Gold Standard for the Global Goals

Climate Security & Sustainable Development

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v.1.5**

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document

This document contains the following sections

KEY PROJECT INFORMATION

GS ID of Project	12624
Title of Project	SOCAR HYDRO BUNDLE-3
Time of First Submission Date	22/04/2024
Date of Design Certification	05/02/2025
Version number of the PDD	07
Completion date of version	14/04/2025
Project Developer	1. “Azerenerji” Open Joint-Stock Company 2. SOCAR Trading SA
Project Representative	GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş.
Project Participants and any communities involved	1. “Azerenerji” Open Joint-Stock Company (Legal Owner) 2. SOCAR Trading SA (Project Owner) 3. GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş. (Project Consultant)
Host Country (ies)	Azerbaijan
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	RE Activity Requirements (GS4GG), Version 1.4
Methodology (ies) applied and version number	AMS-I.D. Grid connected renewable electricity generation, Version 18.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☐ Regular ☒ Retroactive

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action (mandatory)	Reduction in GHGs emissions	8,311	tCO_2e (GS VERs)
7 Affordable and Clean Energy	Renewable energy generation	20,448	MWh
8 Decent Work and Economic Growth	Increased employment opportunities	8	Number of recruited staff

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

SOCAR HYDRO BUNDLE-3 is a small-scale bundled hydropower plant project which is implemented by “Azerenerji” Open Joint-Stock Company. The project is reducing national energy deficit and development of local industries as it allows the use of local sources for energy generation to meet the increasing demands. According to the methodology, baseline scenario was identified as “the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”.

The purpose of the project is to generate clean energy by harnessing the hydro power and providing the energy to the Azerbaijan national grid. By implementing the project, investors also aim to reduce dependency to the fossil fuels thereby reducing the sources of environmental pollution.

According to the applied methodology the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the power plant is connected to. The power plant is connected to the National Electricity Grid of Azerbaijan.

In this scope, the project owner installed hydropower plants with the purpose of contributing to the national economy by meeting the increased electricity demand. Mirik

and Garigishlag has capacities of 3.3 MW and 3.8 MW, respectively. Total output of the plant will be limited at 7.1 MW. Mirik and Garigishlag are located on Zabukh river, in the territory of Lachin district, Baku Province, Azerbaijan.

The project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO_2 emissions from electricity generation by fossil fuel power plants connected to Azerbaijani National Power Grid. The average annual generated energy of 20,448 MWh will be able to deliver a reduction in emissions of around 8,311 tCO_2e (tons of carbon dioxide equivalent) per annum and 41,570 tCO_2e in the first crediting period.

Main goals of the SOCAR-3 Hydro Bundle include;

- Utilization of the hydro potential of Azerbaijan in order to meet increasing electricity demand and maintain energy security. In total, the hydro energy capacity of Azerbaijan is lower than 16%[1] of the total installed capacity. However, electricity generation of hydropower plants in overall generation in Azerbaijan is below 6%[2].
- Reduction of GHG emissions through increasing share of renewable resources.
- Contribution to economic development by creating direct and indirect job opportunities during construction and operation phases
- Reduction of import dependency on fossil fuel weighed electricity sector and diversify generation mix through use of local resources
- Contribution to sustainable development through supporting local community and local economy

In terms of local benefits, the project mainly contributes to the reduction of local air pollutants and local employment.

[1] The Ministry of Energy of The Republic of Azerbaijan para. 6 & 7 https://minenergy.gov.az/en/alternativ-ve-berpa-olunan-enerji/azerbaycanda-berpa-olunan-enerji-menbelerinden-istifade#:~:text=The%20total%20power%20generation%20capacity,20.3%20%25%20of%20the%20total%20capacity. Calculated as 1,301.8/8,320.8 x 100% = 15.65%

[2] Latest available value (2022) https://www.stat.gov.az/source/balance_fuel/ https://www.stat.gov.az/source/balance_fuel/en/005_4en.xls
Calculated as : (Cell E40 / C40 * 100% = 5.49%)

Table 2 - Milestones of SOCAR-3 Hydro Bundle

Milestone	Date
Investment Decision Date (Construction Agreements)[3]	25/04/2023
EIA Report of Garigishlag	30/11/2023
EIA Report of Mirik	26/12/2023
Land Permit of Mirik	15/12/2023
Land Permit of Garigishlag	25/12/2023
Calibration of Meters	27/03/2024
Commissioning of Mirik[4]	27/03/2024
Commissioning of Garigishlag[5]	28/03/2024
1st Crediting period	01/04/2024 – 31/03/2029
Date of Listing on Gold Standard Registry	15/05/2024

Hydro power plants that have an installed capacity under 10 MW are not required to prepare an EIA report and receive approval from the Ministry. However, in accordance with the Laws of the Republic of Azerbaijan "On Environmental Protection" (1999), "On Environmental Safety" (1999), "On Environmental Impact Assessment" (2018) and other legal and normative documents, the project's environmental impact assessment report is prepared.

A.1.1. Eligibility of the project under Gold Standard

Project activity involves construction of a 7.1 MW hydro power plant for electricity generation. Project is categorized as “Renewable Energy Supply” according to GS definition whereas it is included in the sectoral scope 1 “Energy Industry – Renewable Sources” according to the UNFCCC definition. Project type is regular as per the GS rules.

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

[3] Project Start Date
[4] Initial commissioning document of Mirik HPP
[5] Initial commissioning document of Garigishlag HPP

i) The project is submitted to GS for approval of eligibility.

ii) Gold Standard approval, GS4GG Principles and Requirements:

Project meets eligibility criteria as per the GS4GG principles and requirements;

- Project is a renewable energy (hydro) installation activity.
- Project activity include physical action/implementation on the ground.
- Project is located in Azerbaijan, which is eligible for VER projects.
- Project is a small-scale renewable energy plant with defined boundaries.
- Project contributes to sustainable development goals.
- Project is in compliance with GS safeguarding principles.
- Stakeholders are involved in project implementation and planning during local stakeholder consultation.
- Project outcomes will be validated/verified by approved bodies.
- Additionality is demonstrated as per the applicable tools and methodologies.

iii) The project meets the General Eligibility Criteria of the applicable Activity Requirements

Scale of the project activity: The project is a 7.1 MW hydropower project and does not exceed the 15 MW limit for small scale project according to UNFCCC regulations. Thus, the project is categorized under small scale.

The project connected to national electricity grid is located in a Land Locked Developing Country (LLDC), Azerbaijan[6], which is an upper middle income country[7]. As per the Renewable Energy Activity Requirements v1.4 para 2.1.3, the project meets the eligibility criteria by being a LLDC, not defined as a High-Income Country.

Other Renewable Energy Activity Requirements:

- 4.1 Principle-1: Contribution to Climate Security & Sustainable Development: Project contributes 3 SDGs including SDG 13. Please see Section B.6.1.
- 4.2 Principle-2: Safeguarding Principles: Please see Section D.

[6] https://www.un.org/ohrlls/content/list-lldcs
[7] https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

- 4.3 Principle-3: Stakeholder Inclusivity: Please see Section E.
- 4.4 Principle-4: Demonstration of Real Outcomes: Please see Section B.6.4.
- 4.5 Principle-5: Financial Additionality & Ongoing Financial Needs: Please see Section B.5.

iv) The project is not registered with any other voluntary or compliance schemes.

The project does not claim Green or White certificates or equivalents that may result in double counting from carbon dioxide emission reductions. Project is not registered and will not benefit from other certification schemes or renewable energy labelling standards.

v) The activity is NOT located in a host country, region, locality or state that has an emission reduction cap enforced OR has the possibility to trade emissions that include the scope of the proposed project.

As Azerbaijan, the host country, has no cap on GHG emissions, the GS VERs do not need to be backed up by allowances or other denominated units resulting in local authorities stating that an equivalent number of allowances will be retired to back up the GS VERs issued.

vi) 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 program of a similar nature. If such overlapping occurs, proof of the fact that project owners are different will be provided.

vii) The project is in compliance with Azerbaijan's legal, environmental, ecological and social regulations. During the implementation of the project activity and establishing the baseline scenario the relevant national and/or sectoral policies, regulations and circumstances are taken into account. Project is implemented in compliance with local environmental regulations.

viii) Type of the project activity

The project fits into "Renewable Energy Supply" category as defined generation and delivery of energy services from non-fossil and non-depletable sources as hydro being one.

ix) Greenhouse gases

The project activity complies with Gold Standard and UNFCCC eligibility criteria as reducing carbon dioxide emission that is mainly produced by the Azerbaijani Grid dominated by fossil fuel power plants.

x) Official Development Assistance

As Azerbaijan being a part of the DAC list of ODA Recipients of OECD[8], a written declaration of non-ODA for the project activity will be submitted.

xi) Contact Details

Name and contact details of all Project Participants are provided in Appendix 2 of the PDD.

xii) Legal Ownership

“Azerenerji” Open Joint-Stock Company and SOCAR Trading SA are the legal owner of the products and have all legal rights of the project. Details on full and uncontested legal ownership are provided in Section A.1.2.

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

“Azerenerji” Open Joint-Stock Company and SOCAR Trading SA are the legal owner of the products. “Azerenerji” Open Joint-Stock Company is the legal owner of the power plant and has all legal rights of the project. The legal owner of the power plant is “Green Energy Power Station” LLC, who is legally owned by “Azerenerji” Open Joint-Stock Company by 100%, thus making AzerEnerji OJSC also the legal owner of the project activity.

i) Project owners are also the legal holder of the project. Ownership is not transferred from other beneficiaries.

ii) “Azerenerji” Open Joint-Stock Company has all the rights to install and operate hydro power plants in the defined site.

[8] https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC-List-of-ODA-Recipients-for-reporting-2022-23-flows.pdf

iii) Legal right for installation of power plant and generating electricity on project site is defined by local regulations.

iv) Land is owned by the government and the project has Land Permit to use the land.

A.2 Location of project

Mirik and Garigishlag are located on Zabukh river, in the territory of Lachin district, Baku Province, Azerbaijan.

Figure 1 - Location of the Lachin District

Figure 2 - Location of Mirik and Garigishlag

Table 3 - Project Coordinates

Bundle	Latitude (N)	Longitude (E)
Mirik	39°41'27.46"	46°20'43.78"
Garigishlag	39°38'48.06"	46°24'17.90"

A.3 Technologies and/or measures

SOCAR HYDRO BUNDLE-3 is a small-scale hydro power type, grid connected renewable electricity generation project. The installed capacity of Mirik is 3.3 MW and Garigishlag is 3.8 MW. The project uses Francis turbines. As per Tool 10, default value for technical lifetime for hydro turbines is 150,000 hours which is around 17 years. However, in practice, lifetimes are longer. The project lifetime of hydro turbines is usually 30–40 years (in operational hours). In determining the technical lifetime, as per Tool 10 v1.0, Option (c): Use default values has been chosen.

Condition	The Project
In determining the technical lifetime, as per Tool 10 v1.0, Option (c): Use default values has been chosen. This option can only be applied if: (i) The project participants can demonstrate that the equipment has been operated and maintained according to the recommendations of the equipment supplier;	Equipment has been operated and will be operated according to recommendations of the equipment supplier.
(ii) There are no periodic replacement schedules or scheduled replacement practices specific to the industrial facility, that require early replacement of equipment before the expiry of the technical lifetime; and	No periodic replacement schedule or scheduled replacement is present. The equipment are not expected to be replaced before their technical lifetime.
(iii) The equipment has no design fault or defect and did not have any industrial accident due to which the equipment can not operate at rated performance levels.	The equipment has no design fault or defect yet to be found. The equipment are working as expected.

