	0	19,600 MWh
Year 2031	19,600 MWh	0	0	19,600 MWh
Year 2032	19,600 MWh	0	0	19,600 MWh
01/01/2033-18/05/2033	7,410	0	0	7,410
Total	137,200 MWh	0	0	137,200 MWh
Total number of crediting years		7		
Annual average over the crediting period		19,600 MWh		

SDG 8

YEAR	BASILINE ESTIMATE	PROJECT ESTIMATE	LEAKAGE ESTIMATE	NET BENEFIT
19/05/2026-31/12/2026	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Year 2027	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Year 2028	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Year 2029	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Year 2030	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Year 2031	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year

Year 2032	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
01/01/2033-18/05/2033	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Total	At least 5 employees, each receiving at least 1 training per year	0	0	At least 5 employees, each receiving at least 1 training per year
Total number of crediting years		7		
Annual average over the crediting period		At least 5 employees, each receiving at least 1 training per year		

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13

Data / Parameter	Management of the SWDS
Unit	-
Description	Management of the SWDS
Source of data	One of the following sources could be used: (a) Original design of the SWDS; (b) Technical specifications for the management of the SWDS; (c) Local or national regulations
Value(s) applied	SWDS is rehabilitated after the implementation of the project activity.
Measurement methods and procedures	Project participants will refer to the original design of the landfill to ensure that any practice to increase methane generation occurs prior to the implementation of the project activity.

	Any change in the management of the SEDS after the implementation of the project activity should be justified by referring to technical or regulatory specifications.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data / Parameter	$F_{CH_4,EL,y}$																		
Unit	tCH ₄ /year																		
Description	Amount of methane in the LFG which is used for electricity generation in year y;																		
Source of data	Calculation as per the requirements of the mass flow tool																		
Value(s) applied	<table border="1"> <thead> <tr> <th>Vintage</th><th>$F_{CH_4,EL,y}$</th></tr> </thead> <tbody> <tr> <td>19/05/2026-31/12/2026</td><td>1,477</td></tr> <tr> <td>2027</td><td>2,165</td></tr> <tr> <td>2028</td><td>1,885</td></tr> <tr> <td>2029</td><td>1,645</td></tr> <tr> <td>2030</td><td>1,439</td></tr> <tr> <td>2031</td><td>1,261</td></tr> <tr> <td>2032</td><td>1,107</td></tr> <tr> <td>01/01/2033-18/05/2033</td><td>247</td></tr> </tbody> </table>	Vintage	$F_{CH_4,EL,y}$	19/05/2026-31/12/2026	1,477	2027	2,165	2028	1,885	2029	1,645	2030	1,439	2031	1,261	2032	1,107	01/01/2033-18/05/2033	247
Vintage	$F_{CH_4,EL,y}$																		
19/05/2026-31/12/2026	1,477																		
2027	2,165																		
2028	1,885																		
2029	1,645																		
2030	1,439																		
2031	1,261																		
2032	1,107																		
01/01/2033-18/05/2033	247																		
Measurement methods and procedures	As per the requirements of the mass flow tool																		
Monitoring frequency	Annually																		
QA/QC procedures	-																		
Purpose of data	Calculation of baseline emissions																		
Additional comment	Downward adjustments are applied based on the applied methodology, and propagated through error propagation method or Monte Carlo Simulation as per the 2019																		

	Refinement to the 2006 IPCC Guidelines for National Greenhouse Gases Inventories
Data / Parameter	$O_{pj,h}$
Unit	Hours
Description	Operation of the equipment j that consumes the LFG in hour h
Source of data	Project participant
Value(s) applied	7000
Measurement methods and procedures	For each equipment unit j using the LFG monitor that the plant is operating in hour h by the monitoring any one or more of the following three parameters: • Temperature: Determine the location for temperature measurements and minimum operational temperature based on manufacturer's specifications of the burning equipment. Document and justify the location and minimum threshold in the PDD; • Flame: Flame detection system is used to ensure that the equipment is in operation. This option is applicable only for flares; • Products generated: Monitor the generation of steam for the case of boilers and air-heaters and glass for the case of glass melting furnaces. This option is not applicable to brick kilns
Monitoring frequency	Hourly
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	A value of 0 shall be assigned for the specific hour h when: - One of more temperature measurements are missing or below the minimum threshold in hour h (instantaneous measurements are made at least every minute); - Flame is not detected continuously in hour h (instantaneous measurements are made at least every minute);

c) No products are generated in the hour h

Data / Parameter	f_y															
Unit	-															
Description	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															
Source of data	Continuous gas analyzer operating in dry basis. <table><tr><th>Brand/Type</th><th>Serial No</th><th>Equipment Replacement Dates³⁷</th><th>Calibration Dates</th><th>Calibration Due Date</th></tr><tr><td>SIEMENS/ Ultramat 23</td><td>N1H8919</td><td>02/10/2024</td><td>27/04/2022 30/09/2024</td><td>29/09/2034</td></tr><tr><td>SIEMENS/ Ultramat 23</td><td>N1H9436</td><td>01/04/2024 21/07/2025</td><td>22/09/2023 18/07/2025</td><td>17/07/2035</td></tr></table>	Brand/Type	Serial No	Equipment Replacement Dates ³⁷	Calibration Dates	Calibration Due Date	SIEMENS/ Ultramat 23	N1H8919	02/10/2024	27/04/2022 30/09/2024	29/09/2034	SIEMENS/ Ultramat 23	N1H9436	01/04/2024 21/07/2025	22/09/2023 18/07/2025	17/07/2035
Brand/Type	Serial No	Equipment Replacement Dates ³⁷	Calibration Dates	Calibration Due Date												
SIEMENS/ Ultramat 23	N1H8919	02/10/2024	27/04/2022 30/09/2024	29/09/2034												
SIEMENS/ Ultramat 23	N1H9436	01/04/2024 21/07/2025	22/09/2023 18/07/2025	17/07/2035												
Value(s) applied	0.50															
Measurement methods and procedures	Historic data on the amount captured															
Monitoring frequency	Continuous															
QA/QC procedures	Calibration should include zero verification with an inert gas (e.g., N2) and at least one reading verification with a standard gas (single calibration gas or mixture calibration gas). According to the regulation on Measurement and Inspection of Measurement Devices ³⁸ , the calibration frequency is set as 10 years.															
Purpose of data	Calculation of baseline emissions															
Additional comment	-															

³⁷ Measurement Device Replacement Date (Reason for Replacement: Calibration Purposes). Two identical gas analyzers (Serial Nos. N1H8919 and N1H9436) are operated on a rotational basis to ensure continuous monitoring and allow more frequent calibration. The analyzers are alternately removed from service for calibration and reinstalled upon completion. This approach has ensured uninterrupted gas measurements throughout the monitoring period, with no data gaps, while enabling calibrations to be conducted at shorter intervals.