The plant load factor is the ratio between the actual energy generated by the plant to the maximum possible energy that can be generated with the plant working at its rated power and for a duration of an entire year calculated as 32.88%. Calculation is given below:

$$Plant\ Load\ Factor\ (PLF) = \frac{Total\ Generation}{Total\ Installed\ Power \times Operating\ Time\ in\ a\ Year}$$

$$PLF_{Mirik} = \frac{9{,}504\ MWh/year}{3.3\ MW \times 365\ days \times 24\ hours} = 32.88\%$$

$$PLF_{Garigishlag} = \frac{10{,}944\ MWh/year}{3.8\ MW \times 365\ days \times 24\ hours} = 32.88\%$$

Technical properties of the installed equipment are given below.

Table 4 - Technical characteristics of hydromechanical equipment

	Mirik	**Garigishlag**
Aggregates	1	1
TURBINE		
Type	Francis FSP-790	Francis FSP-750
Power	3182.5 kW	4625.75 kW
Water discharge (Q)	4.65 m^3/s	4.0 m^3/s
Revolutions	750 rpm	750 rpm
Escape (emergency) revolutions	1704 rpm	1650 rpm
Height of the water intake point relative to the HPP	74.7 m	126.36 m
GENERATOR		
Type	MJHT 800 MB8 B3	MJHT 800 LA8 B3
Apparent power (S)	4000 KVA	4600 KVA
Active power (P)	3200 KVT	3680 KVT
Current	231 A	266 A
Voltage	10000 V	10000 V
Frequency	50 Hz	50 Hz
Excitation Voltage	42 V	35.7 V
Excitation Current	6 A	5.1 A
Power factor	0.8	0.8

Insulation class	F	F

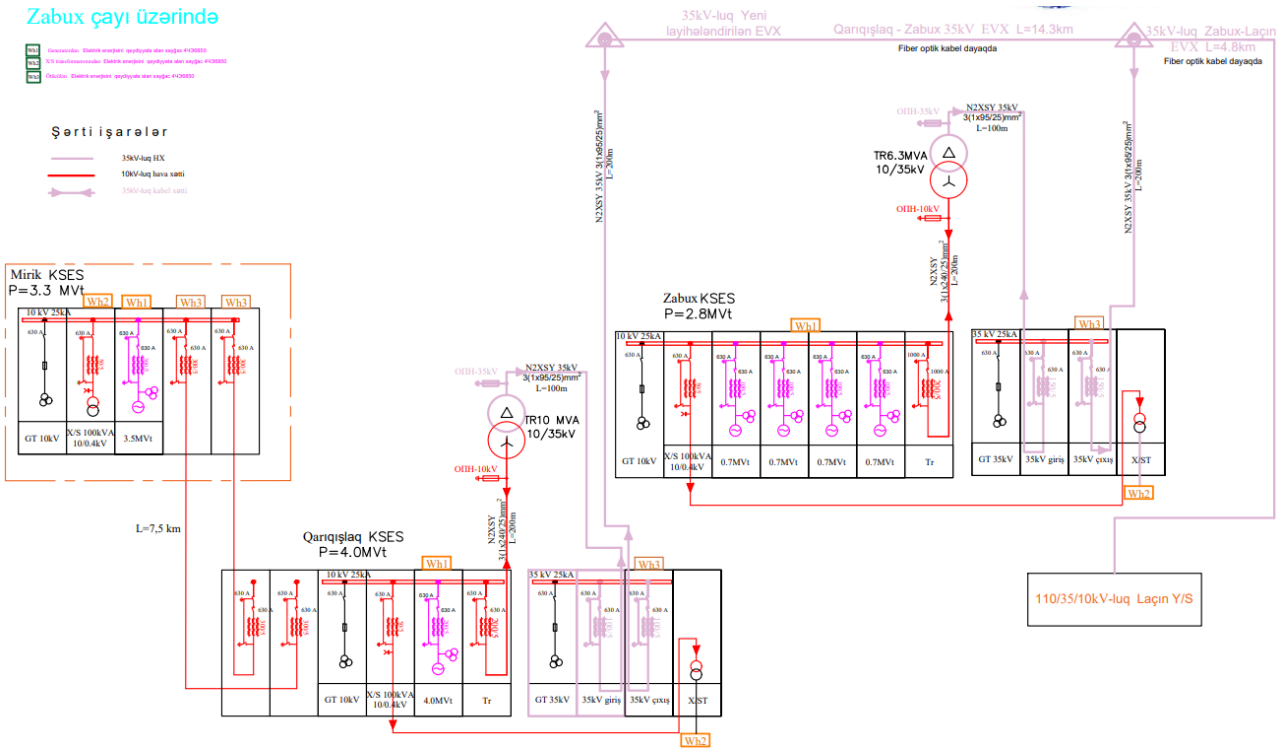

Figure 3 - Single line diagram of the Project

Table 5. Technical properties of DG set

	Mirik	**Garigishlag**
Brand	KJ Power Generator	KJ Power Generator
Model	5KJA150ATS	5KJA150ATS
ESP (kVA)	150	150
Serial	646868	646000

Table 6 - Information on electricity meters

	Energy Meters	
	Mirik	Garigishlag
Serial no.	007251182200767	007251182200632
Brand	Energomera	Energomera
Class	0.2S	0.2S
Type	TSE6850	TSE6850
Calibration date	27/03/2024	27/03/2024

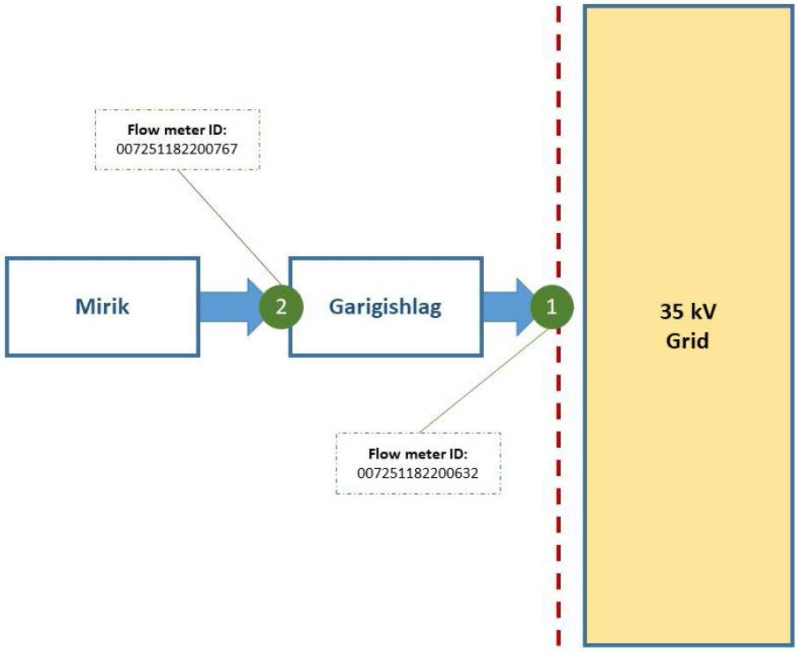

Figure 4. Configuration of the meters

EG of Mirik = Value read directly from meter 007251182200767

EG by Garigishlag is calculated as follows:
EG of Garigishlag = (Value read from meter 007251182200632) - (EG of Mirik)

Therefore, total EG from the bundle is measured from the meter 007251182200632.

According to the methodology baseline scenario has been identified as “the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources”. Electricity generated at the project is fed to the national grid via 35 kV/110 kV Daşkesen HX substation. The project activity transfers environmentally safe and sound technology and know-how to the host country since such technologies are still in the phase of development and not yet common in Azerbaijan.

A.4 Scale of the project

For the purpose of applying UNFCCC methodologies for quantification of GHG reductions, “small scale” is defined as Renewable Energy Project with installed capacity less than equal to 15 MWe or 45 MWe[9]. Therefore, project is considered to be a “small scale” project with 7.1 MW.

A.5 Funding sources of project

Project is funded by Project Owners’ resources.

[9] https://www.goldstandard.org/project-developers/standard-documents

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

B.1. Reference of approved methodology (ies)

The United Nations approved small-scale methodology applicable to this project is AMS-I.D "Grid connected renewable electricity generation" Version 18.0[10].

ACM0002 refers to the following tools:

- Tool 01: "Tool for the demonstration and assessment of additionality", Version 07.0.0[11],
- TOOL 03 Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, V03.0[12]
- Tool 07: "Tool to calculate the emission factor for an electricity system", Version 07.0[13],
- Tool 10: "Tool to determine the remaining lifetime of equipment", Version 01[14],
- Tool 21: "Demonstration of additionality of small-scale project activities", Version 13.1[15],
- Tool 27: "Investment analysis", Version 14.0[16].

Following methodological tool is also applicable to the project:

- Tool 20: "Assessment of debundling for small-scale project activities", Version 04.1[17].

[10] https://cdm.unfccc.int/UserManagement/FileStorage/2P7FS6ZQAR84LG3NMKYUH50WI9ODBC
[11] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[12] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf/history_view
[13] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[14] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf
[15] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-21-v13.1.pdf
[16] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v14.0.pdf
[17] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-20-v4.1.pdf

B.2. Applicability of methodology (ies)

Project meets the applicability criteria defined by the selected methodology, which is AMS-I.D, ver 18.0. The selected methodology is in line with the requirements and is therefore justified to be used for the following reasons.

No.	Applicability Conditions	The Project
1	This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	The project activity is a small-scale hydro power type, Greenfield, grid connected renewable electricity generation project. So, the project meets (a) Install a Greenfield power plant.
2	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir; (b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m2 ; (c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m2	The project is a hydro power plant. (a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir.
3	If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-	There is no new unit in the project. There is no non-renewable

	fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	component in the project.
4	Combined heat and power (co-generation) systems are not eligible under this category.	The project does not involve combined heat and power generation activity.
5	In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The Project is a hydro power plant with renewable components only, with a capacity of less than 15 MWe. The project does not involve capacity addition.
6	In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	The total output of the power plant does not exceed the limit of 15 MW.
7	In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	The project is the installation of a hydro power plant. Hence, this condition is N/A.
8	In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	The project is the installation of a hydro power plant. Hence, this condition is N/A.

Applicability as per “Tool 07: Tool to calculate the emission factor for an electricity system, version 07.0”

No.	Applicability Conditions	The Project
1	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g., demand-side energy efficiency projects).	This condition is applicable. OM, BM and CM are calculated using the tool under section B.6 for calculating baseline emissions.
2	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	CO_2 emission factor for the displacement of electricity generated by power plants in an electricity system is determined by calculating the “combined margin” emission factor (CM) of the electricity system.
3	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	The project is not located partially or totally in an Annex I country, as Azerbaijan

		is not an Annex I country.
4	Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	The project does not involve biofuels in any way.

Applicability as per "Tool 01: Tool for the demonstration and assessment of additionality, version 07.0.0"[18]

No.	Applicability Conditions	The Project
1	The use of the "Tool for the demonstration and assessment of additionality" is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.	Tool for the demonstration and assessment of additionality is applied in this project since there are no new methodologies proposed. Hence, this condition is N/A.
2	Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.	The additionality tool is applied using this methodology.

Applicability as per "Tool 03: Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 03.0"[19]

No.	Applicability Conditions	The Project
1	This tool provides procedures to calculate project and/or leakage CO2 emissions from the combustion of fossil fuels. It can be used in cases where CO2	CO2 emissions from fossil fuel combustion are calculated based

[18] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[19] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf/history_view

	emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties. Methodologies using this tool should specify to which combustion process j this tool is being applied.	on the quantity of fuel combusted and its properties for this project. Hence, this tool is applicable to this project as project emissions of the project is calculated using this tool.

Applicability as per “Tool 21: Demonstration of additionality of small-scale project activities, version 13.1”

No.	Applicability Conditions	The Project
1	The use of the methodological tool “Demonstration of additionality of small-scale project activities” is not mandatory for project owners when proposing new methodologies. Project participants and coordinating/managing entities may propose alternative methods to demonstrate additionality for consideration by the Executive Board.	No new methodologies are proposed. Additionality is demonstrated by using Tool 27: Investment analysis, version 14.0.
2	Project participants and coordinating/managing entities may also apply “TOOL19: Demonstration of additionality of microscale project activities” as applicable.	This project is a small-scale project, not a microscale project. Therefore, Tool 19 is no applied. Tool 21 is applied.

Applicability as per “Tool 27: Investment Analysis, version 14.0”

No.	Applicability Conditions	The Project

1	This methodological tool is applicable to CDM project activities and programmes of activities (PoAs) that conduct an investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.	This project activity applies the methodological tool "Tool for the demonstration and assessment of additionality". Hence, this condition is met.
2	In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.	Requirements in the methodology will be considered if the approaches for the investment analysis are different from this methodological tool.

Applicability as per "Tool 20: Assessment of debundling for small-scale project activities", version 04.1

No.	**Applicability Conditions**	**The Project**
1	This methodological tool is applicable to proposed small-scale project activities and small-scale CPAs in order to check whether they are debundled components of large-scale project activities.	The project is a small-scale project activity. Tool 20 Version 4.0 is used to demonstrate that the project activity is not involved in debundled components of a large-scale project activities. Hence, this tool is applicable.

The project activity is not a debundled component of a larger project activity as explained below.

As per para 9 of TOOL 20 Assessment of debundling for small-scale project activities,

A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

(a) With the same project owners;
(b) In the same project category and technology/measure; and
(c) Registered within the previous 2 years; and
(d) Whose project boundary is within 1 km of the project boundary of the proposed small- scale activity at the closest point.

(a) The project owners of Mirik and Garigishlag are the same.
(b) The projects are in the same project category and technology/measure.
(c) The projects are not registered within the previous 2 years.
(d) Explanation has been provided below.

	Determining the occurrence of debundling	
10	If a proposed small-scale project activity is deemed to be a debundled component in accordance with paragraph 2 above, but total size of such an activity combined with the previous registered small-scale CDM project activity does not exceed the limits for smallscale CDM project activities as set in paragraph 6 (c) of the decision 17/CP.7,1 the project activity can qualify to use simplified modalities and procedures for small-scale CDM project activities.	No proposed small-scale project activity is a debundled component, therefore, small-scale CDM project activity limits are not exceeded in any way.
	Type I project activities	
11	In cases where a DOE has, in assessing the possibility that a small scale project is a debundled component of a large scale project activity, determined that two or more project activities are taking place within one kilometer of each other and with the same project owners:	-

	(a) The DOE shall ensure that these projects are described in the PDD and that the validation report contains specific details on how it has been determined that the project activities are not a debundled component of a large scale project activity; (b) The DOE shall consider the project activities to be a debundled component of a large scale project activity even in cases where they are taking place in different project categories, if the project activities are Type 1 project activities providing energy to the same user and are registered, or submitted for registration, with 2 years of each other.	
	Transport project activities	
12	A proposed small-scale transport sector project activity involving boundaries/sources that are mobile, shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity: (a) With the same project owners; and (b) In the same project category and technology/measure; and (c) Registered within the previous 2 years.	The project is not in the transport sector. Therefore, para 12 and 13 are not applicable to the projects in the bundle and the bundle itself.
13	The above provision excludes the condition to check that the project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point and is also applicable to the guidance for determining the occurrence of debundling under a programme of activities (PoA).	
	Determining the occurrence of debundling for multiple CDM projects involving independent subsystem / measures	

14	If each of the independent subsystems/measures (e.g., biogas digesters, residential solar energy systems, kerosene or incandescent lighting replacements) included in one or more CDM project activities is no greater than 1% of the small scale thresholds defined by the applied methodology and the subsystems/measures are indicated in the PDDs to be each implemented at or in multiple locations (e.g., installed at or in multiple homes) then these CDM project activities are exempted from performing a de-bundling check, i.e., considered as being not a de-bundled component of a large scale activity.	The project does not involve independent subsystem/measures. Therefore, para 14 are not applicable to the projects in the bundle and the bundle itself.
	Determining the occurrence of debundling under a programme of activities (PoA)	
15	For the purposes of registration of a Programme of Activities (PoA), a proposed smallscale CPA of a PoA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity, which satisfies both conditions (a) and (b) below: (a) Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same technology/measure, and; (a) (b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.	There are no PoAs that have the same activity implementer as the proposed small scale CPA or have a coordinating or managing entity, which also manages a large scale PoA of the same technology/measure and the boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.
16	If a proposed small-scale CPA of a PoA is deemed to be a debundled component in accordance with paragraph 2 above, but the total size of such a CPA	The proposed small-scale CPA of a PoA is not deemed to be a

	combined with a registered small-scale CPA of a PoA or a registered CDM project activity does not exceed the limits for small-scale CDM and small-scale A/R project activities as set out in Annex II of the decision 4/CMP.14 and 5/CMP.1 respectively, the CPA of a PoA can qualify to use simplified modalities and procedures for small-scale CDM and small-scale A/R CDM project activities.	debundled component.
17	If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity.	The proposed project is not a de-bundled component of a large scale activity.

Further explanation for para 9 clause (d) of TOOL 20 Assessment of debundling for small-scale project activities.

Mirik

There is no hydro power plant whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.

There is no other registered small-scale CDM project activity or an application to register another small-scale CDM project activity by any of the project owners, whose project boundary is within 1 km of the project boundary of the proposed small- scale activity at the closest point.

Garigishlag

There are no power plants whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.
There is no other registered small-scale CDM project activity or an application to register another small-scale CDM project activity by any of the project owners, whose project boundary is within 1 km of the project boundary of the proposed small- scale activity at the closest point.

B.3. Project boundary

The project boundary is considered as the National Electricity Grid of Azerbaijan according to applied tool. The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the power plant is connected to.

Figure 5 - Flow diagram of the project boundary

The project does not involve any emissions sources not foreseen by the methodologies. The greenhouse gases and emission sources included in or excluded from the project boundary are shown in table below:

Source		GHGs	Included?	Justification / Explanation
Baseline scenario	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to project activity.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source. Excluded for simplification
		N_2O	No	Minor emission source. Excluded for simplification
Project scenario	For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam.	CO_2	No	Not Applicable. Project is not a geothermal power plant.
		CH_4	No	Not Applicable. Project is not a geothermal power plant.
		N_2O	No	Not Applicable. Project is not a geothermal power plant.
	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants.	CO_2	No	Not Applicable. Project is a hydro power plant.
		CH_4	No	Not Applicable. Project is a hydro power plant.
		N_2O	No	Not Applicable. Project is a hydro power plant.
		CO_2	No	Minor emission source. Excluded for simplification.

	For hydro power plants, emissions of CH_4 from the reservoir.	CH_4	No	Minor emission source. Excluded for simplification.
		N_2O	No	Minor emission source. Excluded for simplification
	Emissions from charging of a BESS using power from the grid or from fossil fuel electricity generators.	CO_2	No	Not Applicable. Project is a hydro power plant.
		CH_4	No	Not Applicable. Project is a hydro power plant.
		N_2O	No	Not Applicable. Project is a hydro power plant.

B.4. Establishment and description of baseline scenario

This project follows an approved small-scale UNFCCC methodology which is AMS-I.D.: Grid connected renewable electricity generation, Version 18.0. Selected methodology has been applied together with the "Tool to calculate the emission factor for an electricity system, Version 7".

According to the methodology baseline scenario has been identified as "the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources"[20], AMS-I.D ver 18.0, section 5.2 paragraph 19.

Azerbaijani electricity generation is mainly composed of thermal power plants and the share of renewable resources are still very low[21]. Since Azerbaijan is a developing country, there is an increasing demand for electricity which is fully expected to continue in the foreseeable future.

The trend to date in Azerbaijan and given the historically slow development of alternative energy sources, is to build an increasing number of thermal power plants in the future to meet the annual demand in energy consumption. Azerbaijan as a

[20] https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK, section 5.2, paragraph 19.
[21] https://www.stat.gov.az/source/balance_fuel/en/005_4en.xls

developing nation has looked at dealing with energy security by developing and constructing high-capacity coal and natural gas power plants. The development of thermal power plants has been encouraged by the large natural resource availability in Azerbaijan. The country's energy mix is heavily concentrated in fossil fuels, with oil and gas accounting for more than 98% of total supply. Heavy reliance on fossil fuels elevates GHG emissions[22].

In the absence of the proposed project activity, the same amount of electricity is required to be supplied via either the current power plants or by increasing the number of thermal power plants thus increasing GHG emissions.

Most relevant national and/or sectoral policies, regulations and circumstances taken into account:

- Law of the Azerbaijan Republic dated June 8, 1999 No. 678-IQ "on protection of environment"[23]
- Law of the Azerbaijan Republic dated December 28, 1999 No. 784-IQ "on power and thermal plants"[24]
- Law of the Azerbaijan Republic dated June 12, 2018 No. 1175-VQ "on environmental impact assessment"[25]
- Law of the Azerbaijan Republic dated April 11, 2023 No. 858-VIQ "on power industry"[26]

The project is estimated to reduce CO_2 emissions by 8,311 tonnes, annually.

B.5. Demonstration of additionality

This project follows an approved small-scale UNFCCC methodology which is AMS-I.D Small-scale Methodology: Grid-connected renewable electricity generation, Version 18.0. Selected methodology has been applied together with the "Tool to calculate the

[22] https://www.iea.org/reports/azerbaijan-energy-profile/energy-security
[23] https://policy.asiapacificenergy.org/node/364
[24] https://minenergy.gov.az/en/qanunlar/page/3
http://www.e-qanun.az/framework/501
[25] https://www.fao.org/faolex/results/details/en/c/LEX-FAOC199325/
[26] https://minenergy.gov.az/en/prezidentin-ferman-ve-serencamlari
https://e-qanun.az/framework/54210

emission factor for an electricity system, Version 07.0" and "Demonstration of additionality of small-scale project activities, Version 13.1". These are the latest version of the methodology and related additionality & calculation tool.

According to TOOL 21: Demonstration of additionality of small-scale project activities (Version 13.1), Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

(a) Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;
(b) Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;
(c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;
(d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

It is demonstrated that the project activity would not have occurred due to the investment barrier in this section. Investment analysis is applied according to TOOL01 Tool for the demonstration and assessment of additionality (Version 7.0.0)[27] and TOOL27 Investment analysis (Version 14.0)[28].

According to tool for demonstration and additionality the steps listed below are followed in detail;

[27] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[28] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v14.0.pdf

Step 0 - Demonstration whether the proposed project activity is the first-of its-kind

This step is optional. If it is not applied it shall be considered that the proposed project activity is not the first-of-its-kind. Therefore, this step is not applied.