³⁸ <https://www.resmigazete.gov.tr/eskiler/2013/12/20131212-5.htm>

Data / Parameter	$V_{t,db}$				
Unit	$m^3_{dry\ gas}/h$				
Description	Volumetric flow of the gaseous stream in time interval t on a dry basis				
Source of data	Continuous gas analyzer operating in dry basis.				
	Brand/ Type	Serial No	Equipment Replacement Dates ³⁹	Calibration Dates	Calibration Due Date
	SIEMENS/ Ultramat 23	N1H8919	02/10/2024	27/04/2022 30/09/2024	29/09/2034
	SIEMENS/ Ultramat 23	N1H9436	01/04/2024 21/07/2025	22/09/2023 18/07/2025	17/07/2035
Value(s) applied	10,000,000 (average)				
Measurement methods and procedures	Continuous gas analyzer operating in dry basis.				
Monitoring frequency	Continuous				
QA/QC procedures	Calibration should include zero verification with an inert gas (e.g., N2) and at least one reading verification with a standard gas (single calibration gas or mixture calibration gas). According to the regulation on Measurement and Inspection of Measurement Devices ⁴⁰ , the calibration frequency is set as 10 years.				
Purpose of data	Calculation of baseline emissions				
Additional comment	-				

Data / Parameter	$V_{CH_4,t,db}$
Unit	$m^3\ gas\ CH_4/m^3\ dry\ gas$

³⁹ Measurement Device Replacement Date (Reason for Replacement: Calibration Purposes). Two identical gas analyzers (Serial Nos. N1H8919 and N1H9436) are operated on a rotational basis to ensure continuous monitoring and allow more frequent calibration. The analyzers are alternately removed from service for calibration and reinstalled upon completion. This approach has ensured uninterrupted gas measurements throughout the monitoring period, with no data gaps, while enabling calibrations to be conducted at shorter intervals.

⁴⁰ <https://www.resmigazete.gov.tr/eskiler/2013/12/20131212-5.htm>

Description	Volumetric fraction of CH ₄ in a time interval t on a dry basis				
Source of data	Volumetric flow meter				
	Brand	Type	Serial No	Latest Calibration Date	Calibration Due Date
	ABB	266DSHBS HA1A1E1	3K646 61100 9412	29/11/2022	28/11/2032
Value(s) applied	0.5				
Measurement methods and procedures	Historic data on the amount captured				
Monitoring frequency	Contunious				
QA/QC procedures	Volumetric flow will be monitored with a volumetric flow meter that directly measures gas flowrate in normal conditions. Calibration should include zero verification with an inert gas (e.g., N2) and at least one reading verification with a standard gas (single calibration gas or mixture calibration gas). According to the regulation on Measurement and Inspection of Measurement Devices⁴¹, the calibration frequency is set as 10 years.				
Purpose of data	Calculation of baseline emissions				
Additional comment	-				

Data / Parameter	F_{CH4,RG,m}				
Unit	kg				
Description	Mass flow of the methane on a dry basis at reference conditions in minute m				
Source of data	Volumetric flow meter				
	Brand	Type	Serial No	Latest Calibration	Calibration Due Date

⁴¹ <https://www.resmigazete.gov.tr/eskiler/2013/12/20131212-5.htm>

				Date	
	ABB	266DSHBS HA1A1E1	3K646611009425	29/11/2022	28/11/ 2032
Value(s) applied	0				
Measurement methods and procedures	Historic data on the amount captured				
Monitoring frequency	Contunious				
QA/QC procedures	Volumetric flow will be monitored with a volumetric flow meter that directly measures gas flowrate in normal conditions. Calibration should include zero verification with an inert gas (e.g., N2) and at least one reading verification with a standard gas (single calibration gas or mixture calibration gas). According to the regulation on Measurement and				

	Inspection of Measurement Devices ⁴² , the calibration frequency is set as 10 years.
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data / Parameter	T_t				
Unit	K				
Description	Temperature of the gaseous stream during time interval t				
Source of data	Temperature reading instruments				
	Brand/Type	Serial No	Dates of use	Latest Calibration Date	Calibration Due Date
	ELIMKO / PT-100	11/3211 6T	(-24/04/2023) & (08/09/2023-	27/04/2022	26/04/2032

⁴² <https://www.resmigazete.gov.tr/eskiler/2013/12/20131212-5.htm>

			) ⁴³		
	J&C / OR03 – B1H09 – 15 ÜR1/2" NPT	1802-03180	24/04/2023-08/09/2023	17/11/2022	16/11/2032
	ELIMKO / RT30- 1P06-20-U-W	11/32114T	(24/04/2023) & 08/09/2023-) ⁴⁴	08/10/2024	08/10/2034
	ELIMKO / PT-100	22030580.011.01029959	-	28/04/2025	27/04/2035
	J&C / OR03 – B1H09 – 15 ÜR1/2" NPT	1309-10837	24/04/2023-08/09/2023	17/11/2022	16/11/2032
Value(s) applied	300				
Measurement methods and procedures	Continuous Temperature reading instruments operating in dry basis.				
Monitoring frequency	Continuous				
QA/QC procedures	Calibration should include zero verification with an inert gas (e.g., N2) and at least one reading verification with a standard gas (single calibration gas or mixture calibration gas). According to the regulation on Measurement and Inspection of Measurement Devices ⁴⁵ , the calibration frequency is set as 10 years.				
Purpose of data	Calculation of baseline emissions				
Additional comment	-				

SDG 7

Data / Parameter	EG _y
Unit	MWh/year

⁴³ This device ELIMKO with serial number of 11/32116T was replaced with J&C device with serial number of 1802-03180 on 24/04/2023 and J&C device was used until 08/09/2023 when the ELIMKO device with serial number of 11/32116T was installed back.