Step 1 - Identification of alternatives to the project activity consistent with current laws and regulations

***Sub-step 1a* - Define alternatives to the project activity:**

The most realistic and reliable alternatives to the project activity are:

1. Proposed project is not undertaken as a VER project activity
2. Electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources

The first alternative, which is the implementation of the project without carbon revenue, is not financially attractive as discussed in the investment analysis section below. The second alternative (Scenario 2) is the baseline scenario and implementation of the proposed project as an VER activity would be additional to this scenario. Considering the second alternative, the project is also additional since the project provides energy to the grid that would otherwise be supplied by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in TOOL07. Moreover, the electricity demand of Azerbaijan is increasing. As a result of the increasing electricity demand, new power plants should be constructed which includes mainly thermal power plants. Implementation of the project is additional to the baseline scenario which is alternative 2 above and therefore reduces the emissions.

Outcome of Step 1a

Electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources is defined as the baseline scenario. Continuation of the current

situation is not considered as a realistic alternative due to increasing electricity demand. As a result of the increasing electricity demand, new power plants should be constructed which includes mainly thermal power plants. Implementation of the project is additional to the baseline scenario which is an alternative 2 above and therefore reduces the emissions.

Sub-step 1b. Consistency with mandatory laws and regulation

The following applicable mandatory laws and regulations have been identified:

1. Forest Code of the Azerbaijan Republic dated December 30, 1997 No. 424-IQ[29]
2. Water Code of the Azerbaijan Republic dated December 26, 1997 No. 418-IQ[30]
3. Land Code of the Azerbaijan Republic dated June 25, 1999 No. 695-IQ[31]
4. Law of the Azerbaijan Republic dated June 8, 1999 No. 678-IQ "on protection of environment"[32]
5. Law of the Azerbaijan Republic dated December 28, 1999 No. 784-IQ "on power and thermal plants"[33]
6. Presidential decree of the Azerbaijan Republic dated February 1, 2013 No. 810 "on additional measures in the field of alternative and renewable energy"[34]
7. Law of the Azerbaijan Republic dated June 12, 2018 No. 1175-VQ "on environmental impact assessment"[35]
8. Law of the Azerbaijan Republic dated July 9, 2021 No. 359-VQD "on effective use of energy resources and energy efficiency"[36]
9. Law of the Azerbaijan Republic dated April 11, 2023 No. 858-VIQ "on power industry"[37]
10. Law of the Azerbaijan Republic dated April 11, 2023 No. 858-VIQ "on power industry"

[29] https://e-qanun.az/framework/46941#_edn1
[30] https://e-qanun.az/framework/4599
[31] https://e-qanun.az/framework/46942
[32] https://e-qanun.az/framework/3852
[33] https://e-qanun.az/framework/501
[34] https://e-qanun.az/framework/28553
[35] https://e-qanun.az/framework/39511
[36] https://e-qanun.az/framework/34208
[37] https://e-qanun.az/framework/54209

The resultant alternatives to the project as outlined in Step (1a) are in compliance with the applicable laws and regulations.

Outcome of Step 1b

Mandatory legislation and regulations for each alternative are taken into account in sub-step 1b. Based on the above analysis, the proposed project activity is not the only alternative amongst the project owners that is in compliance with mandatory regulations. Therefore, the proposed VER project activity is considered as additional.

Step 2 - Investment analysis

The investment analysis has been done in order to make an economic and financial evaluation of the project.

Investment decision date has been determined to be the date of Construction Agreement, 25/04/2023, and the period of assessment including IRR and equity IRR calculations have been chosen accordingly.

***Sub-step 2a* - Determine appropriate analysis method**

There are three options for the determination of analysis method which are:

- Simple Cost Analysis
- Investment Comparison Analysis and
- Benchmark Analysis

Since Project generates economic benefits from sales of electricity, the simple cost analysis is not applicable. Also, since the baseline of the project is generation of electricity by the grid, no alternative investment is considered at issue. So, it has been decided to use benchmark analysis for evaluation of the project investment.

Sub-step 2b: Option III. Apply benchmark analysis

For benchmark analysis, “Default values for the cost of equity (expected return on equity)” provided in Tool 27 has been used. This project is categorized in Group 1

(Energy Industries) projects mentioned in paragraph 5 of the Tool. As para 9 of the tool "*The weighted average costs of capital (WACC) and the cost of equity provided in the Appendix or calculated using Capital Asset Pricing Model (CAPM) are post-tax IRR benchmarks, and investment analysis shall be conducted with post-tax cash flows.*".

Therefore, the post-tax equity IRR benchmark for this project is 9.60%.

Sub-step 2c. Calculation and comparison of financial indicators

Table 7 - Main Financial Parameters Used for Investment Analysis

Particulars	Input Values	Source
Total Project Cost (1000 AZN)	11,599	Construction agreement Mirik and construction agreement Garigishlag
Mirik Total Project Cost (1000 AZN)	4,579	Construction agreement of Mirik
Garigishlag Total Project Cost (1000 AZN)	7,020	Construction agreement of Garigishlag
Equity (1000 AZN)	11,599	Construction agreements of Mirik and Garigishlag
Bank Loans	0	Loan was not used and considered
Equity Ratio	100%	Investment made by 100% equity
Depreciation Hydro Turbine (Hours)	150,000	CDM Tool 10: Tool to determine the remaining lifetime of equipment, v01 https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf
Annual Operating Hours	2,880	Calculated (Estimated EG / Operation hours)
Yearly Operating Costs (1000 AZN/year)	270	Calculated in "Operational" tab
Installed Power (MW)	7.1	Generator characteristics
Interest Rate On Loans	0%	Loan was not used and considered
Carbon Credits ($/ton)	0	No revenue from ACCs is considered.
Equipment Lifetime (Years)	52	Calculated using operational hours and Tool 10.
Residual Value (1000 AZN)	10,865	Calculated by subtracting depreciated amount from the total cost
Transmission Loss Factor	1.5%	Azerbaijan Energy Policy Review by IEA https://iea.blob.core.windows.net/assets/49662c46-575f-4561-a541-5541f5342b07/Azerbaijan2021EnergyPolicyReview.pdf
Exchange Ratio (AZN/EUR)	1.8786	The Central Bank of the Republic of Azerbaijan

		Rate on 25/04/2023 https://www.cbar.az/currency/custom
Exchange Ratio (AZN/USD)	1.7000	The Central Bank of the Republic of Azerbaijan Rate on 25/04/2023 https://www.cbar.az/currency/custom
Exchange Ratio (USD/EUR)	1.11	Rate on 25/04/2023
Contribution Fee	0	No contribution fee is available.
Total Equity Investment (1000 AZN)	11,599	Construction agreements of Mirik and Garigishlag
Corporate Tax (%)	20.0%	Worldwide Tax Summaries https://taxsummaries.pwc.com/azerbaijan/corporate/taxes-on-corporate-income Azerbaijan Corporate Tax Rate https://tradingeconomics.com/azerbaijan/corporate-tax-rate#:~:text=The%20Corporate%20Tax%20Rate%20in,of%20the%20Republic%20of%20Azerbaijan
Average Sales Price (qapik/kWh)	5.00	Azerbaijan Energy Regulatory Agency https://regulator.gov.az/en/elektrik/elektrik-enerjisinin-olkedaxili-tarifleri
Electricity Generation (GWh/Year)	20.448	EG calculations for each power plant.

Investment costs are identified from the Construction Agreements. The installed capacity of the hydro power plant is 7.1 MW. For the estimation of the operational cost, maintenance and staff costs were considered. Maintenance cost was considered as 20 USD/kW/year[38], which is the minimum estimated cost in the report. The labour cost was calculated by considering the cost of the minimum wage to the employer announced in the latest period and the number of employees[39]. Electricity tariff has been used as 5 qapik/kWh. Annual generation has been taken as 20,448 MWh.

IRR is calculated for 10 years (1 year construction + 10 years operation period). 10 years have been chosen and fair value (residual value) has been included at the end of the analysis period, in compliance with the Tool 27.

[38] Page 129 https://www.irena.org/publications/2021/Jun/Renewable-Power-Costs-in-2020
[39] https://tradingeconomics.com/azerbaijan/minimum-wages#:~:text=Minimum%20Wages%20in%20Azerbaijan%20increased,of%20the%20Republic%20of%20Azerbaijan

The depreciation for equipment was considered as 150,000 hours according to the Methodological Tool "Tool to determine the remaining lifetime of equipment"[40]. Corporate tax percentage was taken as 20% since post-tax equity IRR is calculated. No bank loan was used. Transmission loss value is taken as 1.5%. Please see the investment analysis Excel Spreadsheet for detailed explanations of the input values for the analysis.

Internal Rate of Return (IRR) of the SOCAR-3 Hydro Bundle (in real terms) has been calculated as 4.70% based on the parameters given above without considering the carbon revenue.

Milestone	Date
Investment Decision Date (Construction Agreements)[41]	25/04/2023
EIA Report of Mirik	26/12/2023
EIA Report of Garigishlag	30/11/2023
Land Permit of Mirik	15/12/2023
Land Permit of Garigishlag	25/12/2023
Calibration of Meters	27/03/2024
Commissioning of Mirik and Garigishlag	27/03/2024
Date of Listing on Gold Standard Registry	15/05/2024

Sub-step 2d - Sensitivity Analysis

Sensitivity analysis was carried out for four main parameters identified for the project, which are given below:

- Investment Cost
- Operating Cost
- Electricity Price
- Electricity Generation

[40] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf
[41] Project Start Date

For a range of ± 10% fluctuations in parameters above, table below has been obtained:

Table 8 - Sensitivity analysis (without carbon revenue)

Fluctuation	-10	0	+10
Investment Cost	5.28%	4.70%	4.22%
Operating Cost	4.89%	4.70%	4.51%
Electricity Income	3.99%	4.70%	5.41%
Electricity Generation	4.03%	4.70%	5.37%

Outcome of Step 2:

The investment and sensitivity analysis shows that the VER revenues will improve the financial indicators of the Project remarkably. Considering that figures above are based on a higher price rather than the government guaranteed floor price, optimistic estimations for yearly generation and that those figures do not reflect the risk for investment, role of carbon income is a most significant number to enable the project to proceed.

Breaching values are presented in the table below.

Sensitivity Analysis (in case equity IRR crosses the benchmark 9.60%)		
Parameter	**Fluctuation (%)**	**Value**
Investment Cost (1000 AZN)	-49	5,916
Operating Cost (1000 AZN)	NA	No breach even when 0.
Electricity Price (qapik/kWh)	69	8.45
Electricity Generation (GWh/year)	72	35.171

One of the important parameters affecting equity IRR is the investment cost. For the IRR calculation, actual investment capital costs using the contracted values were used. In fact, actual values excluding VAT were used, which makes the approach even more conservative. There is no chance of expecting a decrease in the investment cost since the investment was done. A decrease by 49% in the investment cost would cause breach of the benchmark, which is not possible.

As can be seen in the table above, fluctuation of 10% in electricity price and generation does not result in equity IRR to cross the benchmark. Electricity price is fixed at 5.6 qapik/kWh in the actual case. An increase by 69% in the electricity selling tariff would cause breach of the benchmark, which is not likely. An increase by 72% in the annual electricity generation would cause breach of the benchmark, which is not likely considering the capacity of the power plants.

Operating costs can also affect the equity IRR however, its impact is not significant and does not cause significant change in equity IRR and the fluctuation percentage to reach the benchmark is very high and not likely. When the operation costs are decreased to AZN 0 (zero), higher IRR is reached. Since the operational costs increase with time (due to depreciation of the equipment and increasing operational and maintenance costs provided by the companies), a situation that benchmark is breached is not likely at all.

To summarize, an important parameter affecting equity IRR is investment cost. There is no chance of expecting a decrease in the investment cost thereafter. Operating costs can also affect the equity IRR. However, its impact is not significant and does not cause any significant change in equity IRR and the fluctuation percentage to reach the benchmark is very high and not likely. As seen in the sensitivity analysis carried out for electricity price, the equity IRR remains below the benchmark.