⁴⁴ This device ELIMKO with serial number of 11/32114T was replaced with J&C device with serial number of 1309-10837 on 24/04/2023 and J&C device was used until 08/09/2023 when the ELIMKO device with serial number of 11/32114T was installed back

⁴⁵ <https://www.resmigazete.gov.tr/eskiler/2013/12/20131212-5.htm>

Description	Quantity of electricity generated by the power plant in the activity scenario in year y			
Source of data	Electricity meters			
		Old Main Meter	New Main Meter	Back-up Meter
	Brand	Landis + Gry	Landis + Gry	Makel
	Type	ZG410CR-1040	ZG410CR-1040	C520.AMT.2556.RS485 R Role
	Serial No	50979650	20245117	80347877
	Calibration Date	24/12/2021	24/07/2025	04/08/2022
	Calibration Due Date	23/12/2031	23/07/2035	03/08/2032
	Date of Change	24/07/2025	-	-
Value(s) applied	Estimated as 68,600 MWh/year with full capacity. Since 2 engines are active for now thus estimated as 19,600 for ex-ante calculations.			
Measurement methods and procedures	The quantity of net electricity generation supplied to the grid by the project plant will be monitored based on the main meter (also referred as TEIAS meters) readings.			
Monitoring frequency	Continuous measurement and at least monthly recording			
QA/QC procedures	Maintenance and calibration of equipment will be carried out according to the instructions of the manufacturer. The electricity meters are used to measure the net electricity exported to the grid and used for billing purposes. Therefore, the meters are sealed by TEIAS (Turkish Electricity Transmission Company).			
	Maintenance and calibration of equipment is carried out according to recognised procedures ⁴⁶ . In accordance			

⁴⁶ In accordance with the Regulation on metering equipment's, the calibration frequency is set for a 10-year period. Reference: <http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.12316&MevzuatIliski=0&sourceXmlSearch=>

	with the regulation on metering equipment's, the calibration frequency is set for a 10-year period.
Purpose of data	Calculation of baseline emissions
Additional comment	Downward adjustments are applied based on the applied methodology, and propagated through error propagation method or Monte Carlo Simulation as per the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gases Inventories

Data / Parameter	EC _{grid,y}			
Unit	MWh/year			
Description	Quantity of electricity consumed from the electric grid in year y			
Source of data	Electricity meters			
		Old Main Meter	New Main Meter	Back-up Meter
	Brand	Landis + Gry	Landis + Gry	Makel
	Type	ZG410CR-1040	ZG410CR-1040	C520.AMT.2556.RS485 R Role
	Serial No	50979650	20245117	80347877
	Calibration Date	24/12/2021	24/07/2025	04/08/2022
	Calibration Due Date	23/12/2031	23/07/2035	03/08/2032
	Date of Change	24/07/2025	-	-
Value(s) applied	Estimated as 0 MWh/year for ex-ante calculations.			
Measurement methods and procedures	The quantity of net electricity consumed from the grid by the project plant will be monitored based on the main meter (also referred as TEIAS meters) readings.			
Monitoring frequency	Continuous measurement and at least monthly recording			
QA/QC procedures	Maintenance and calibration of equipment will be carried out according to the instructions of the manufacturer. The electricity meters are used to measure the net electricity exported to the grid and used for billing			

	purposes. Therefore, the meters are sealed by TEIAS (Turkish Electricity Transmission Company). Maintenance and calibration of equipment is carried out according to recognised procedures⁴⁷. In accordance with the regulation on metering equipment's, the calibration frequency is set for a 10-year period.
Purpose of data	Calculation of project emissions
Additional comment	The project generates electricity from landfill gas and uses a portion of this internally for equipment and operational systems; therefore, net electricity consumption from the grid is conservatively assumed to be zero in the ex-ante assessment. This assumption is consistent with the monitoring approach and ensures that only actual, measurable energy imports (if any occur in the future) would be accounted for during the crediting period.

Data / Parameter	FC_{i,y}
Unit	Mass or volume unit/year
Description	Is the quantity of fuel type i combusted in process j during the year y
Source of data	Mass or volume meters and the purchased fuel invoices
Value(s) applied	Estimated as 0 for ex-ante calculations.
Measurement methods and procedures	Use either mass or volume meters. In cases where fuel is supplied from small daily tanks, rulers can be used to determine mass or volume of the fuel consumed, with the following conditions: the ruler gauge must be part of the daily tank and calibrated at least once a year and

⁴⁷ In accordance with the Regulation on metering equipment's, the calibration frequency is set for a 10-year period. Reference: <http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.12316&MevzuatIliski=0&sourceXmlSearch=>

	have a book of control for recording the measurements (on a daily basis or per shift); Accessories such as transducers, sonar and piezoelectronic devices are accepted if they are properly calibrated with the ruler gauge and receiving a reasonable maintenance. In case of daily tanks with pre-heaters for heavy oil, the calibration will be made with the system at typical operational conditions
Monitoring frequency	Annually
QA/QC procedures	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes. Where the purchased fuel invoices can be identified specifically for the Article 6.4 activity, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial record Maintenance and calibration of equipment is carried out according to recognised procedures⁴⁸. In accordance with the regulation on metering equipment's, the calibration frequency is set for a 10-year period.
Purpose of data	Calculation of project emissions
Additional comment	In the context of the proposed project activity, no fossil fuel combustion is expected in any process under normal operating conditions, as all operational energy requirements are met through electricity generated from landfill gas. Therefore, this parameter is conservatively assumed to be zero in the ex-ante calculations. However, the parameter is retained in the monitoring and calculation framework to ensure completeness and

⁴⁸ In accordance with the Regulation on metering equipment's, the calibration frequency is set for a 10-year period. Reference: <http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.12316&MevzuatIliski=0&sourceXmlSearch=>

	to allow for the accounting of any potential fuel use, should it occur during the crediting period.
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Data / Parameter	NCV_{i,y}
Unit	GJ/mass or volume unit
Description	Net calorific value of the fuel type <i>i</i> in year <i>y</i>
Source of data	To be determined ex-post if fossil fuel consumption occurs based on the actual fuel type, using the hierarchy of data sources specified in the methodology (supplier data, measurements, national default values or IPCC default values, as applicable).
Value(s) applied	Not applicable for ex-ante calculations, as no fossil fuel consumption is foreseen under normal operating conditions. If fossil fuel consumption occurs during the monitoring period, the applicable value will be determined based on the actual fuel type in accordance with the methodology.
Measurement methods and procedures	Default value
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of project emissions
Additional comment	-

Data / Parameter	EF_{CO2e,i,y}
Unit	tCO ₂ e/GJ
Description	CO ₂ emission factor of fuel type <i>i</i> in year <i>y</i>
Source of data	To be determined ex-post if fossil fuel consumption occurs based on the actual fuel type, using the hierarchy of data sources specified in the methodology (supplier data, measurements, national default values or IPCC default values, as applicable).
Value(s) applied	Not applicable for ex-ante calculations, as no fossil fuel consumption is foreseen under normal operating conditions. If fossil fuel consumption occurs during the

	monitoring period, the applicable value will be determined based on the actual fuel type in accordance with the methodology.
Measurement methods and procedures	Default value
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of project emissions
Additional comment	-

SDG 8

Data / Parameter	Number of Employment
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data	Plant records for all the employees/SSI Records/Letter from O&M independent for employment generation/VVB interview with employees, local stakeholders etc.
Value(s) applied	5
Measurement methods and procedures	The SSI Records/staff register/HR records for income generation of staff/HR Policies regarding health insurance/social security is checked for staff income generation and company policy benefits. The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, etc. Further, it is ensured that people get equal payment for equal work. The payment is based on work and no gender inequality for payment for work of equal value.
Monitoring frequency	Annually

QA/QC procedures	The information required for this parameter can be checked by VVB during site visit through interview with people or through relevant supporting documents.
Purpose of data	To monitor the SDG 8 Indicator
Additional comment	-

Safeguarding Principle 3-Community Health, Safety and Working Conditions

Data / Parameter	Quality of Employment
Unit	Number
Description	Training to staff
Source of data	Training records for all the employees / VVB interview with employees
Value(s) applied	1 training per monitoring period
Measurement methods and procedures	The Project proponent will organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures. Training will be given for the new employees.
Monitoring frequency	Annually
QA/QC procedures	The training records for all the employees
Purpose of data	To monitor the SDG 8 Indicator and mitigation measure of Principle 3
Additional comment	-

B.7.2 Sampling plan

There are no data or parameters monitored to be determined by a sampling approach.

B.7.3 Other elements of monitoring plan

Monitoring Plan

Monitoring will be carried out following the procedures set by the mechanism methodology A6.4-AMM-001 version 01.0 and all applicable tools of the above explained parameters. The monitoring consists of:

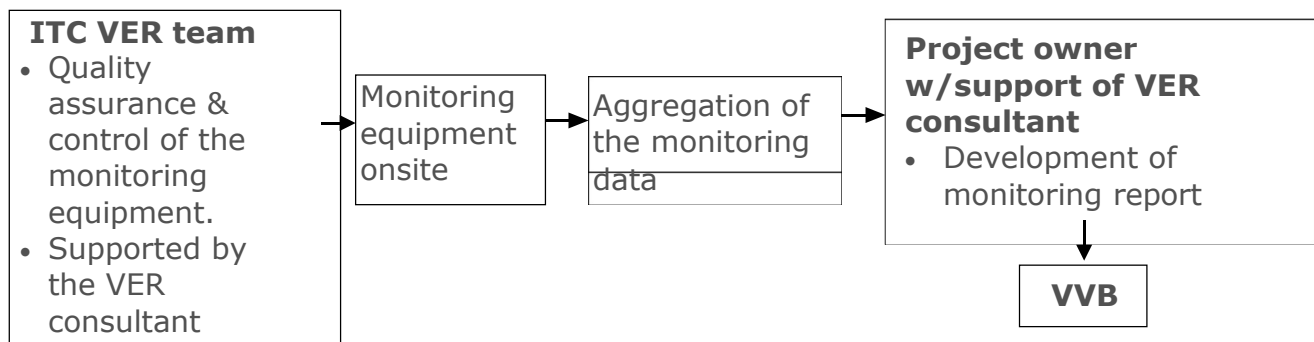
- Amount of landfill gas combusted in power generation units
- Temperature of the landfill gas sent to power generation to ensure compliance regarding dry basis for measurement
- Concentration of methane of the landfill gas
- Total amount of electricity exported to the grid
- Operating hours of power generation units

- Total amount of the electricity imported from the grid
- Annual review of applicable legal and regulatory requirements related to landfill gas collection, destruction and utilization to assess whether any changes affect the baseline assumptions. Where applicable, the parameter $F_{CH_4,BL,y}$ will be updated in accordance with Section 7.3.2.1.3 of the methodology.

Responsibilities for monitoring

The project owner is responsible for the operation and maintenance of the landfill and the installed equipment. The project owner is also responsible for the administration of the data, setting up a VER team who will be responsible for monitoring all data required to estimate emission reductions.

In the diagram below the organization of monitoring management and data application is presented.



Registration of the monitored data

ITC VER-Team will be responsible for quality assurance and quality control of the monitoring equipment. The data measured by the monitoring equipment will be stored and will be processed into a monitoring report, which will be submitted by the project owner. All the monitored data will be stored during the crediting period and for at least two years after the end of the crediting period, whichever occurs later.

Corrective actions and emergency preparedness

The VER-Team will regularly check the monitoring system on errors. In the case of errors, corrective actions will be undertaken by the VER-Team, or if required, by the supplier of the monitoring equipment.

QA/QC procedure

Strong quality assurance and quality control procedures will be taken to monitor the equipment and data collection. Equipment and facilities will be subject to a regular maintenance and testing regime to ensure accuracy following the supplier's manual.

The main and secondary meter readings are recorded monthly and cross-checked whether calibration is required. Maintenance and calibration of TEIAS meters is being carried out according to the System Usage Agreement. The meters are tested regularly as the instructions of the manufacturer or legal requirements. In addition, the calibration frequency of the meters is 10 years, and it is under the responsibility of TEIAS. Since TEIAS meters are sealed by TEIAS, the project proponent cannot intervene with the devices. The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. Data measured

by meters is crosschecked with the EPIAS records and meter reading forms obtained from TEİAŞ or authorized distribution company by TEİAŞ.

In accordance with paragraph 27 of the methodology, the regulatory analysis will be reviewed annually throughout the crediting period. Any changes in applicable legal or regulatory requirements that may affect the baseline assumptions will be documented. Where required, the parameter $F_{CH_4,BL,y}$ will be updated in accordance with Section 7.3.2.1.3 of the methodology and reflected in the emission reduction calculations.

Measuring of exported and imported electricity

The main meter for the monitoring of the electricity import and export is at grid connection. Monthly protocols based on the readings, that are confirmed by both TEIAS, and the project participant are prepared by the end of each month and stored. These protocols are also the basis of invoicing for the electricity sales from the project activity. The electricity meters are bidirectional and will measure both the imported and exported electricity from and to the grid.