Since the investment has been completed and the HPPs have been operational for some time, actual figures were evaluated. In the IRR calculation, actual investment cost of HPPs were used, taken directly from the signed contracts. Therefore, no decrease in this cost is possible. It is not possible for benchmark to be breached by a decrease in capital cost.

Actual OPEX has been around 140,000 AZN/year, considering the average cost in 3 month (June, July, August) in year 2024. This value is 48% lower than estimated during the time of investment decision. However, as demonstrated in the paragraph above, even when the O&M costs are considered as 0 AZN/year, the benchmark is not breached and reaches a highest value of 6.61% only.

The tariff was estimated to be 5 qapik/kWh, but the actual tariff is 5.6 qapik/kWh. This consitututes a difference of 12%, i.e. the actual tariff was 12% higher than estimated.

As demonstrated above, tariff must surpass 8.45 qapik/year (69% higher than estimated tariff, 51% higher than actual tariff) for benchmark to be breached. Therefore, it is not possible.

Electricity generation was estimated to be 20,448 MWh/year but the actual generation was 7,862 MWh between March 2024 and September 2024 (7 months) since commissioning, which would correspond to an annual generation of 13,478 MWh/year. This higher generation would not cause breach of benchmark as the generation must surpass 35,171 MWh/year for benchmark to be breached. Therefore, breaching due to higher generation is not likely at all.

Based on the above information, it is seen that project is not the most attractive option. Therefore, the project is considered as additional to the baseline scenario.

B.5.1 Prior Consideration

The start date of the project is 25/04/2023 and the plant has not been commissioned yet. Thus, no prior consideration is needed.

B.5.2 Ongoing Financial Need

N/A

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

		SDG IMPACT
SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	**INDICATOR (PROPOSED OR SDG INDICATOR)**
13 Climate Action (mandatory)	13.2: “Integrate climate change measures into national policies, strategies and planning”	13.2.1 Reduction in GHGs emissions (8,311 tCO_2e per year)

7 Affordable and Clean Energy	7.2: “By 2030, increase substantially the share of renewable energy in the global energy mix.”	7.2.1 Renewable energy generation (20,448 MWh per year)
8 Decent Work and Economic Growth	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”	8.5.1 Increased employment opportunities (8 people)

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

SDG 7

Net generation (MWh) = Electricity supplied to grid – Electricity withdrawn from the grid

SDG 8

Long-term job opportunities are created. Training is provided to staff.

SDG 13

Ex-ante emission reduction (ER_y (tCO_2)) is calculated as follows:

$ER_y = BE_y – PE_y - LE_y$

Where:

ER_y = Emission reductions in year y (tCO_2)

BE_y = Baseline emissions in year y (tCO_2)

PE_y = Project Emissions in year y (tCO_2)

LE_y = Leakage emissions in year y (tCO_2)

Baseline emissions

Baseline emission is calculated according to the formula:

$BE_y = EG_{PJ,y} \times EF_{grid,y}$

Where:

$EG_{PJ,y}$ = Net electricity delivered to the grid by the project activity in year y excluding transmission losses of the grid

$EF_{grid,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Emission Factor

The Emission Factor has been calculated in a conservative manner as requested by the methodology. According to the "Tool to calculate the emission factor for an electricity system", ver. 7, the following four methods are applicable to calculate the operating margin:

a) Simple OM,
b) Simple adjusted OM,
c) Dispatch Data Analysis OM and
d) Average OM.

Since the share of low-cost / must-run sources are below 50%, method (d) is eliminated. Also due to insufficient data available, methods (b) and (c) are not considered and thus (a) simple OM method is used in calculations. As fuel consumption and average efficiency data for each power plant / unit are not available, Option B is used for simple OM calculation. Details have been provided in Section B.6.3.

The emission factor will remain the same over the crediting period.

Project emissions

There is a back-up diesel generator set on-site, for emergency use only. CO2 emissions from fossil fuel combustion in process j are calculated based on the quantity of fuels combusted and the CO_2 emission coefficient of those fuels, in line with TOOL 03 Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion, V03.0, as follows:

$$PEFC,j,y = \Sigma FCi,j,y \times COEFi,yi$$ Equation (1) of TOOL 03

Where:

$PEFC,j,y$ = Are the CO_2 emissions from fossil fuel combustion in process *j* during the year *y* (tCO_2/yr)

FCi,j,y = Is the quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr)

$COEFi,y$ = Is the CO_2 emission coefficient of fuel type i in year y (tCO_2/mass or volume unit)

i = Are the fuel types combusted in process j during the year y

Option B: The CO_2 emission coefficient $COEFi,y$ is calculated based on net calorific value and CO_2 emission factor of the fuel type *i*, as follows:

$$COEFi,y = NCVi,y \times EFCO_2,i,y$$ Equation (4) of TOOL 03

Where:

$COEFi,y$ Is the CO_2 emission coefficient of fuel type *i* in year *y* (tCO_2/mass or volume unit)

$NCVi,y$ Is the weighted average net calorific value of the fuel type *i* in year *y* (GJ/mass or volume unit)

$EFCO_2,i,y$ Is the weighted average CO_2 emission factor of fuel type *i* in year *y* (tCO_2/GJ)

i = Are the fuel types combusted in process *j* during the year *y*

Values from the literature[42]:

$\rho_{i,y}$ = diesel density = 0.85 kg/l

Net Calorific Values ($NCVi,y$) = 43.3 TJ/Gg (0.0433 Gj/kg)

CO_2 emission factor of diesel ($EFCO2,i,y$) = 74,800 kg CO2/Tj (0.0748 tCO_2/GJ)

[42] https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/

$COEFi,y$=0.0433 Gj/kg x 74.8 kgCO_2/Gj = 3.239 kg CO_2e/kg diesel (3.239 tCO_2e/ton diesel)

$PE_{FC,j,y}$ to be calculated by multiplying this emission factor ($COEFi,y$) with the consumed amount of diesel during verification. i.e. If 1000 liters of diesel is consumed in year y, the project emissions due to the diesel consumption would be calculated as follows:

$PE_{FC,j,y}$ = (1000 L) x (0.85 kg/L) x (1 ton/1000 kg) x (3.239 tCO_2e/ton diesel) = 2.75 tCO_2e

Therefore, PEy = $PE_{FC,j,y}$

Leakage

The energy generating equipment is not transferred from or to another activity. Therefore, leakage is also considered as “0”.

LE_y = 0

As a result, Total Emission Reduction is:

ER_y = BE_y – PE_y

B.6.2 Data and parameters fixed ex ante

Data/parameter	$EF_{grid,y}$
Unit	tCO_2e/MWh
Description	CO_2 emission factor of the grid electricity in year y
Source of data	Calculated in line with TOOL 07 Tool to calculate the emission factor for an electricity system, v07.0 https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.pdf/history_view
Value(s) applied	0.4066 tCO_2e/MWh

Choice of data or Measurement methods and procedures	'TOOL 07 Tool to calculate the emission factor for an electricity system, v07.0 has been used to calculate the emission factor for the project. Option I has been selected to only include grid-connected power plants. Ex-ante approach is selected. OM has been calculated as 0.4497 tCO_2/MWh and BM has been calculated as 0.3634 tCO_2/MWh. Details of the calculations are provided under Section B.6.3 of this PDD.
Purpose of data	To calculate baseline emissions
Additional comment	-

Data/parameter	**$FC_{i,y}$**
Unit	tons or 1000 m^3 for gases
Description	Amount of fuel type i consumed by power plant/unit m, k or n (or in the project electricity system in case of $FC_{i,y}$) in year y or hour h
Source of data	AzerStat web page https://www.stat.gov.az/source/balance_fuel/?lang=en Commodity balances – Natural Gas[43] Commodity balances – Electricity[44]
Value(s) applied	See table below
Choice of data or Measurement methods and procedures	Data is used for OM and BM calculations.
Purpose of data	To calculate baseline emission

Natural Gas	**$FC_{i,y}$ [(Million m^3)]**			
	2020	**2021**	**2022**	**Total**
Electricity Generation Plants	3,894.9	4,380.8	4,789.3	13,065.0
CHP Plants	1,986.5	1,717.9	1,555.6	5,260.0
Total	5,881.4	6,098.7	6,344.9	18,325.0

[43] https://www.stat.gov.az/source/balance_fuel/en/003_1.16en.xls
[44] https://www.stat.gov.az/source/balance_fuel/en/003_1.19en.xls

Additional comment	-

Data/parameter	$NCV_{i,y}$
Unit	GJ/mass or volume unit
Description	Net calorific value (energy content) of fuel type i in year y
Source of data	TOOL07 Tool to calculate the emission factor for an electricity system, v07.0
Value(s) applied	**Fossil Fuel Type** / **NCV (GJ/unit)**: Natural Gas 0.035; Fuel Oil 38.937; Gas Oil 43.543; Coal 22.609
Choice of data or Measurement methods and procedures	Data is used for OM and BM calculations.
Purpose of data	To calculate baseline emission
Additional comment	-

Data/parameter	**EG_y**
Unit	MWh
Description	Net electricity generated by power plant/unit m, k or n (or in the project electricity system in case of EG_y) in year y or hour h
Source of data	AzerStat web page https://www.stat.gov.az/source/balance_fuel/?lang=en Commodity balances – Electricity[45]

[45] https://www.stat.gov.az/source/balance_fuel/en/003_1.19en.xls

Value(s) applied	<table><tr><th>Year</th><th>Electricity Generation Plants</th><th>CHP Plants</th><th>Total Supply to the Grid by Electricity generation + CHP plants (GWh)</th></tr><tr><td>2020</td><td>17,899.4</td><td>6,526.5</td><td>24,425.9</td></tr><tr><td>2021</td><td>20,211.9</td><td>6,058.8</td><td>26,270.7</td></tr><tr><td>2022</td><td>22,185.9</td><td>4,909.2</td><td>27,094.6</td></tr></table>
Choice of data or Measurement methods and procedures	Data is used for OM and BM calculations.
Purpose of data	To calculate baseline emission
Additional comment	-

Data/parameter	$EF_{CO2,i,y}$
Unit	tCO_2/GJ
Description	CO_2 emission factor of fuel type i used in power unit m in year y
Source of data	TOOL07: Tool to calculate the emission factor for an electricity system , v07.0[46]
Value(s) applied	<table><tr><th>Fuel Type</th><th>$EF_{CO2,i,y}$ (tCO_2/GJ)</th></tr><tr><td>Natural Gas</td><td>0.0555</td></tr><tr><td>Fuel Oil</td><td>0.0821</td></tr><tr><td>Gas Oil</td><td>0.0729</td></tr><tr><td>Coal</td><td>0.1240</td></tr></table>
Choice of data or Measurement methods and procedures	Data is used for OM and BM calculations.
Purpose of data	To calculate baseline emission

[46] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.pdf/history_view

Additional comment	-

Data/parameter	$\rho_{i,y}$
Unit	Mass unit/volume unit (kg/L)
Description	Weighted average density of fuel type i in year y
Source of data	Speight, J. G. (2011). Production, properties and environmental impact of hydrocarbon fuel conversion. In M. R. Khan (Ed.), Advances in clean hydrocarbon fuel processing: Science and technology (pp. 25–60). Woodhead Publishing.
Value(s) applied	0.85 kg/L
Choice of data or Measurement methods and procedures	Values provided by the fuel supplier in invoices and measurements by the project participants are not available. Therefore, a fixed value is used.
Purpose of data	To calculate project emissions
Additional comment	-

Data/parameter	$NCV_{i,y}$
Unit	GJ per mass or volume unit (GJ/ton)
Description	Weighted average net calorific value of fuel type i in year y
Source of data	IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of

	Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories[47]
Value(s) applied	43.3 TJ/Gg (= 43.3 GJ/ton)
Choice of data or Measurement methods and procedures	This parameter will be the same for the whole crediting period. IPCC default value at the upper limit of the uncertainty at a 95% confidence interval was used.
Purpose of data	To calculate project emissions
Additional comment	-

Data/parameter	$EF_{CO2,i,y}$
Unit	tCO_2/GJ
Description	Weighted average CO2 emission factor of fuel type i in year y
Source of data	IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories[48]
Value(s) applied	74,800 kg CO_2/TJ (=0.0748 tCO_2/GJ)
Choice of data or Measurement methods and procedures	This parameter will be the same for the whole crediting period. IPCC default value at the upper limit of the uncertainty at a 95% confidence interval was used.
Purpose of data	To calculate project emissions
Additional comment	-

[47] Table 1.2 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
[48] Table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

B.6.3 Ex ante estimation of SDG Impact

Calculation of the grid emission factor for Azerbaijan national grid has been carried out using the calculation table published in the webpage of the Tool 07: "Tool to calculate the emission factor for an electricity system", Version 07.0[49], ("Table to calculate the emission factor for an electricity system" (version 04.0)[50]) and the steps defined in the tool as below.