The following figure shows the position of the different measurement points within the project boundary:

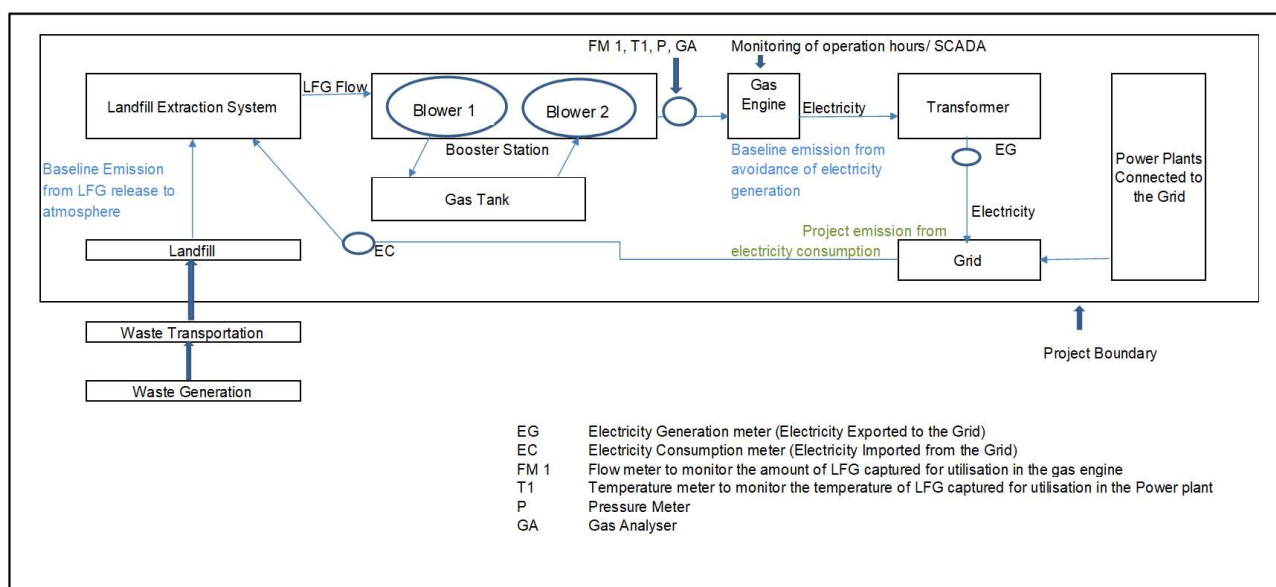


Figure 3. Monitoring Points

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

20/06/2011⁴⁹ The project start date relates to the date of construction agreement which commitment of expenditures related to the implementation of the Project and is

⁴⁹ Date of Construction Agreement

therefore selected as the start date of the project in accordance to Paragraph 4.1.39 of the Principles and Requirement Version 2.1.

The Project is a “regular” project activity as per Paragraph 4.1.42 of the Principles and Requirement Version 2.1 as the Local Stakeholders Consultation Meeting was carried out (on 21/04/2011) before the start date of the project activity which is 20/06/2011.

C.1.2 Expected operational lifetime of project
28 years 3 months

C.2. Crediting period of project

C.2.1 Start date of crediting period
19/05/2026 to 18/05/2033 (3rd crediting period)

C.2.2 Total length of crediting period
7 years

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#), ongoing monitoring is summarised below.

PRINCIPLES	MITIGATION MEASURES ADDED TO THE MONITORING PLAN
Principle 3-Community Health, All the employees will be trained about health and safety Safety and Working Conditions issues during operation phase of the project.	

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	As per Gold Standard Gender Policy, para 4.2 “Foundational gender-sensitive requirement – This strengthens Gold Standard’s ‘do no harm’ approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender ‘do no harm’ safeguards, gender gap analysis and gender sensitive stakeholder consultations.” The project is a landfill waste management project coupled with generation of power and is not a gender sensitive project because the project does not adversely impact women or men.
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	Project Proponent have operational policies/guidelines in place which does not differentiate between women and men. Project Proponent also conducted stakeholder meeting which was open for participation by all and both men and women. Hence, it is established that, there is no gender discrimination by project proponent.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey is party to Convention on Discrimination since 1972 to prevent any form of discrimination. (https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=I V-2&chapter=4&lang=en)
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	The Project shall complete the following gender assessment questions below: 1. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits? No, the Project being a landfill gas management project does not reduce access to or control of resources for women. 2. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)? No, the Project beneficiaries in terms of employment and social upliftment of the area are common for both the gender. The project does not adversely affect men and women in marginalised or vulnerable communities. Employment opportunities have been provided by the project proponent to the local people from the nearby area around the project site which in turn has improved the livelihood and living standards of the local people. 3. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)? No, all employees are given equal opportunities for betterment irrespective of the gender and provides

equal opportunity to women/ men to participate in the decisions of the project activities.

4. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?

Yes, the project takes into account gender roles and abilities of women/men. Job profile is allocated based on the type of work to be carried out.

5. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?

No, the project activity does not contribute to increase in women's workload that adds to their care responsibilities or prevents them from engaging in other activities. Project proponent also have Anti sexual harassment policy for prevention of any sexual harassment and thus it can be justified that the project contributes towards increased participation of women workload and promotes their active participation.

6. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?

No, the project is not potentially reproduced or it is not deepened discrimination against women based on gender. All employees are given equal opportunities for betterment irrespective of the gender. Thus, it can be justified that, the project contributes towards increased participation of women workload and promotes their active participation.

7. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?

No, the project does not limit women's ability to use, develop and protect natural resources. All employees

	in the organisation are given equal opportunities for betterment irrespective of the gender. 8. Is there a likelihood that the project would expose women and girls to further risks or hazards? No, the project activity does not expose women and girls to further risk or hazards. The project does not involve in generation of Hazardous and Non-hazardous Waste. Standard health & safety procedures are followed at site during operation. in fact, the project leads to improved electricity in the regional grid which in turn will restrict the usage of fuel for lighting or heating needs resulting in indoor air quality improvement. Thus, from the above justifications it can be concluded that an expert opinion is not required to justify gender requirements for the project activity.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	Expert was not required to assist with Gender issues at the stakeholder consultation. As per para 4.4 of the Gender Policy, the PP had organised a stakeholder consultation meeting for which the local people were invited irrespective of the gender and the locals were invited for the stakeholder meeting through public notice which was accessible for both the genders. In order to get continuous feedback from the local stakeholders, PP has also placed a grievance register at the site, which is accessible to all irrespective of gender, for recording any grievance/feedback about the project. The comments received in the grievance register, were planned to be resolved by the team of PP at the earliest. Thus, from the above justifications it can be concluded that an expert opinion is not required to justify gender requirements for the project activity.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

As required by the Gold Standard a Local Stakeholders Consultation and a Feedback Round has to be undertaken by the project participant in order to encourage the stakeholders to express their opinion and incorporate it in the project. In this way, the project developer, together with the public, ensures a project going along the main principles of sustainability. For more details on both the Local Stakeholder Consultation (LSC) and the Stakeholder Feedback Round see the LSC report and the GS Passport.