Step 1. Identify the relevant electricity systems

According to the ''Tool to calculate the emission factor for an electricity system'', Version 07, a project electricity system and connected electricity system has to be identified.

Tool applied defines three options for delineation of project electricity system. However, there is no published a delineation of the project electricity system by the Azerbaijan DNA or dispatch center of Azerbaijan., therefore project participants defined the project electricity system and connected electricity system on the basis of information available as recommended by the tool para 21 and 22.

Tool defines the project electricity system as "is defined by the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity". Therefore, we have included all grid connected power plants in our calculations as published by State Statistics Committee of the Republic of Azerbaijan[51].

Total installed capacity of the grid connected power plants have been determined as 7,976.9 MW by end of 2022 as per the available statistics.

[49] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf/history_view
[50] https://cdm.unfccc.int/methodologies/PAmethodologies/table_am_tool_07.zip

[51] https://www.stat.gov.az/source/balance_fuel/en/005_3en.xls

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional)

Option I has been chosen by the project developer hence only grid power plants are included in calculations.

Step 3. Select a method to determine the operating margin (OM)

Average share of low cost must run (LCMR) plants are calculated as 6.7% in last five years as per the date by Azer Stat data[52]

Years	Production of electricity	including:								LCMR Sources
		electricity and CHP plants working with fuel	hydroelectric power station	avtoproducers (working with fuel)	by generator	wind power station	solar power station	electricity generated from wastes incineration	electricity generated from biomass incineration	
2018	25.229,2	21.242,9	1.768,0	1.934,1	0	82,7	39,3	162,2	0,0	8%
2019	26.072,9	22.289,7	1.564,8	1.872,9	0	105,4	44,2	195,9	0,0	7%
2020	25.839,1	22.471,3	1.069,5	1.954,6	0	96,1	47,0	200,6	0,0	5%
2021	27.887,8	24.308,8	1.277,3	1.961,9	0	91,4	55,2	193,2	0,0	6%
2022	29.039,8	25.137,4	1.595,7	1.957,2	0	83,3	60,9	205,3	0,0	7%

Therefore, as per the figure 2 of the applied tool, The Simple Operating Margin (OM) emission factor ($\mathbf{EF}_{grid,OM,y}$) is calculated and used as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all the generating plants serving. As electricity generation from solar and low-cost biomass facilities is insignificant and there are no nuclear plants in Azerbaijan, the only low cost /must run plants considered are hydroelectric, wind and biomass/waste facilities.

The tool gives two options for the calculation of $\mathbf{EF}_{grid,OM,y}$;

- **Ex-ante option**

[52] https://www.stat.gov.az/source/balance_fuel/en/005_4en.xls

A 3-year generation-weighted average, based on the most recent data available at the time of submission of the VER-PDD to the verifier for validation, without the requirement to monitor and recalculate the emissions factor during the crediting period, or

- **Ex-post option**

The year in which the project activity displaces grid electricity, with the requirement that the emissions factor be updated annually during monitoring.

For this project, the ex-ante approach is selected. Data for calculating the three-year average is obtained from the period 2020 – 2022, the most recent data available at the time of PDD submission.

Step 4. Calculate the operating margin emission factor according to the selected method

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost / must run plants / units. The Simple OM has been calculated using option B which is based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system. Option B has been selected since;

- Generation and CO_2 data for individual power units are not available
- Only renewable are considered as low cost/must run resources
- Off-Grid power plants are not included in calculations.

As fuel consumption and average efficiency data for each power plant / unit are not available, Option B is used for simple OM calculation. Under Option B, the simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost / must run power plants / units, and based on fuel type(s), and total fuel consumption of the project electricity system, as follows:

$$EF_{Grid,OM\ simple,y} = \sum FC_{i,y} * NCV_{i,y} * EF_{CO2,i,y} / EG_y \quad (1)$$

Where:

$EF_{grid,OM,y}$ Simple operating margin CO_2 emission factor in year "y" (tCO_2/GWh)

$FC_{i,y}$ Amount of fossil fuel type "i" consumed in the project electricity system in year "y" (mass or volume unit)

$NCV_{i,y}$ Net calorific value (energy content) of fossil fuel type "i" in year "y" (GJ / mass or volume unit)

$EF_{CO2,i,y}$ CO_2 emission factor of fossil fuel type "i" in year "y" (tCO_2/GJ)

EG_y Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must run power plants / units, in year "y" (MWh)

i All fossil fuel types combusted in power sources in the project electricity system in year "y"

y Either the 3 most recent years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex-ante option) or the applicable year during monitoring (ex post option), following the guidance on data vintage in step 2

For the calculation of the Simple OM, the amount of fuel consumption ($FC_{i,y}$) and default heating values of fuels are used as given in the calculation table of the tool. As per the latest statistics, almost all of the fossil fuel used for electricity generation is identified as "natural gas". Therefore, other fossil fuel consumptions are excluded and natural gas consumption used for electricity generation plants are given in table below:

Table 9 - Fuel Consumption in thermal power plants

	$FC_{i,y}$ [(Million m^3)]			
Natural Gas	**2020**	**2021**	**2022**	**Total**
Electricity Generation Plants	3,894.9	4,380.8	4,789.3	13,065.0
CHP Plants	1,986.5	1,717.9	1,555.6	5,260.0
Total	5,881.4	6,098.7	6,344.9	18,325.0

The NCV of the fuels consumed have been calculated using default values in the calculation table.

Net electricity generated and supplied to the grid by thermal plants has been defined in the AzerStat web page[53] as below.

Table 10 - Gross / Net electricity generation by Generation + CHP Plants in Azerbaijan Grid[54]

Year	Electricity Generation Plants	CHP Plants	Total Supply to the Grid by Electricity generation + CHP plants (GWh)
2020	*17,899.4*	6,526.5	24,425.9
2021	*20,211.9*	6,058.8	26,270.7
2022	*22,185.9*	4,909.2	27,094.6

Having calculated the total fuels emissions and net generation by thermal power plants as given in previous two tables, The $EF_{grid,OM,y}$ is calculated by simply dividing total emission by total net thermal electricity generation as defined in equation above;

2022	$EF_{grid,OM\ simple,y}$ =	**0.4263**	[tCO_2/MWh]
2021	$EF_{grid,OM\ simple,y}$ =	**0.45**	[tCO_2/MWh]
2020	$EF_{grid,OM\ simple,y}$ =	**0.4698**	[tCO_2/MWh]
AVG	$EF_{grid,OM\ simple,y}$ =	**0.4497**	[tCO_2/MWh]

$EF_{grid,OM,y}$ = 0.4497 tCO_2/MWh

Step 5. Calculate the build margin (BM) emission factor

In terms of vintage of data, project participants can choose between one of the following two options to calculate $EF_{grid,BM,y}$:

[53] https://www.stat.gov.az/source/balance_fuel/?lang=en

[54] https://www.stat.gov.az/source/balance_fuel/?lang=en

Option 1. For the first crediting period, calculate the build margin emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of PDD submission to the verifier for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the verifier. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

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

In this PDD, **Option1** is chosen to calculate the build margin emission factor. The sample group of power units m used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

(a) Identify the set of five power units, excluding power units registered as GS project activities that started to supply electricity to the grid most recently (SET5-units) and determine their annual electricity generation (AEGSET-5-units, in MWh);

Published commissioning dates of the power plants include only commissioning year. Therefore, in identifying AEGSET-5, all plants in specific years were assumed to be commissioned by end of the (i.e. 31.12.20XX. AEGSET 5 is identified in table below is less than 20% of the AEG_{total},

Table 11 - AEGSET-5 Power Plant

Power plant name	Capacity, MW	Plant type	Annual generation, kWh	Commissioning year

Gobu	385.00	Thermal Power Plant	2.054.167.700	2022
Oguz - 1	1.34	Hydro Power Plant	2.362.580	2022
Oguz - 2	1.34	Hydro Power Plant	2.254.590	2022
Oguz - 3	0.89	Hydro Power Plant	2.011.510	2022
Kalbajar - 1	4.40	Hydro Power Plant	11.629.152	2022
Sus	4.00	Hydro Power Plant	11.500.000	2022

(b) Determine the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total}, in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEG_{total} (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) (SET≥20%) and determine their annual electricity generation (AEGSET-≥20%, in MWh);

The list of the most recent capacity additions to the grid and their average and actual generation capacities are avail generation, generation's web page[55] ·For determination of plants that comprise 20% of the system's generation, generation in year 2022 which is 27,094.60 GWh has been taken as reference and its 20% has been determined as about 5,418 GWh after excluding one plant (Yeni Yashma Wind Poer Plant) which is registered as a CDM project. Since no data is available on actual commissioning date of the plants in terms of day and month, plants commissioned in a specific year were fully included in the calculations. Thus, total capacity included in BM calculation has increased to 9.677 GWh.

(c) From SET5-units and SET≥20% select the set of power units that comprises the larger annual electricity generation (SET_{sample}); Identify the date when the power units

[55] http://azenerji.com/

in SET_{sample} started to supply electricity to the grid. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then use SET_{sample} to calculate the build margin. In this case ignore steps (d), (e) and (f).

SET≥20% is selected as (SET_{sample}) because the set of power units that comprises the larger annual electricity generation. There are no power units in SET_{sample} started to supply electricity to the grid more than 10 years ago. Therefore, the steps (d), (e) and (f) are ignored.