Local Stakeholder Consultation (LSC)

The project activity is exempted from conducting an Environmental Impact Assessment (EIA) according to Turkish Law and Regulation however the project participant has organized a Local Stakeholders Meeting on 21/04/2011 in accordance with the latest requirements of Gold Standard. The LSC meeting was held in Osmangazi Belediye Spor Kulübü Akpınar Kültür Sanat ve Spor Merkezi Akpınar Mahallesi 1050 Konutlar Havuz Sokak Osmangazi Bursa, 2 km away from the project site. The meeting has started at 13:00 and the participation level was high with more than 103 people including locals, muchtars, students, teachers, (68 Students and Teachers). 62% of the stakeholders participated to the meeting was females.

The meeting has started with an introduction session where ITC representatives introduced themselves and the company and provided explanation on the purpose of the meeting. The non-technical project description, meeting evaluation forms along with the sustainable indicators' explanation note, and questionnaires were printed and already been provided to the stakeholders before the start of the meeting. ITC representatives have also explained and gave information on these documents in the opening session. After the opening session, presentation on the project activity was given using a projection. As ITC is also involved in another similar project in Ankara Mamak, references and examples were mostly given from Mamak Project for a better understanding of the project activity. After the presentation a question-and-answer section took place allowing the stakeholders to understand the project in more detail as well as to clarify any questions from the stakeholders.

A detailed report on the LSC meeting and its outcomes could be found under the Local Stakeholders Consultation Report.

Stakeholder Feedback Round (SFR)

The Gold Standard stakeholders' consultation process has two main events: a "live" stakeholders consultation meeting and the stakeholders feedback round. The first consultation meeting includes a discussion of the design and consequent impacts of the project while the feedback round provides ground for stakeholders to provide feedback on how their comments have been taken into account.

The documents including the LSC report, the GS Passport and the PDD has been delivered to the stakeholders who have been selected as stakeholders to the project activity. The main communication method has been through e-mails and delivery of

hard copies of the mentioned documents for those who don't have an email address (specifically the locals through the mukhtar).

Summary of Comments Received

The general outcome of the first public consultation was positive. There was a widespread opinion that the project is favorable and a major improvement to the prevailing conditions of the local area. There were two main topics discussed:

- the creation of local employment is beneficial
- it is an important environmental improvement from the prevailing conditions, in which foul odours, leachate pollution of groundwater and smoke from fires were a part of the locals' life

Stakeholder Feedback Round:

The feedback round started on 18/05/2012 with sending out the documents to the stakeholders and no feedback has been received till 18/07/2012.

The details of the Stakeholders Consultation Process could be found under the GS LSC Report and the GS Passport.

Stakeholder comment	Was comment taken into account (Yes/ No)?	Explanation (Why? How?)
There is a significant odour problem in the area	Yes	The project will have a significant impact on the odour problem in the region. The odour from the landfill is caused by a gas (hydrogen sulphide) in the LFG itself. It can cause unpleasant odour even at very low concentrations. The landfill area will be first covered with a layer to prevent LFG leakage and the trapped LFG will be sent to gas engines where it is burned. This will also eliminate the effect of the gas (hydrogen sulphide) significantly.
Will the project create employment opportunities in the area?	Yes	As a general principle of ITC, employment recruitments will be made mostly from the nearby regions and villages especially for the unqualified jobs.
Can we benefit from the electricity generated for free?	No	According to the current practices and legislations, ITC can only export the electricity generated to the national grid.

E.2 Final continuous input / grievance mechanism

METHOD	INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.
Continuous Input / Grievance Expression Process Book (mandatory)	Grievance register is being placed at the respective site for the local stakeholders. This shall be an ongoing process and any stakeholder can register their feedbacks/ comments in the Grievance register which is duly addressed if found relevant. Global stakeholders can log their grievances through the provided link.
GS Contact (mandatory)	help@goldstandard.org
Other	The Grievance Register is being placed at project site

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 Human Rights		
P.1.1.1 	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	☐ YES ☒ NO
P.1.1.1 	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	☐ YES ☒ NO
P.1.1.2 	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.1.1.3 	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	☐ YES ☒ NO
P.1.1.3 	Does this project undermine national or regional measures for the realisation of the right to development?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.		
Please add text here...		
Would the project potentially involve or lead to:		
P.1.1.1 	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.2 	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO

P.1.1.3 	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	☐ YES ☐ POTENTIALLY ☒ NO
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Briefly describe below how the project incorporates a human rights-based approach.

For example, by describing how the project design:

- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)
- includes measures to assist the government to realise (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

Please add text here....

[P.2 | GENDER EQUALITY AND WOMEN'S EMPOWERMENT](#)

P.2.1.1 	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.2.1.2 	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	☐ YES ☒ NO
P.2.1.2 	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	☐ YES ☒ NO
P.2.1.2 	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	☐ YES ☒ NO
P.2.1.2 	Is information about project objectives being communicated in a way that is inappropriate for the local context and not tailored to the methods of understanding of both women and men, which could hinder their participation?	☐ YES ☒ NO
P.2.1.3 	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	☒ YES ☐ NO

P.2.1.4 	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	☒ YES ☐ NO
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If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

The project does not apply any gender-specific employment policy. Due to project activity, no gender discrimination has not been observed. according to article 10 of the constitution of the republic of turkey in turkey women and men have equal rights. (https://www.tbmm.gov.tr/anayasa/anayasa_2018.pdf) On the other hand, discrimination (job and profession) agreement was accepted on september 9, 1967 in turkey. <https://ailevecalisma.gov.tr/media/1332/tuerkiyetaaraf%c4%b1ndan-onaylanan-ilo-soezle%c5%9fmeleri.pdf> (c111), according to this agreement women and men have equal rights in terms of jobs and professions. For this reason, by seeking this, project he project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks. moreover, in the main office of the project owner company there are women employees as well. therefore, project contributes to recognition of women rights implicitly.

Would the project potentially involve or lead to:

P.2.1.1 	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.1 	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

Please add text here....

P.3 | COMMUNITY HEALTH AND SAFETY

P.3.1.1 	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	☐ YES ☒ NO
P.3.1.2 	Does the project involve any potential risks to the workers' safety and health?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

P.3.1.1 	construction and/or infrastructure development (e.g., roads, buildings, dams)?	☐ YES ☒ NO
P.3.1.2 	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	☐ YES ☐ POTENTIALLY ☐ NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.

Please add text here....

P.4 | CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 | Sites of Cultural and Historical Heritage

P.4.1.1 	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

P.4.1.1.1 	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1.1 	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1.1 	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1.1 	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the law, scope and nature of proposed development and its potential consequences?	☐ YES ☐ NO ☒ NA
P.4.1.3 	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	☐ YES ☐ NO ☒ NA
P.4.1.4 	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.1.4 	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

P.4.2 | Forced Eviction and Displacement

<u>P.4.2.1 </u>	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

<u>P.4.2.1 </u>	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
<u>P.4.2.2 </u>	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
<u>P.4.2.2 </u>	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	☐ YES ☐ POTENTIALLY ☒ NO
<u>P.4.2.2 </u>	If answer to question above is "YES" or "POTENTIALLY", - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design?	☐ YES ☐ NO ☒ NA
<u>P.4.2.3 </u>	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
<u>P.4.2.3 </u>	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

P.4.3 | LAND TENURE AND OTHER RIGHTS

P.4.3.1	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

P.4.3.1	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.1	uncertainties with regards to land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.2	Changes in legal arrangements, if yes, are the changes done in line with relevant laws and regulations?	☐ YES ☐ NO ☒ NA
P.4.3.2	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	☐ YES ☐ NO ☒ NA
P.4.3.3	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	☐ YES ☒ NO ☐ NA
P.4.3.4	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☐ NA
P.4.3.4	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA
P.4.3.5	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	☒ YES ☐ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Continuous input process book was provided to muhtar of village. muhtar is the representative of the village and most appropriate person to handle the book and complaints from the village.

P.4.4 INDIGENOUS PEOPLES		
P.4.4.1 	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here....		
Would the project potentially involve or lead to:		
P.4.4.1 	affect areas where indigenous peoples are present (including project area of influence)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 	affect areas, land and territory claimed by indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.7 	If answer to above questions is "YES" or "POTENTIALLY", - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines?	☐ YES ☐ NO ☒ NA
P.4.4.3 	risk of forcibly removing indigenous people from their lands and territories?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.4 	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.5 	If answer to question above is "YES" or "POTENTIALLY"	☐ YES ☐ NO

P.4.4.6 	- Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ? - Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive? - Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	☒ NA
P.4.4.8 	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	☐ YES ☐ NO ☒ NA
P.4.4.8 	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	☐ YES ☐ NO ☒ NA
P.4.4.9 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.4.9 	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.5 | CORRUPTION](#)

P.5.1.1 	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	☐ YES ☒ NO
P.5.1.1 	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

ECONOMIC SAFEGUARDING PRINCIPLES

P.6 | ECONOMIC IMPACTS

P.6.1 | LABOUR RIGHTS AND WORKING CONDITIONS

P.6.1.1 	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	☐ YES ☒ NO
P.6.1.1 	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	☐ YES ☒ NO
P.6.1.2 	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	☐ YES ☒ NO
P.6.1.3 	Does the project violate national laws, if available regarding non-discrimination in employment?	☐ YES ☒ NO
P.6.1.4 P.6.1.5 	Does the project allow child labor?	☐ YES ☒ NO
P.6.1.7 P.6.1.8 	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	☐ YES ☒ NO
P.6.1.9 	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	☐ YES ☒ NO
P.6.1.10 	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project potentially involve or lead to:

(NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)

P.6.1.1 	use of forced labour?	☐ YES ☐ POTENTIALLY ☒ NO
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P.6.1.1 	working conditions that do not meet national labour laws and international commitments?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 	working conditions that may deny freedom of association and collective bargaining?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 	absence of documented working agreements with all individual workers <i>if such agreements do not exist, or do not address working conditions and terms of employment, the project developer shall provide reasonable working conditions and terms of employment.</i>	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 	use of migrant workers? <i>if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.</i>	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 	having no arrangements for basic services ⁵⁰ for workers? <i>the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association</i>	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	☐ YES ☐ POTENTIALLY ☒ NO

⁵⁰ Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

P.6.1.2 	harassment, intimidation, and/or exploitation, especially in regard to women?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.3 	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 	use of child labour? (including third-party engaged workers)	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 	inadequate and verifiable mechanisms for age verification?	☐ YES ☒ NO
P.6.1.7 	no processes and measures in place for the safety and health of project workers?	☐ YES ☒ NO
P.6.1.7 	No provision of safety and health training provisions, including on the proper use and maintenance of personal protective equipment conducted by competent persons and the maintenance of training records?	☐ YES ☒ NO
P.6.1.7 	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	☐ YES ☒ NO
P.6.1.8 	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	☐ YES ☒ NO
P.6.1.9 	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	☐ YES ☒ NO
P.6.1.10 	No grievance mechanism available for workers to voice workplace concerns.	☐ YES ☒ NO
P.6.1.11 	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	☐ YES ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES](#)

P.6.2.1 	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	☐ YES ☒ NO
P.6.2.2 	Does the project have potential negative impacts or pose a risk to the local economy?	☐ YES ☒ NO

P.6.2.2 	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	☐ YES ☒ NO
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If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here...

Would the project involve or lead to:

P.6.2.2 	economic impacts (negative/detrimental) to the local economy?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.2.2 	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.7 | CLIMATE AND ENERGY](#)

[P.7.1 | GHG EMISSIONS](#)

P.7.1.1 	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.7.1.1 	increase greenhouse gas emissions over the Baseline Scenario?	☐ YES ☐ POTENTIALLY ☒ NO
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If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.7.2 | ENERGY SUPPLY](#)

P.7.2.1 	Does the project pose a risk to the availability and reliability of energy supply to other users?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.7.2.1 	negative impact on the availability and reliability of energy supply to other users?	☐ YES ☐ POTENTIALLY ☒ NO
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If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

P.8 | WATER

P.8.1 | IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 	Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?	☐ YES ☒ NO
P.8.1.1 	Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?	☐ YES ☒ NO
P.8.1.1 	Does the project have the potential risk to exceed the rate of recharge for the groundwater source?	☐ YES ☒ NO
P.8.1.1 	Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.8.1.1 	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	☐ YES ☐ POTENTIALLY ☒ NO

P.8.1.1 	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.2 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.8.2 | EROSION AND/OR WATER BODY INSTABILITY](#)

P.8.2.1 	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.8.2.2 	negatively impact on the catchment area?	
P.8.2.5 	<i>If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length assessment. Regular reassessment of these measures is necessary.</i>	☐ YES ☐ POTENTIALLY ☒ NO
P.8.2.6 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9 | ENVIRONMENT, ECOLOGY AND LAND USE](#)

[P.9.1 | LANDSCAPE MODIFICATION AND SOIL](#)

P.9.1.1 	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project?	☐ YES ☒ NO
P.9.1.3 		