The Build Margin emission factor EFgrid, BMs, y is calculated as the generation-weighted average emission factor of a sample of power plants "m" for a specific year, as follows:

$$EF_{Grid,BM,y} = \sum EG_{m,y} * EF_{EL,m,y} / \sum EG_{m,y} \quad (2)$$

Where:

$EF_{grid,BM,y}$ Build margin CO_2 emission factor in year "y" (tCO_2/GWh)
$EG_{m,y}$ Net quantity of electricity generated and delivered to the grid by power unit "m" in year "y" (MWh)
$EF_{EL,m,y}$ CO_2 emission factor of power unit "m" in year "y" (tCO_2/MWh)
m Power units included in the build margin
y Most recent historical year for which power generation data is available

Table 12 - Most recent capacity additions by fuel source

Unit_Name	Commissioning_date	Energy that comprises up to 20% of the system generation - $EG_{m,y}$	
		[MWh]	[%]
Sahil	31.12.2018	924	0.0%
Gobu	31.12.2022	2,054,168	7.6%
Oguz - 1	31.12.2022	915,038	11.0%
Oguz - 2	31.12.2022	214,958	
Oguz - 3	31.12.2022	2,012	11.8%
Kalbajar - 1	31.12.2022	515,519	13.7%
Sus	31.12.2022	244,989	14.6%
Gulabird	31.12.2021	22,496.00	14.7%
Suqovushan - 1&2	31.12.2021	12,877.95	14.7%
Astara	31.12.2020	181.00	14.7%

Shimal Unit - 2	31.12.2019	3,060.22	14.7%
Masalli	31.12.2019	224.00	14.7%
Lerik	31.12.2018	17,977.40	14.8%
Yashma Baglar	31.12.2018	106.10	14.8%
Balakan - 1	31.12.2017	3,052.31	14.8%
Chichakli	31.12.2017	7,863.05	14.8%
Pirallahi	31.12.2017	596.62	14.8%
Samukh	31.12.2017	1,342.03	14.8%
Goychay	31.12.2015	5,186.30	14.8%
Ismayilli - 2	31.12.2016	3,745.22	14.9%
Janub	31.12.2013	5,573,873.64	35.4%
Taxtakorpu	31.12.2013	62717,05	35.7%
Shamkirchay	31.12.2014	9,966.69	35.7%
Ismayilli - 1	31.12.2013	4,016.27	35.7%
Shaki - Unit 2	31.12.2014	203.25	35.7%
Sumgayit	31.12.2014	1,182.71	35.7%
Surakhani	31.12.2014	512.34	35.7%

Finally, by summing up the weighted EF values, overall build margin emission factor has been calculated as:

$EF_{grid,BM,y}$ = 0.3634 tCO_2/MWh

STEP 6 - Calculate the combined margin (CM) emission factor

As per the Tool, weighted average baseline emission factor is calculated as follows;

$$EF_{grid,CM,y} = w_{OM} * EF_{grid,OM,y} + w_{BM} * EF_{grid,BM,y} \quad \textbf{(3)}$$

Where:

$EF_{grid,BM,y}$ Build margin CO_2 emission factor in year “y” (tCO_2/MWh) as calculated from (2) above
$EF_{grid,OM,y}$ Operating margin CO_2 emission factor in year “y” (tCO_2/MWh) as calculated from equation (1) above
w_{OM} Weighting of operating margin emissions factor (%)
w_{BM} Weighting of build margin emissions factor (%)

The default values of the weights, w_{OM} and w_{BM} as recommended by the selected methodology are 0.5 for both components. These default values have been used in calculating CM emission factor together without rounding the values of EF_{OM} and EF_{BM}.

Based on the formula above (**3**), baseline emission factor is calculated as;

$EF_{grid,CM,y}$ = 0.50 * 0.4497 + 0.50 * 0.3634 = **0.4066** tCO_2/MWh

The combined margin emission factor is therefore **0.4066 tCO_2/MWh.** The emission factor will remain the same during the first crediting period as recommended by the methodology.

The calculated emission factor is compared to the "IFI (Interim) Dataset of Harmonized Grid Emission Factors (Version 1.0)[56]" where the CM is given as 437 gCO_2/kWh for hydro projects in Azerbaijan. This value is converted to 0.437 tCO_2/MWh. Since 0.4066 tCO_2/MWh is lower then 0.437 tCO_2/MWh, the EF used in this project is conservative.

SDG 7: Affordable and Clean Energy (Ensure access to affordable, reliable, sustainable and modern energy for all)

The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum. The project is expected to generate 20,448 MWh of clean energy per annum according to the generation license. Hence, contribution of the project could be followed via indicator 7.2.1 "Renewable energy share in the total final energy consumption" and following target: 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix". This project increases the renewable energy sharing of global energy mix and contribute to improved air quality by reducing air pollution.

Net generation (MWh) = Electricity supplied to grid – Electricity withdrawn from the grid

[56] https://unfccc.int/sites/default/files/ifidata-set_gridemissionfactors.xlsx

SDG 8: Decent Work and Economic Growth (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all)

The project will create minimum 8 employment opportunities. It will contribute to decent work and economic growth by providing long term job opportunities.

SDG13: Climate Action (Taking urgent action to combat climate change and its impacts)

Emission factor for the baseline scenario was calculated as 0.4066 tCO_2/MWh. Accordingly, the project leads to mitigation of 8,311 tCO_2 per annum.

Considering this project is a hydro power plant project, combined margin is calculated as follows:

Emission factor calculated according to selected methodology; OM is calculated as 0.4497 tCO_2/MWh whereas BM is 0.3634 tCO2/MWh.

$EF_{grid,CM,y}$ = 0.4497 x 0.5 + 0.3634 x 0.5 = 0.4066 tCO_2/MWh

BE_y = 20,448 MWh x 0.4066 tCO_2/MWh = 8,311 tCO_2

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

SDG 13

YEAR	BASELINE ESTIMATE (tCO_2e)	PROJECT ESTIMATE (tCO_2e)	NET BENEFIT (tCO_2e)
2024 (01/04/2024 - 31/12/2024)	6,264	2.07	6,262
2025	8,311	2.75	8,311
2026	8,311	2.75	8,311
2027	8,311	2.75	8,311
2028	8,311	2.75	8,311
2029 (01/01/2029 - 31/03/2029)	2,050	0.68	2,049
Total	41,570	13.75	41,557
Total number of crediting years	5 years		

Annual average over the crediting period	8,311	0	8,311

SDG 7

YEAR	BASELINE ESTIMATE (MWh)	PROJECT ESTIMATE (MWh)	NET BENEFIT (MWh)
2024 (01/04/2024 - 31/12/2024)	0	15,406	15,406
2025	0	20,448	20,448
2026	0	20,448	20,448
2027	0	20,448	20,448
2028	0	20,448	20,448
2029 (01/01/2029 - 31/03/2029)	0	5,042	5,042
Total	0	102,240	102,240
Total number of crediting years	5 years		
Annual average over the crediting period	0	20,448	20,448

SDG 8

YEAR	BASELINE ESTIMATE (people)	PROJECT ESTIMATE (people)	NET BENEFIT (people)
2024 (01/04/2024 - 31/12/2024)	0	8	8
2025	0	8	8
2026	0	8	8
2027	0	8	8
2028	0	8	8
2029 (01/01/2029 - 31/03/2029)	0	8	8
Total	0	8	8
Total number of crediting years	5 years		
Annual average over the crediting period	0	8	8

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13

Data / Parameter	Emissions Reductions in tCO_2
Unit	tCO_2
Description	Reduction of CO_2 emissions due to implementation of project activity
Source of data	Electricity generated by SOCAR-3 Hydro Bundle and electricity grid emission factor as 0.4066 tCO_2/MWh.
Value(s) applied	The electricity grid emission factor is 0.4066 tCO_2/MWh. Estimated annual emission reduction is 8,311 tons of CO_2.
Measurement methods and procedures	Renewable energy power plants such as SOCAR-3 Hydro Bundle, will contribute to "Emissions Reductions or Removals and/or Adaptation to Climate Change" by reducing CO_2 emissions caused by fossil fuel-fired power plants that are displaced due to the project activity, in line with GS4GG principles. The Project will contribute to SDG Target 13.2 through an expected amount of 8,311 tons of CO_2e, which represent direct and quantifiable impact on climate security.
Monitoring frequency	Continuous measuring, monthly recording
QA/QC procedures	-
Purpose of data	To calculate the baseline emission value; and also, to monitor the contribution to SDG 13 (Take urgent action to combat climate change and its impacts)
Additional comment	-

SDG 7

Data / Parameter	$EG_{PJ,grid,y}$
Unit	MWh/yr
Description	Quantity of electricity generated and supplied by the project power plant to the grid in year y
Source of data	Generation records

Value(s) applied	Estimated annual generation forming the basis for emission reduction calculation is 20,448 MWh/yr.
Measurement methods and procedures	Electricity meters Due to the configuration of the meters explained in Section A.3., EG of Mirik = Value read directly from meter 007251182200767 EG by Garigishlag is calculated as follows: EG of Garigishlag = (Value read from meter 007251182200632) - (EG of Mirik) Therefore, total EG from the bundle is measured from the meter 007251182200632.
Monitoring frequency	Continuous measuring, monthly recording
QA/QC procedures	Calibration of the meters is valid for 3 years.
Purpose of data	To calculate the baseline emission value; and also to monitor the contribution to SDG 7
Additional comment	-

SDG 8

Data / Parameter	Quantitative employment and income generation
Unit	Number of recruited staff and their social security records
Description	Ensuring that the staff receives their full salaries on time.
Source of data	Social Security Records to be provided by the Project Owner
Value(s) applied	The project is expected to create minimum 8 job opportunities.
Measurement methods and procedures	Project will create new job opportunities. All employment is done according to the national employment regulations. Employment records will be checked.

Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	To monitor the contribution to SDG 8
Additional comment	-

Others

Data / Parameter	Principle 9.5 Hazardous and Non-hazardous Waste – Other Pollutants
Unit	-
Description	Waste oil might be generated during maintenance works of the equipment. Waste oil will be properly managed.
Source of data	Assessing disposal methods during site visits and checking waste oil disposal records.
Value(s) applied	No hazardous waste generation in the baseline scenario
Measurement methods and procedures	No harm is expected from this parameter throughout the project lifetime since national laws and regulations will be enforced in handling the waste. Besides, frequency of waste oil formation is seen to be very low.
Monitoring frequency	At each verification
QA/QC procedures	Resolution of the Cabinet of Ministers of the Azerbaijan Republic dated August 25, 2004 No. 117 "About approval of the State strategy for management of hazardous wastes in the Azerbaijan Republic". Disposal records, if any, will be kept by the project owner for QA/QC purposes. (https://cis-legislation.com/document.fwx?rgn=12271)
Purpose of data	To monitor the contribution to Principle 9.5.
Additional comment	-

Data / Parameter	$FC_{i,j,y}$
Unit	Volume unit per year (m3/yr)
Description	Quantity of fuel (diesel) consumed by the project
Source of data	Onsite measurements
Value(s) applied	Amount of fuel used in the back-up diesel generator. 1000 L of diesel usage was assumed for the project emission calculations.
Measurement methods and procedures	On-site measurements of the equipment and fuel purchase invoices will be checked to determine the amount of diesel used in year y.
Monitoring frequency	Continuously
QA/QC procedures	The metered fuel consumption quantities to be cross-checked with available purchase invoices from the financial records, if available.
Purpose of data	To calculate project emissions
Additional comment	-

B.7.2 Sampling plan

No sampling plan is necessary.

B.7.3 Other elements of monitoring plan

Monitoring is a key procedure to verify the real and measurable emission reductions from the proposed project. To guarantee the proposed project's real, measurable and long-term GHG emission reductions, the monitoring plan is established.

All monitoring procedures and requirements of the SOCAR-3 Hydro Bundle Project are in accordance with the methodology AMS-I.D, version 18.0. Due from the payback of the project depends on the electricity delivered to the grid, the meters have to be accurate, reliable and continuously measuring the electricity delivered to the national grid and thus can be considered as representative.

Generation data collected during crediting period is submitted to GTE who is responsible for calculating the emission reduction subject to verification: Generation data is used to prepare monitoring reports which are used to determine the vintage from the project activity.

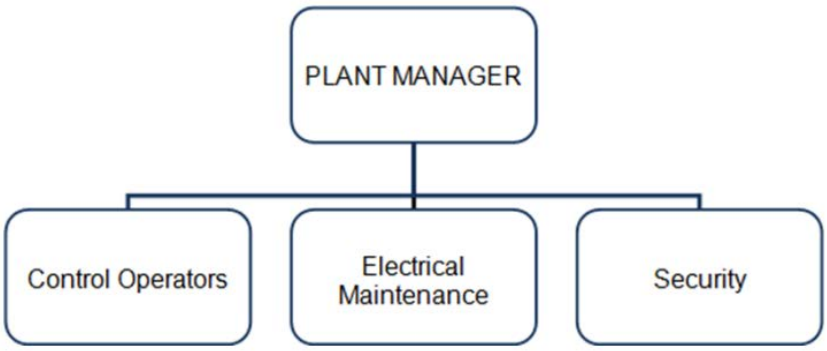

Figure 6 - Monitoring System Organization Chart

Verification Team Members is expected to include the following staff:

Accounting Manager: Responsible for keeping data about generation and consumption

Azernerji: Responsible for transmission and wholesale of electricity. Also, owner of the plants

SOCAR Trading: Management of the project in GS program

GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş.: Responsible for emission reduction calculations, preparing monitoring report and periodical verification process

Installation of meter and data monitoring are carried out according to the national regulations and regulations. Electricity metering device is used for monitoring the electricity generated by the power plant. Readings are done using the metering device. The measurements will be made in the main switchgear stations at the project site. The meters will measure the net electricity delivered to the grid. Data obtained from measurements will be used in calculations of emission reductions. The project is connected to the grid at 35 kV/110 kV Daşkesen HX substation.

Maintenance and calibration of the metering devices are made by Azerenerji. The specification of the meters will be in compliance with the requirements of the host country.

A high level of accuracy of the measurements will be achieved due to the use of high-precision equipment and due to strict compliance with the recommendations for calibration frequency of the equipment provider. The amount of electricity generated by the project and delivered to the national grid will be measured continuously and recorded on a monthly basis.

Data will be stored electronically during the crediting period. All data is kept for at least two years after the crediting period for QA/QC purposes or 2 years after the last issuance, whichever is later. Azerenerji will be responsible for storage of data received from the measuring devices.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

Start date of project activity is determined as 25/04/2023, which is the date of Construction Agreement.

C.1.2 Expected operational lifetime of project

The expected operational lifetime of the project activity is considered as 150,000 hours[57].

C.2. Crediting period of project

C.2.1 Start date of crediting period

The start date of the first crediting period is 01/04/2024 and the end date is 31/03/2029. Mirik and Garigishlag have commissioned respectively on 27/03/2024 and 28/03/2024.

[57] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf

C.2.2 Total length of crediting period

The crediting period will be valid for five years. Thus, crediting period will be between 01/04/2024 and 31/03/2029.

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 6.1 Labor Rights	Required trainings will be given to the staff and the certificate of attendances will be kept. In case of any occupational injury/accident happens on-site, the records will be kept and provided.

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 stated in Gold Standard Gender Policy document, “foundational gender sensitive certificiation” which is mandatory for every project requires compliance with the gender ‘do no harm’ safeguard, gender-gap analysis and gender sensitive stakeholder consultations. Although the project is a renewable energy project and does not have negative impacts on men and women, it complies with the criteria mentioned. Moreover, Azerbaijan has

	ratified ILO convention 100[58], 111[59], 122[60] and 142[61], which provides gender equality. The project tries to align with the national gender strategy. So, the project does not involve and is not complicit in any form of discrimination based on gender difference.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project aims to create new employment and income opportunities within the scope of SDG 8. While doing this, a gender-equal strategy is implemented by creating employment opportunities for both man and woman without discrimination.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	Azerbaijan has ratified ILO convention 100[62], 111[63], 122[64] and 142[65], which provides gender equality and discrimination based on gender is illegal in Azerbaijan. The project tries to align with the national gender strategy. So, the project does not involve and is not complicit in any form of discrimination based on gender difference. Therefore, an Expert is not required for the Gender Safeguarding Principles & Requirements.

[58] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312245
[59] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312256
[60] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312267
[61] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312287
[62] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312245
[63] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312256
[64] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312267
[65] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312287

Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	An Expert is not required to assist with Gender issues at the Stakeholder Consultation. All stakeholders were informed about the Local Stakeholder Meeting without gender discrimination. Both women and men were participated during Stakeholder Consultation.

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

The stakeholder meeting was conducted on 15 April 2025 at 14.00 (Azerbaijan Time) The meeting took place at Lachin restaurant, Buzovna settlement, Baku, Azerbaijan. Attendance: Azerenerji OJSC- Mr. Nijat Allahverdiyev, Mr. Sekhavet Mirzeyev

- 14:00 The audience gathered at the venue
- 14:10 Mr. Sekhavet Mirzeyeve gave and introduction about the project. Touched points on turbine types, environmental benefits, training of employees and etc.
- 14:20 Mr. Nijat Allahverdiyev started the presentation of the project. The audience heard about the project, it's actual photos and location. Brief explanation on what is Gold Standard also was introduced. Apart from that UN sustainable development goals explained to people. Possible positive and negative environmental aspects of the project presented to the wide audience.

A sustainable development form for them to fill was provided with an attached evaluator information sheet with sections to write their input on positive and negative impacts of the project. The information sheet included both technical and non-technical information about the project, such as information on the project owner, information on equipment (their number, capacity etc.), photographs from the project sites, commissioning and decision-making dates, as well as the SDGs that this project contributes such as generating clean energy. The information sheet has the details of:

- Technical and non-technical information about the project
- Environment and social impacts of the project as well as the SDG contributions

Please see the stakeholder consultation report for further details.

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)	There has been no input regarding the project by the local stakeholders. The continuous input & grievance mechanism was presented during the local stakeholder meeting. The contact information of project site were shared with stakeholders. The book will be kept at Azerenerji headquarters in Baku, Azerbaijan.
GS Contact (mandatory)	help@goldstandard.org
Other	Efendiyev Anar Elshan (anar.efendiyev@azerenerji.gov.az)

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

Briefly describe below how the project incorporates a human rights-based approach.

Azerbaijan has ratified ILO convention 100[66], 111[67], 122[68] and 142[69], which provides gender equality and discrimination based on gender is illegal in Azerbaijan.

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

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.2.1.1 |	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY

[66] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312245
[67] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312256
[68] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312267
[69] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312287

		☒ 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.

Staff will be trained during construction and operation phases, such as general HSE, risk, first aid, etc. The training records will be checked.

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

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 |	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	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*

P.4.2.1 |	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO

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.4.2.1 |	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	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
P.4.2.2 |	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
P.4.2.3 |	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.4.2.3 |	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

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.
Please add text here….

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 | P.4.4.6 |	If answer to question above is “YES” or “POTENTIALLY” - 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?	☐ YES ☐ NO ☒ 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
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 *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.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	use of migrant workers? *if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	having no arrangements for basic services[70] for workers? *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*	☐ 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
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

[70] 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.

		☐ 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

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

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

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

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

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

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 | - P.8.2.5 |	negatively impact on the catchment area? *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.*	☐ 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 | - P.9.1.3 |	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project? *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.*	☐ 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.9.1.4 |	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
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? *Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.*	☐ 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.

If generated waste oil from equipment will be collected and disposed properly in line with the relevant regulation. Waste oil disposal records will be checked. Monitoring parameter is added for this principle.

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 resulting from the handling and processing of waste material?	☒ YES ☐ NO ☐ 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.

Waste oil might be generated during maintenance works of the equipment. Resolution of the Cabinet of Ministers of the Azerbaijan Republic dated August 25, 2004 No. 117 "About approval of the State strategy for management of hazardous wastes in the Azerbaijan Republic". No harm is expected from this parameter throughout the project lifetime since national laws and regulations will be enforced in handling the waste. Besides, frequency of waste oil formation is seen to be very low.

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

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

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

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?[71]	☐ 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
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

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

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, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☐ 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

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	“Azerenerji” Open Joint-Stock Company
Registration number with relevant authority	-
Street/P.O. Box	AZ1005, 10 Abdulkerim Alizade str.
Building	-
City	Baku
State/Region	-
Postcode	-
Country	Azerbaijan
Telephone	+994 12 598 55 23
E-mail	info@azerenerji.gov.az
Website	https://azerenerji.gov.az/
Contact person	Efendiyev Anar Elshan
Title	-
Salutation	Mr.
Last name	Efendiyev
Middle name	Elshan
First name	Anar
Department	-
Mobile	-
Direct tel.	-
Personal e-mail	anar.efendiyev@azerenerji.gov.az

Organization name	SOCAR Trading SA
Registration number with relevant authority	-
Street/P.O. Box	Rue du Rhône 40, 1203
Building	-
City	Geneva
State/Region	-
Postcode	-
Country	Switzerland
Telephone	+41 22 562 00 00
E-mail	info@socartrading.com
Website	https://www.socartrading.com/
Contact person	Julie Jones
Title	-
Salutation	Ms.
Last name	Jones
Middle name	-
First name	Julie
Department	-
Mobile	-
Direct tel.	-
Personal e-mail	jnoller@socartrading.com

Organization name	GTE KARBON SÜRDÜRÜLEBİLİR ENERJİ EĞİTİM DANIŞMANLIK VE TİC. A.Ş.
Registration number with relevant authority	-
Street/P.O. Box	Mustafa Kemal Mah. Barış Sitesi 2111. Sok.
Building	No:5
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State/Region	-
Postcode	06510
Country	Türkiye
Telephone	+90 312 514 63 63
E-mail	kemal.demirkol@gte.com.tr
Website	www.gte.com .tr
Contact person	Mehmet Kemal Demirkol
Title	Director
Salutation	Mr.
Last name	Demirkol
Middle name	Kemal
First name	Mehmet
Department	Management
Mobile	-
Direct tel.	+90 312 514 63 63
Personal e-mail	kemal.demirkol@gte.com.tr

APPENDIX 3 - LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	Not Applicable
Risk of change to the Project activities during Project Certification Period:	Not Applicable
Land-use history and current status of Project Area:	Not Applicable
Socio-Economic history:	Not Applicable
Forest management applied (past and future)	Not Applicable
Forest characteristics (including main tree species planted)	Not Applicable
Main social impacts (risks and benefits)	Not Applicable
Main environmental impacts (risks and benefits)	Not Applicable
Financial structure	Not Applicable
Infrastructure (roads/houses etc):	Not Applicable
Water bodies:	Not Applicable
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	Not Applicable
Where indigenous people and local communities are situated:	Not Applicable
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	Not Applicable

APPENDIX 4 - DESIGN CHANGES

A4.1. Details of proposed or actual design change

There is no proposed design changes.

A4.2. Describe the impacts of design change on the following

a. Additionality

N/A

b. Applicability of methodology and other methodological regulatory documents with which the project activity has been certified

N/A

c. Compliance with the monitoring plan of the applied methodology

N/A

d. Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan

N/A

e. Scale of the project activity

N/A

f. Stakeholder consultation

N/A

g. Sustainable development criteria

N/A

h. Safeguarding assessment

N/A

i. Compliance with applicable legislation

N/A

j. <u>Only for LUF Projects</u>: Transparent summary of all approved changes in Project Area, Eligible Area and accompanying changes in ex-ante emissions removals.

N/A

DATE OF APPROVED DESIGN CHANGE (MM/DD/YYYY)	PROJECT AREA (HA)		ELIGIBLE AREA (HA)		EX-ANTE ESTIMATE (TCO2E)	
	INCREASE OR DECREASE ?	VALUE (HA)	INCREASE OR DECREASE?	VALUE (HA)	INCREASE OR DECREASE ?	PERCENTAGE (%)

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