	<i>If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.</i>	
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.1.4 	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.1.4 	if answer to above question "yes" or "potentially", does project adopt appropriate and culturally sensitive sustainable resource management practices?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.2 | VULNERABILITY TO NATURAL DISASTER](#)

P.9.2.1 	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.2.2 	any potential risks that require emergency preparedness and response planning?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.2.2 	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

P.9.3 BIOSAFETY AND GENETIC RESOURCES		
P.9.3.1 	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here....		
Would the project involve or lead to:		
P.9.3.1 	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	☐ YES ☐ POTENTIALLY ☒ NO
P.9.3.1 	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	☐ YES ☐ NO ☒ NA
P.9.3.2 	If answer to above question is "yes" has any risks identified in the risk assessment?	☐ YES ☐ NO ☒ NA
P.9.3.3 	Forestry (for example Afforestation/Reforestation) involving GMO planting? <i>Note - Forestry projects (for example Afforestation/Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.</i>	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here....		
P.9.4 RELEASE OF POLLUTANTS		
P.9.4.1 	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here....		
Would the project involve or lead to:		

P.9.4.1 	any potential risk of pollutant release that cannot be avoided?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.4.3 	If answer to above question is "Yes" or "potentially", has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	☐ YES ☐ NO ☒ NA
P.9.4.2 	If answer to above question is "Yes" or "potentially", do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	☐ YES ☐ NO ☒ NA
P.9.4.3 	If answer to above question is "Yes", is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.5 | HAZARDOUS AND NON-HAZARDOUS WASTE](#)

P.9.5.1 	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	☐ YES ☒ NO
P.9.5.3 	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO
P.9.5.5 	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.5.1 	the generation and management of waste materials?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.5.1 	treatment, destruction, or disposal of waste material?	☐ YES ☒ NO ☐ NA
P.9.5.1 	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues	☐ YES ☐ NO

	resulting from the handling and processing of waste material?	☒ NA
P.9.5.3 	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☐ NO ☒ NA
P.9.5.3 	If answer to above question is "yes", does project has measures in place to address health risks?	☐ YES ☐ NO ☒ NA
P.9.5.4 	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.6 | PESTICIDES & FERTILISERS](#)

P.9.6.1 	Does the project involve the use of chemical pesticides?	☐ YES ☒ NO
P.9.6.5 	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	☐ YES ☒ NO
P.9.6.6 	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.6.1 	chemical pesticides use for pest management?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.4 	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	☐ YES ☐ NO ☒ NA
P.9.6.5 	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	☐ YES ☐ POTENTIALLY ☒ NO

P.9.6.5 	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	☐ YES ☐ NO ☒ NA
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If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.7 | HARVESTING OF FORESTS](#)

P.9.7.1 	Does the project have a risk of unsustainable forest management, including timber harvesting?	☐ YES ☒ NO
P.9.7.1 	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	☐ YES ☒ NO
P.9.7.1 	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

[P.9.8 | FOOD SECURITY](#)

P.9.8.1 	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	☐ YES ☒ NO
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If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.8.1 	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	☐ YES ☐ POTENTIALLY ☒ NO
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If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.9 | ANIMAL WELFARE](#)

P.9.9.1 	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	☐ YES ☒ NO
P.9.9.2 	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	☐ YES ☒ NO
P.9.9.4 	Does the project involve the risk of administering synthetic growth promoters, including hormones?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.9.1 	animal husbandry or harvesting of fish populations or other aquatic species? ⁵¹	☐ YES ☐ NO ☒ NA
P.9.9.1 	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.9.3 	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	☐ YES ☐ NO ☒ NA
P.9.9.5 	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	☐ YES ☐ NO ☒ NA
P.9.9.6 	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	☐ YES ☐ NO ☒ NA
P.9.9.7 	inappropriate spacing per animal and stocking rates per land unit?	☐ YES ☐ NO ☒ NA
P.9.9.8 	inadequate measures to address the specific needs of aquatic animals?	☐ YES ☐ NO ☒ NA

⁵¹ 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

P.9.9.9 P.9.9.10 	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	☐ YES ☐ NO ☒ NA
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If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.10 | HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS](#)

P.9.10.1 	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	☐ YES ☒ NO
P.9.10.2 	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.10.1 	identified habitats as HCV areas and or Critical habitats?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.1 	If answer to above question is "yes", does the project have any risks that could negatively impact the catchment, project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	☐ YES ☐ NO ☒ NA
P.9.10.1 	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	☐ YES ☐ NO ☒ N/A
P.9.10.2 	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps,	☐ YES

	temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ POTENTIALLY ☒ NO
P.9.10.2 	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	☐ YES ☐ No ☒ NA
P.9.10.3 	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	☐ YES ☐ No ☒ NA
P.9.10.4 	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native ecosystems following HCV approach as per the given requirements?	☐ YES ☐ No ☒ NA
P.9.10.5 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

Please add text here....

[P.9.11 | ENDANGERED SPECIES](#)

P.9.11.1 	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	☐ YES ☒ NO
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If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Please add text here....

Would the project involve or lead to:

P.9.11.2 	distortion of habitats of endangered species?	☐ YES ☐ POTENTIALLY ☒ NA
P.9.11.2 	If answer to the above question is "yes", does the project plan to protect and enhance them?	☐ YES ☐ POTENTIALLY ☐ NO ☒ N/A
P.9.11.2 	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO

		☒ NA
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here....		
P.9.12 INVASIVE ALIEN SPECIES		
P.9.12.1 	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
Please add text here....		
Would the project involve or lead to:		
P.9.12.1 	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.1 	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.2 	risk of spreading alien species into areas in which they have not already been established?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
Please add text here....		

APPENDIX 2 - CONTACT INFORMATION OF PROJECT DEVELOPER(S)

Organization name	ITC-KA Enerji Üretim Sanayi ve Ticaret A.Ş.
Registration number with relevant authority	
Street/P.O. Box	Yukarı İmrohor Mh. Nato Yolu Cad. No: 190 G
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Salutation	MR
Last name	Gültekin
Middle name	-
First name	Mehmet
Department	
Mobile	
Direct tel.	
Personal e-mail	

APPENDIX 3 - LUF ADDITIONAL INFORMATION

N/A

APPENDIX 4 - DESIGN CHANGES

N/A

DOCUMENT HISTORY

Version	Date	Remarks
1.5	29 June 2023	Editorial changes to match V2.1 of the Safeguarding Principles Requirements
1.4	21 June 2023	Editorial changes to match V2.0 of the Safeguarding Principles Requirements
1.3	14 April 2023	Integrated the design change memo as annex of the document. Editorial changes
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption