«CENERGO LLC»

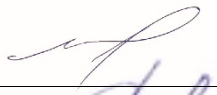
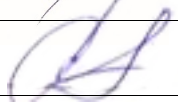
Construction Of Combined-Cycle Gas Turbine Power Plant with a Capacity Of 550 MW

Environmental and Social Impact Assessment

Non-Technical Summary

125-1105-ESIA

LIST OF PERFORMERS

Head, Project Coordinator	O. Vakhidova-Mordovina	
Chief sociologist	B. Mavlyanov	
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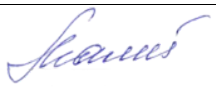
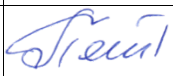
Ecologist/Atmospheric air specialist	N. Limankina	
Chief ecologist	G. Petraeva	
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1 TERMS AND DEFINITIONS

Associated facilities	Associated facilities are facilities that are not financed by the project and that would not have been built or expanded if the project had not been implemented, the project would not be viable (IFC Performance Standard 1)
Impacts on the environment and social conditions	Environmental and social impacts refer to any change, potential or actual, to the physical, natural, or cultural environment, and impacts on the surrounding community and employees, resulting from the business activity to be supported (IFC Performance Standard 1)
Stakeholder	A person or an organization that may influence, be influenced by, or perceive themselves to be influenced by activities or decision-making
The Customer (and also the initiator of the planned activities), also the Company	«CENERGO» LLC
Area of influence	An area that may be affected by: (i) the project, its activities and facilities of the Customer, directly operated or managed by it (including its contractors) and included in the Project; (ii) the impacts of unplanned but foreseeable circumstances caused by the Project that may occur at a later time or somewhere else; or (iii) indirect impacts of the Project on biodiversity or ecosystem services upon which the affected communities' livelihoods are dependent (IFC Performance Standard 1)
Zone of influence of pollutant emissions into the atmosphere	The territory formed by the isoline of concentration equivalent to 0.05 MPC for all sets of sources of chemical pollution of atmospheric air for all pollutant emissions
Initiator of the proposed activity	A legal or natural person who intends to carry out the proposed activity and who is responsible for preparing the documentation for the activity in accordance with the regulatory requirements for this type of activity, in order to obtain the relevant permits
Critical habitat	Critical habitat is an area that has high biodiversity value, including (i) sites required for the survival of critically endangered and(or) endangered species or areas with special significance for endemic or restricted-range species; (iii) sites that are critical for the survival of migratory species and(or) schooling species with global significance; (iv) highly endangered ecosystems and(or) unique ecosystems and(or) (iv) territories associated with key evolutionary processes (IFC PS6)
Cumulative impacts	Impacts arising from additional impacts on the scope of activities or resources used in or directly affected by the project as a result of other existing, planned or realistically determined circumstances during the identification of risks and impacts; generally recognized as significant based on scientific opinion and/or based on the affected communities' concerns (IFC Performance Standard 1)

Makhalla	Makhalla – residential quarter of a city, usually forms a community and a self–governing administrative unit of residents. Makhalla in a broad sense refers to a district or a local community. Promoting it as a 'Traditional institution', the Uzbek government has embraced makhalla as a 'fundamental unit' of society. Makhallas were legitimized into law in 1993 under the Law on Institutions of Self-Government of Citizens, otherwise known as the Makhalla Law. Almost every Uzbek technically belongs to a makhalla and in general, no one can be excluded based on class, profession or religion. (https://uzbekistangid.ru/kultura/chto-takoe-mahallya-v-uzbekistane)
Environmental and social impact assessment	A set of works that includes the identification, prediction and assessment of the planned activities' impact on the components of the environment and socio-economic conditions, including the analysis of alternative options for planned activities, identification of conditions for their implementation and development of measures in the field of environmental and social management, accompanied by the disclosure of relevant information about the activities and consultations with stakeholders
Post-project analysis	Monitoring activities during construction and operation of facilities, monitoring compliance with stipulations and requirements, monitoring the effectiveness of measures to prevent/minimise impacts, comparing the conclusions of the environmental impact assessment with actual impacts, and developing additional measures (if necessary)
Project	Intended activity - "Construction of Combined-Cycle Gas Turbine Power Plant with a Capacity of 550 MW"
Lenders	Financial institutions that provide funding for projects and are responsible for assessing and managing the environmental and social risks associated with these projects before committing capital. These lenders, including banks and international financial institutions, use the ESIA process to ensure that projects are sustainable, compliant with standards like the Equator Principles, and have measures in place to mitigate potential negative impacts on the environment and society. Financing of the Project is being sought from; • DenizBank AG, Wien, Austria, and • DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, Germany
Recipient(s)	Component(s) of the natural or social environment affected by the proposed activity, in particular: the natural environment and its individual components; population, individual social groups, objects of cultural heritage, etc.
Territories with normalized indicators of the quality of the human habitat	Territories in which hygienic standards of atmospheric air should be provided for chemical, biological and physical indicators of the quality of the human habitat: any residential development; educational and children's institutions; sports facilities and playgrounds; playgrounds; recreational areas; therapeutic-preventive and healing facilities of common use resorts, sanatoriums, rest houses. horticultural associations, collective or individual suburban and gardening plots
Khokimiyat	Administration of the city or district
Environmental aspect	An element of an organization's activities, products or services that interacts or may interact with the environment (ISO 14001:2015)

ABBREVIATIONS

LLC	Limited Liability Company
IFC	International Finance Corporation
GTU	Gas Turbine Unit
ESIA	Environmental and social impact assessment
EIS	Environmental Impact Statement
ECA	Export Credit Agency
EHS	General Environment, Health and Safety Guidelines
SEP	Stakeholder Engagement Plan
GHGs	Greenhouse gases
MPC	Maximum permissible concentrations
MPCmo	Maximum allowable concentration of a pollutant in the atmospheric air, maximum one-time
MPCad	Maximum permissible concentration of the pollutant in the atmospheric air, average daily
MW	Mega watt
PS	Performance standards
OECD	Officially Supported Export Credits
ST	Steam Turbine
SPZ	Sanitary protection zone
CLO	Community Liaison Officer
TPP	Thermal Power Plant

1 INTRODUCTION

1.1 Brief description of the planned activity

"The Environmental and Social Impact Assessment (hereinafter - ESIA) for the project " Construction of Combined-Cycle Gas Turbine Power Plant with a Capacity of 550 MW" (hereinafter - the Project) for CENERGO LLC (hereinafter - Customer) is conducted in accordance with the requirements of the International Finance Corporation (hereinafter - IFC) to attract project finance.

Creditors for Jizzak Projects are;

- DenizBank AG, Wien, Austria, and
- DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, Germany

Since 1970, **Cengiz Holding**, a Turkish investment firm, has engaged in mining, construction, **ENERGY**, operations, tourism, and aviation.

Cengiz Energy Industry & Trading Co.which is part of **Cengiz Holding**, was established in 2000 and is very active in the following fields: power plant design, construction and operation and energy production.

Electricity Distribution, Energy Trading, Natural Gas Distribution, Natural Gas Trading. Total Operational 5.231 MW + Total Construction 1.627 MW.

Cenergo is a subsidiary of **Cengiz Energy** in Uzbekistan, operating two combined-cycle natural gas power plants (240 MW) located in Syrdarya and Tashkent.

The Jizzak operation is presently under construction; upon completion, it will have a 550 MW capacity. The detailed project schedule is given below.

PROJECT SCHEDULE

TARGET	**TIMEFRAME**	
	START	**FINISH**
Notice to Proceed (NTP)	11.2023	12.2026
Site Preparation Works	12.2023	04.2025
Engineering	01.2024	02.2026
Procurement	02.2024	05.2026
Construction	05.2025	06.2026
Mechanical Completion	05.2025	08.2026
Commissioning	02.2026	11.2026
Overall Plant Acceptance	11.2026	12.2026

The ESIA and NTS have been prepared for the potential financing of the Project by the Project

The Project will comply with the Uzbek laws that pertain to environmental and social issues, OECD Common Approaches, Equator Principles IV (July 2020), IFC Performance Standards (January 2012), World Bank Group General Environmental, Health and Safety (EHS) Guidelines, World Bank Group EHS Guidelines for Thermal Power Plants (2007), The UN Guiding Principles on Business and Human Rights, and international environmental law including relevant conventions and treaties applicable to the Project;

The project provides for the construction and operation of a combined-cycle gas turbine power plant with a capacity of 550 MW consisting of 1 gas turbine unit (GTU) "Siemens S SGT5-4000F V10", 1 unit of a steam turbine (ST) "Siemens SST-700/900", with a capacity of 185.3 MW, manufactured in Germany, with the necessary buildings and auxiliary facilities and with the creation of an appropriate infrastructure on the territory of a combined-cycle gas power plant with a capacity of 550 MW in Sharaf Rashidov district, Jizzakh region. The total generation of electric energy from the combined-cycle gas turbine power plant will amount to 4,000,000 MWh per year.

The territory of the 550 MW combined-cycle gas power plant includes an industrial site in the Sharaf-Rashidov district (Jizzakh region), and the main technological divisions of the enterprise are located at the site in the eastern city of Jizzakh (5.5 km) (*5*). Previously, the site was agricultural land, and compensation for the affected farmer was provided by CENERGO LLC in accordance with Uzbek national regulations. In parallel, a separate process is currently underway to ensure full alignment of the compensation and resettlement procedures with the IFC Performance Standard 5 (Land Acquisition and Involuntary Resettlement) requirements established by the project's international lenders.

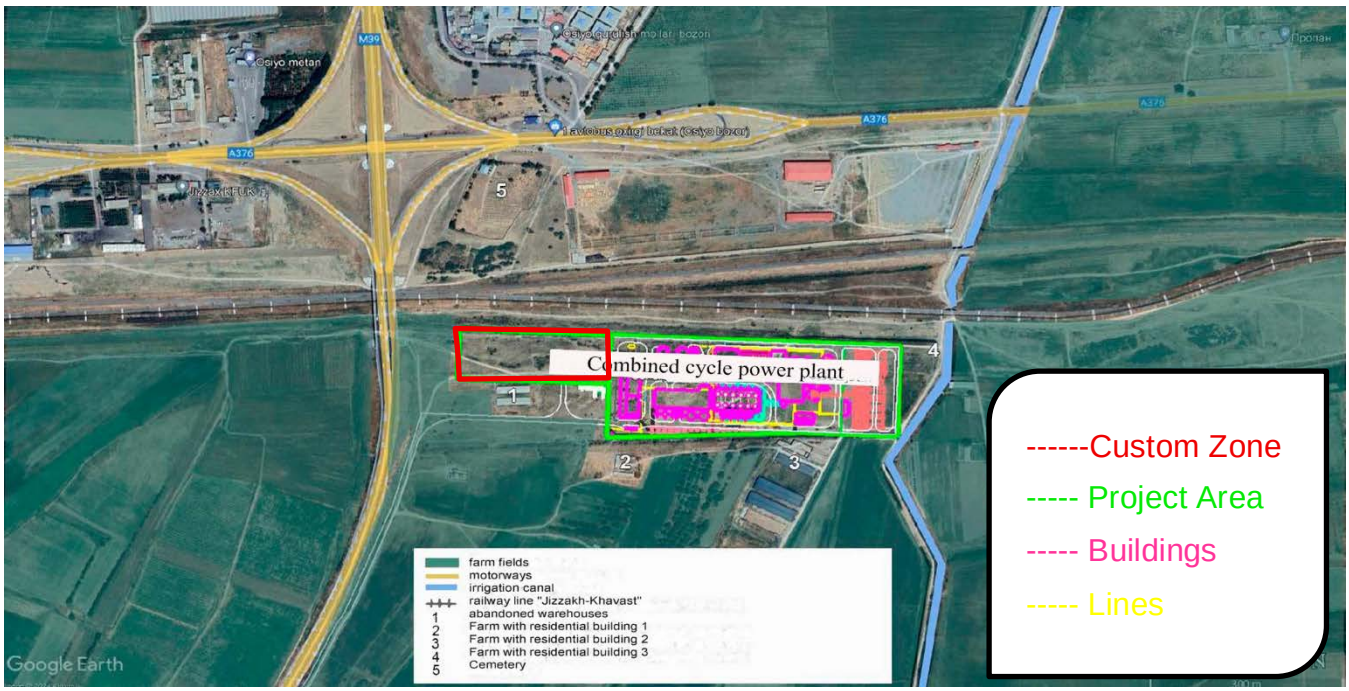


Figure 1: Area of planned activities

A land plot of 9.42 hectares was allocated for construction by the Khokimiyat of Sharaf-Rashidov District under Decision No. 01-51 dated January 30, 2024. According to this decision, 9.42 hectares of land previously belonging to the "Dona-bek Sano" farm (as per cadastral record No. 4429 dated October 31, 2018) were permanently transferred to the state for project purposes. In addition, 2 hectares of land were allocated for temporary use and will be returned to the farm upon completion of construction. Cenergo LLC is responsible for restoring the temporarily used land to its original condition before it is handed back to the farmer.

The imported and vital equipment from other nations will be temporarily stored in the "custom zone," which is shown in Figure 1. After construction is completed, the area will be restored and prepared for future usage.

The impacts of the following power plant facilities are considered within the framework of the ESIA:

- gas turbine unit (GTU) "Siemens SGT5-4000F V10", with a capacity of 365.3 MW (50 Hz)
- steam turbine (ST) "Siemens SST-700/900", with a capacity of 185.3 MW
- water treatment plant;
- 'Heat Recovery Steam Generator' (HRSG),
- water-cooling condensers
- transformers
- wastewater treatment plant
- switchyard
- control room
- administration, and welfare buildings
- a new driveway road to the power plant with a length of about 90 meters – displayed on the general master plan;

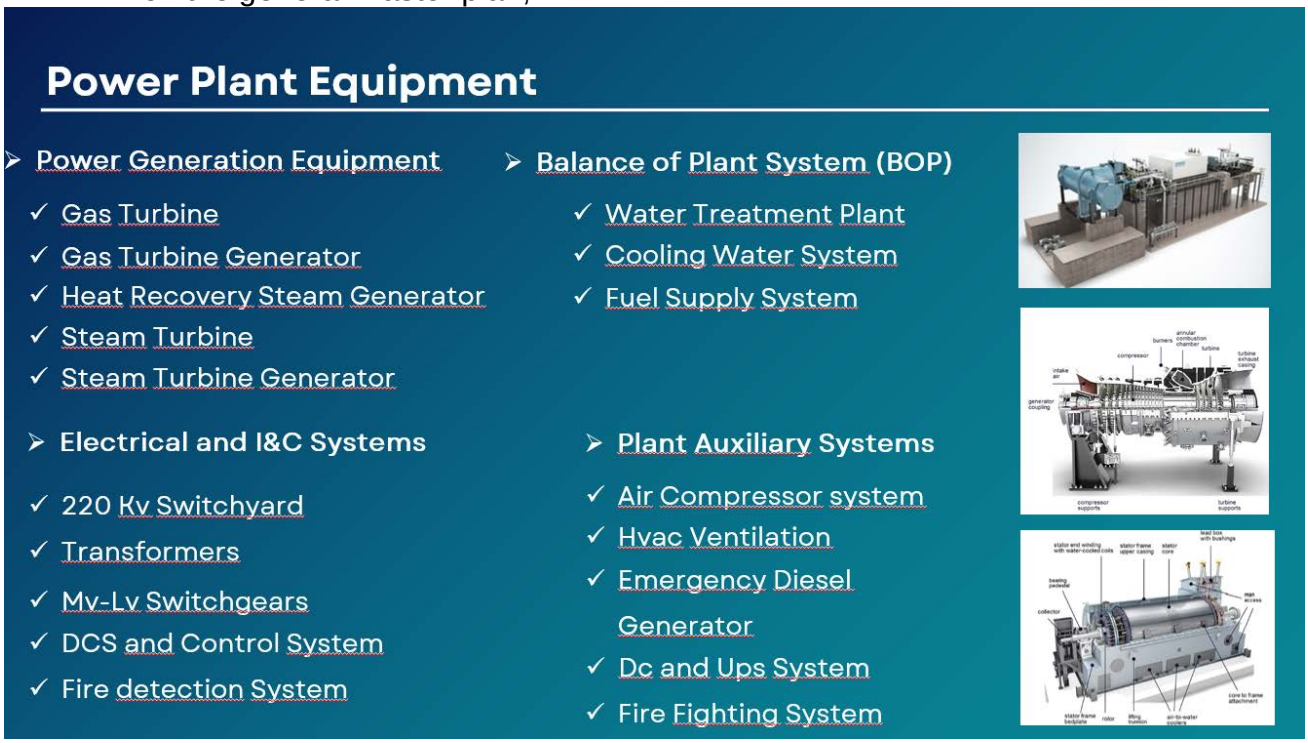


Figure 2: List of Buildings and Equipment

Additionally, the project design includes a treated effluent discharge point that will release into an existing drainage ditch located near the south-eastern corner of the project site.

Associated facilities (Water Supply Pipeline, Electricity and Gas Pipeline) of the Project at the time of the ESIA studies were at the discussion and design stage during the ESIA preparation.

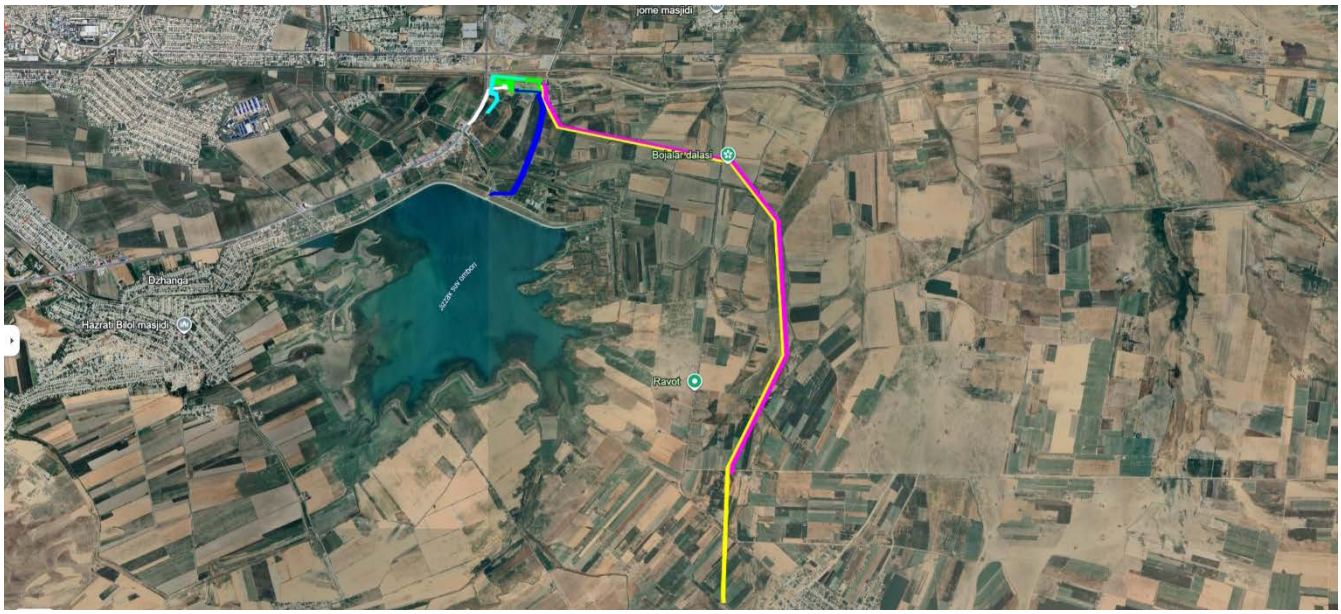


Figure 3:Associated Facilities Road

According to the current situation of the associated facilities; the Electricity (**Pink** and **yellow** lines in the map): the local EIA study has been completed by the local authority (National Electric Networks of Uzbekistan) and EIA Approval was obtained on **15.09.2025**, lines with a length of approximately 8 and 10 km from the project area to the existing 220 kV overhead lines L-20-D and L-Z-C. – A draft scheme for the power output of a thermal power plant with possible connection options has been developed.

The water supply pipeline (**The Dark Blue** line in the map): the local EIA study has been completed by the local authority (Water Authority), and EIA Approval was obtained on **23.07.2025.**

The natural gas pipeline (**Turquoise** line in the map), the local EIA study has been completed by the local authority (TRANSGASENGINEERING LLC) and EIA Approval was obtained on **24.03. 2025**,

A separate ESIA Addendum (independent from this ESIA) is being prepared on behalf of the project lenders, in accordance with the project financing agreement. This addendum aims to identify and address any gaps between the national EIA process conducted for regulatory approval in Uzbekistan and the environmental and social requirements of the lenders.

1.2 Input data

The following initial data were used to prepare the ESIA materials.

- Project documentation:
- The Project of Environmental Impact Statement (EIS) by local legislation for the construction of a 550 MW combined-cycle gas turbine power plant in the Sharaf-Rashidov district, Jizzakh region.
- "Power distribution scheme in connection with the construction of a new 550 MW thermal power plant (TPP) in the Jizzakh region No. 2310-2;

- conclusions of the State ecological expertise and authorized bodies in the field of environmental protection;
- technological schemes of production, description of technology, technological regulations;
- Report of the preliminary assessment of the ground and geotechnical characteristics of the construction site;

Technical proposal of NEM Energy B.V. for equipment supply

- Siemens Energy technical proposal for the supply of equipment.
- statistical socio-economic information (Uzstat data);
- other documentation;
- the results of background studies conducted within the framework of the ESIA in the spring, summer and autumn of 2024;
- the results of work with stakeholders (focus groups, etc.).

2 PROJECT SUMMARY

2.1 Brief description

The project provides for the construction of a combined-cycle gas turbine power plant with a capacity of 550 MW consisting of 1 gas turbine unit (GTU) "Siemens S SGT5-4000F V10", 1 unit of a steam turbine (ST) "Siemens SST-700/900", with a capacity of 185.3 MW, manufactured in Germany, with the necessary buildings and auxiliary facilities and with the creation of an appropriate infrastructure on the territory of a combined-cycle gas power plant with a capacity of 550 MW in Sharaf Rashidov district, Jizzakh region. The total generation of electric energy from the combined-cycle gas turbine power plant will amount to 4,000,000 MWh per year.

A land plot of 9.42 hectares was allocated for construction by the Khokimiyat of Sharaf-Rashidov District under Decision No. 01-51 dated January 30, 2024. In addition, 2 hectares of land were allocated for temporary use and will be returned to the farm upon completion of construction. Cenergo LLC is responsible for restoring the temporarily used land to its original condition before it is handed back to the farmer.

The territory for the construction of the gas turbine power plant will occupy 2.91 hectares, 3.65 hectares will be used for parking spaces, roads inside the facility, and a customs clearance area. 2.83 hectares will be allocated for landscaping; the general master plan of the enterprise is shown in Figure 4 below.

2.2 Location

Administratively, the planned combined cycle gas turbine power plant will be located in Sharaf Rashidov district of the Jizzakh region. The distance from the allocated territory to the border of Jizzakh, which is located in a westerly direction, is 5.5 km. The territory of the allocated construction site is surrounded by empty agricultural fields. Figure 2 shows the location of the construction site.

The nearest highways run in a northerly direction at a distance of 325 meters (A 376) and in a westward direction at a distance of 95 meters (M 39) from the designated site for the construction of a power plant.

The "Jizzakh-Khawast" railway line runs in a northerly direction at a distance of 60 meters from the site under consideration.

The nearest surface water body to the designated construction site is a drainage ditch located approximately 11.5 meters to the east. The ditch has a maximum flow capacity of 20–25 cubic meters of water per minute, depending on the season, and an average depth of 1–2 meters at normal water levels. During the autumn and winter months, the ditch often becomes partially or completely dry, with water levels typically much lower than this depth.

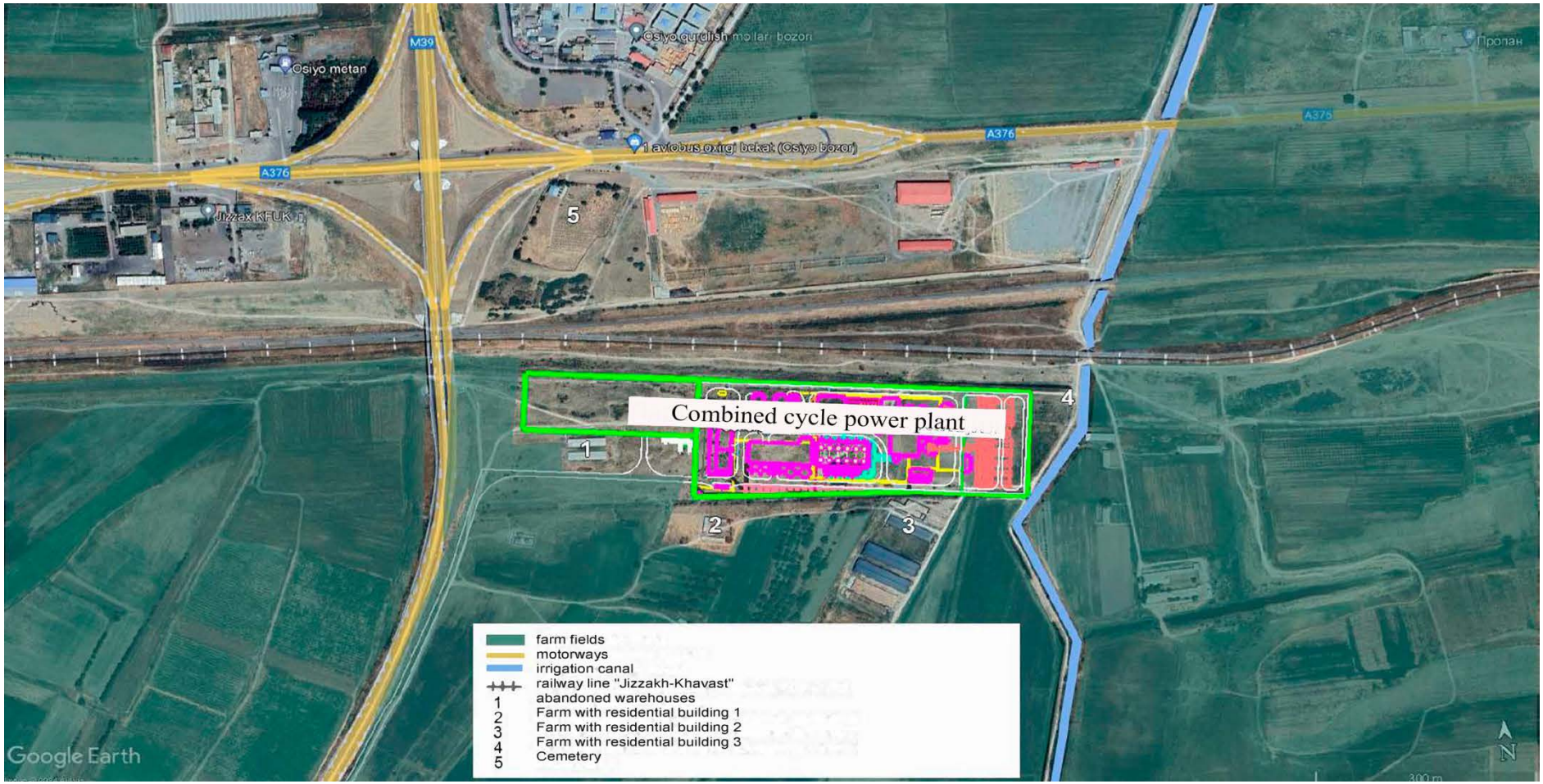


Figure 4: Project site and adjacent facilities

2.2.1 Alternatives analysis

When assessing this alternative in accordance with the requirements of IFC PS-1, the following should be taken into account.

In recent years, significant positive changes have been observed in the legislation of the Republic of Uzbekistan, aimed both at improving the efficiency of energy industry enterprises, introducing energy-efficient technologies, and increasing the investment attractiveness of this sector of the economy as a whole.

It should be noted that within the framework of the "Concept of providing the Republic of Uzbekistan with electric energy for 2020-2030," it following is stipulated:

- increase of electricity production from 63.6 billion kWh to 120.8 kWh;
- reduction of natural gas consumption in the production of electric energy from 16.5 billion cubic meters to 12.1 billion cubic meters;
- reduction of electricity transmission losses to 2.35% and distribution losses to 6.5% (1.85 times less than in 2019).

Thus, the implementation of the project corresponds to the program for reforming the energy sector of the Republic of Uzbekistan.

Taking into account the above, the conclusion about the preference for considering the construction and operation of a combined cycle power plant compared to the "zero option" was made at the stage of preliminary environmental and social assessment (see 125-1105-SR), a detailed consideration of the "zero" option is not carried out.

2.2.2 Placement of the Facility

The construction of the project at the designated industrial site will be accompanied by:

- the need to get rights to new land plots, namely, to the site of the facility and infrastructure facilities;
- the seizure of land for the power plant site and infrastructure – roads, utilities, etc.;
- the need to organize a separate sanitary protection zone.
- Also, there was no alternative location for the planned project.

The selected project site is located at a considerable distance from residential communities, with the nearest settlement — Khalkobad Makhalla — situated approximately 1,000 meters away. The project area is physically separated by major transport infrastructure, as highways and railway lines run along its northern and western boundaries, effectively screening and isolating the site from nearby populated areas.

2.2.3 Technological Solutions

The project proposes a modern natural-gas combined-cycle power plant comprising one Siemens SGT5-4000F V10 gas turbine (365.3 MW) and one Siemens SST-700/900 steam turbine (185.3 MW), both manufactured in Germany, for a total installed capacity of about 551 MW. The plant will run year-round, 24/7 in base-load mode and is designed to generate approximately 4,000,000 MWh of electricity per year. In a combined-cycle design, the hot exhaust from the gas turbine is used to make steam that drives the steam turbine, so the same fuel produces additional electricity. As a result, the plant's overall electrical efficiency is about 61%, compared with roughly 35–40% for many older gas-only stations—meaning more power from the same amount of natural gas and lower emissions per unit of electricity. Combined-cycle plants can also be built more quickly than many other large thermal power stations. In short, the project delivers a reliable, continuous supply of electricity using proven

German-made equipment, while improving environmental performance through efficient fuel use and reduced air emissions per megawatt-hour.

Table 1: Main technical characteristics of a combined-cycle gas power plant

Characteristics	Description/value
Type of technology	Combined cycle gas turbine technology
The total area of the allocated plot for construction is	9.43 ha.
Number of combined cycle gas turbine plants (CCGT)	1 unit, capacity 356.3 MW
Type of CCGT	Gas Turbine (GT) series: "Siemens SGT5-4000F V10" – 1 unit. (manufacturer Germany)
Number of steam turbines (ST)	1 unit, capacity 193.7 MW
Type of steam turbine	Steam turbines (ST) of "Siemens SST-700/900" (manufacturer Germany) series.
CCGT ECE	61%
Power generation	550 MW
Number of working hours per year	7800 Hours/year
Fuel	Natural gas
Annual consumption of natural gas	748.800,0 thousand m3/year
Consumption of conventional fuel for electricity generation	1230 g.s.f/kWh
Type of condenser cooling	Water-cooled
Type of cooling tower	Cooling towers with artificial ventilation
Number of chimneys	2 units
The height of two chimneys of the CCGT	60 meters
Diameter of the chimney mouth	The bypass pipe is 7.0 meters and the boiler pipe of the heat exchanger is 7.2 meters

Based on the totality of the technical characteristics of the main (electricity generation) and auxiliary (water supply, treatment of polluted wastewater, organization of recycling cycles) equipment of the project considered during the ESIA, it can be concluded that the planned activities mainly involve the use of the best available technologies.

2.3 Status and land use

The construction of the combined-cycle power plant infrastructure resulted in economic displacement of the land user — the “Donabek Sano” farm. According to the survey findings, full compensation payments were made, and the farm has no outstanding claims or grievances related to the project. It should be noted that there was no physical displacement or resettlement of any persons.

The total area of the allocated plot for the construction of the combined cycle gas turbine power plant is 94.305,25 m2 or 9.43 ha, including: for the construction of the station 29.120,00 m2 or 2,912 ha; for hard surfaces (parking, roads and others) 28.630,25 m2 or 2.863 ha; for green spaces 28.630,25 m2 or 2.863 ha. Nowadays, the territory is under construction.

2.3.1. Water supply

The water supply of the planned power plant during operation consists of production, household, and drinking needs.

The power plant's water supply sources are:

- Pipeline of the Jizzakh reservoir that is controlled by the authority, for industrial water supply (**2.3% of the total annual water consumption at the reservoir**); for industrial water supply [1]

CENERGO has carried out extensive consultations with the Reservoir Authority to confirm that the project's planned water use will not adversely affect other existing water users.

Additionally, Cenergo assured the local government that the project's water usage would not negatively affect the water shareholders or local users. The Water Ministry, which is in charge of supervision and maintenance, installed two pipes on the reservoir. There is a spare pipe and an operational pipe. The pipe has a 140 cm diameter and no pump has been installed. Gravity drives the water flow process.

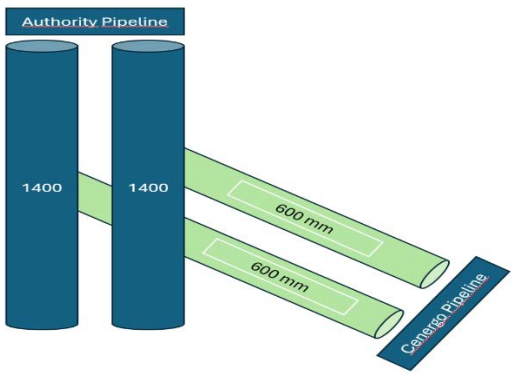
Cenergo will establish 2 pipes (60 cm) on the existing pipeline that is controlled by the authority. The pipes that will be established by Cenergo will not be related directly to the Jizzak Reservoir.

- Drilled wells - water supply for household and drinking needs during construction (permits obtained-31.07.2024-Jizzak Regional Water Authority).

Water consumption for the production needs of a power plant consists of water consumption:

- to recharge the steam-water cycle and the circulating cooling system;
- to purge cooling towers;
- on the need for additional water of the ChWT system.

[1] water supply pipeline alignment is not provided yet



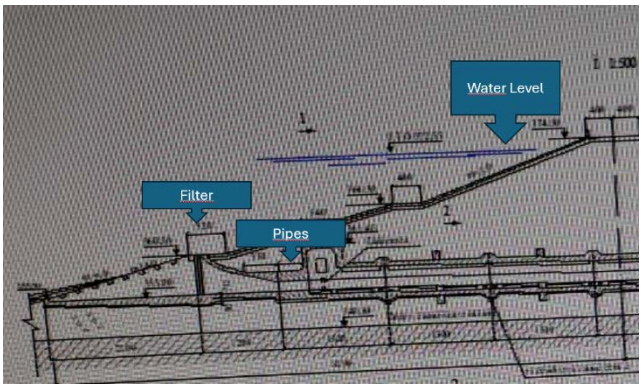


Figure 5: Jizzakh Reservoir and Water Supply Pipeline Design from Existing System

The power plant will use a closed, recirculating cooling system to protect and cool its equipment. Inside the plant, a clean water–ethylene glycol mix circulates in a sealed loop; its heat is then removed by a secondary loop that uses wet, fan-assisted cooling towers (CENK type, three fans per tower) with a built-in basin, pumps, corrosion-inhibitor dosing and monitoring. The towers' basin is filled with clarified (treated) industrial water. Cooled water is pumped to the steam-turbine condenser—where exhaust steam is turned back into water—and to other auxiliaries (such as lubricating-oil coolers); after absorbing heat, it returns to the towers to be cooled again. Because some water is lost through evaporation, tiny droplets are carried by the air and controlled purge ("blowdown") to prevent mineral build-up, the system is topped up from a raw-water tank. The towers are designed to cool water by about 10 °C (from ~34 °C down to ~24 °C), with typical losses of roughly 1.3% to evaporation and 0.2% to droplet carry-over. After the one-time initial fill, ongoing water use mainly replaces these losses and supplies related needs (chemical water treatment, raw-water tank recharge, fire-fighting and others). Based on investor data, average consumption is about 0.36 m³ per MW, which for a 550 MW plant is roughly 200 m³/hour (≈ 4,800 m³/day). Purge water is described as relatively clean and is planned to be discharged by pipeline to the nearby ditch.

2.3.2. Water disposal

The power plant will use a closed, recirculating cooling system. Inside the plant, a clean mixture of demineralized water and ethylene glycol circulates to protect equipment; its heat is removed by an external loop that uses wet, fan-assisted cooling towers supplied with clarified industrial water. To prevent mineral build-up on equipment, the towers are continuously "blown down" (purged) in small amounts; this purge water is similar in salinity to the incoming source water, and salinity will be routinely monitored in both the source and purge streams. Cooled circulating water is pumped mainly to the steam-turbine condenser (to turn exhaust steam back into water) and to auxiliary coolers (such as lubricating-oil coolers), then returns to the towers for re-cooling. Because some water is lost through evaporation, tiny droplets carry-over, and controlled blowdown, the system is topped up from a raw-water tank. After the one-time initial fill, ongoing water use mainly replaces these normal losses (for reference, investor assumptions indicate about 0.36 m³ of make-up water per MW, or roughly 200 m³/hour / ~4,800 m³/day at 550 MW

Purge water and non-oily cooling water (572.124 thousand m³/year) after the neutralization treatment process will flow to the plant's internal drainage and are planned for discharge to the nearby ditch, with applicable quality standards and permits.

Areas that could be contaminated with oil (for example, around transformers or oil systems) drain to an oil-containing water collection and treatment system. Water passes through an oil separator, recovered oil is sent to a licensed company for processing, and the treated water (meeting internal reuse criteria) is returned to the cooling system. In the event of an accidental release of oily water, the plant will isolate the flow and route it to the nearest appropriate treatment facility to prevent environmental harm.

Where water availability is constrained, an optional "Dry Flexicycle" configuration (air-cooled condenser connected to a radiator-type cooling circuit) can be used to drastically reduce total water consumption, making the plant suitable even for very arid regions. This dry-cooling option is well-suited to plants operating on a flexible base-load (gas or multi-fuel).

Domestic (sanitary) wastewater from staff facilities will be collected in sealed, waterproof tanks (cesspools) and hauled by contract to the nearest municipal treatment

works. Rainwater from roofs and paved areas will be collected in surface channels, used for on-site irrigation where practical, and then discharged to the ditch.

(Exact daily and annual wastewater volumes will be confirmed during detailed design and set out in the permitting documents.)

2.3.3. Heat and power supply

For heat and power, building heat will be provided by an on-site gas-fired boiler house (installed capacity about 22 MW), while the plant's electricity needs are met by its own generation.

2.3.4. Transport support

The site has good transport access: major highways run within a few hundred metres and a railway line is nearby. A short access road will be built from the M-39 highway, and vehicle maintenance will be carried out off-site at local service facilities to minimize on-site impacts. The "Jizzakh-Khawast" railway line runs in a northerly direction at a distance of 60 meters from the site under consideration.

It is planned to build an access road from the M39 highway to the facility about 90 meters away.

Vehicles will undergo periodic maintenance and repairs off-site at service stations near the project area.

2.4 Associated facilities

In accordance with the Project Agreement, all connection points and the construction of linear facilities must be provided by local government agencies, gas and water supply organizations, and the National electric networks.

According to the current situation of the associated facilities; the Electricity (**Pink** and **yellow** lines in the map): the local EIA study has been completed by the local authority (National Electric Networks of Uzbekistan) and EIA Approval was obtained on **15.09.2025**, lines with a length of approximately 8 and 10 km from the project area to the existing 220 kV overhead lines L-20-D and L-Z-C. – A draft scheme for the power output of a thermal power plant with possible connection options has been developed.

The water supply pipeline (**The Dark Blue** line in the map): the local EIA study has been completed by the local authority (Water Authority), and EIA Approval was obtained on **23.07.2025.**

The natural gas pipeline (**Turquoise** line in the map), the local EIA study has been completed by the local authority (TRANSGASENGINEERING LLC) and EIA Approval was obtained on **24.03. 2025**,

.A separate ESIA Addendum (independent from this ESIA) is being prepared on behalf of the project lenders, in accordance with the project financing agreement. This addendum aims to identify and address any gaps between the national EIA process conducted for regulatory approval in Uzbekistan and the environmental and social requirements of the lenders.

A gap analysis and a comparison table will be conducted regarding national EIAs (which will be the responsibility of local authorities) and international requirements (IFC standards—lenders' expectations) and will consider commitments that were mentioned in the EIA for associated facilities.

3 CONSULTATIONS WITH STAKEHOLDERS

3.1 Consultations and Disclosure of Information on ESIA

The identification of the Project's stakeholders was initiated at the stage of preparation of the Preliminary Environmental and Social Assessment Report (Scoping report) based on the results of site and adjacent territories inspection, desk research and initial consultations with regional and local authorities and local governments. In October 2021, a series of consultations were held with the following Project stakeholders:

- Khokimiyat of Jizzakh city;
- Khokimiyat of Sharaf Rashidov district, Jizzakh region;
- Department of Ecology and Environmental Protection of Jizzakh city and Sharaf Rashidov district;
- The Center for sanitary and epidemiological supervision of the city of Sharaf Rashidov district;
- Department of Cultural Heritage of Jizzakh region
- Employment Center of Sharaf Rashidov district;
- Makhallas - Gozgontepa, Chalkobad, Sukokli and Olmachi

Consultations are used to disclose information about the Project, explain the ESIA procedure, request baseline data, identify related projects, stakeholders and their interests, and understand concerns about the Project. The health and safety of the population are of concern, providing vulnerable and unprotected segments of the population with the opportunity to take advantage of the positive effects of the Project.

The Preliminary Environmental and Social Assessment Report (Annex 1) provides an overview of the dates, participants and key issues raised during the pre-consultation process. All these events were carried out in the form of personal meetings with the participation of representatives of the Customer and Project consultants.

The second phase of consultations took place in June 2024 during the baseline social research, in particular:

- Focus groups (women, youth, residents of the project area) with representatives of Gozgontepa, Chalkobad, Sukokli and Olmachi makhallas. These makhallas were identified at the stage of initial assessment of the project during consultations with the administrative bodies and responsible representatives of the Customer, as populated areas within 1000-2000 m from the borders of the complex (8 groups);
- In-depth interviews with farmers affected by the project, during construction (checking procedures for land alienation, compensation payments);

It was established that at the focus group stage concerns were raised about the health and safety of the population, employment, and providing vulnerable and unprotected groups with the opportunity to benefit from the positive effects of the Project.

Information disclosure measures implemented in April-July 2024 are presented in Table 2.

Table 2 Information Disclosure Measures

Measures	Result
Publication of the Report	Project documents are published in Russian and English. Disclosure was made on the website of the Customer, within ten days from the date of publication of the Scoping Report. The website provides contact information for the Customer's responsible representative (e-mail, address, telephone number). The Scoping Report has also been sent to the chairmen of makhalla committees in printed form.
Receiving comments and suggestions on the Scoping Report	The collection of comments and suggestions lasted until May 30, 2024. The customer has confirmed to the Consultant that there were no comments or suggestions from stakeholders during the disclosure period.
Publication of the SEP report	Project documents are published in Russian and English. Disclosure of information will be made on the Client's website within thirty days from the date of publication of the SEP report. The website provides contact information for the Customer's responsible representative (e-mail, address, telephone number).
Receiving comments and suggestions on the SEP report	The collection of comments and suggestions will last until September 2, 2024. The customer confirmed in writing to the Consultant, about the presence of comments or suggestions from stakeholders during the period of disclosure of the report.
Public presentation of the final results of the ESIA	The Client, with the assistance of the Consultant, provided information on the Project and the results of the ESIA, as well as proposed mitigation measures to mitigate potential negative impacts. At public presentations, a feedback box was installed and feedback forms were provided, allowing participants to comment and make suggestions, including anonymously.
In accordance with ESAP requirement 1.24, further engagement on the updated ESIA will be conducted.	Client will conduct additional public disclosure of the ESIA meetings in each affected project community ensuring the coverage of different groups, including identified vulnerable groups. During these meetings the communities shall be made aware of the availability of the Grievance Redress Mechanism, how it can be accessed and the process for grievance redress. Cenergo CLO and ES Manager: Between August 11 and August 28, 2025, additional public disclosure of the ESIA meetings was conducted in these mahallas. A total of 85 individuals participated in these meetings, including 37 women, as well as representatives of socially vulnerable families, in particular:

3.1.1 Consultations planned during the project implementation period

The SEP considers continuous interaction with stakeholders throughout the entire life cycle of the project, including the stages of construction and operation. A Stakeholder Engagement Plan (SEP) has been developed separately from the ESIA and will form an integral part of the Environmental and Social Management System (ESMS) to be implemented during both the construction and operational phases of the project.

Activities include consultations as needed with makhalla representatives, disclosure of information to the local population at key stages of the project, such as the start and end of construction, regular website and social media updates, SEP updates, and annual project reporting.

3.1.2 Programs for the involvement of the local population and the asset of the local population

Currently, the project promotes sustainable engagement with local communities to align their interests and turn the community into a direct stakeholder.

To build the potential for interaction with the local community, Cenergo LLC will be:

- Communicate the most complete information about the project activities on time to all Stakeholders.
- Contributing to the enhancement of the social capital of the affected communities through participation in the improvement of social infrastructure and support for socially vulnerable groups

3.2 Project Grievance Mechanism

As a general policy, Cenergo LLC will actively work to prevent the causes that lead to complaints by implementing mitigation measures (as defined in the ESIA and ESMP) and constantly interacting with community relations specialists.

Anyone will be able to file a project activity grievance if they believe that a practice has a negative impact on them, the community, the environment, or the quality of life. Stakeholders can also submit their comments and suggestions.

This Non-Technical Summary (NTS) will be publicly disclosed online and therefore must accurately reflect the current status of the project and its key processes.

Cenergo LLC has a functioning GRM that allows grievances to be submitted through various channels.

The following channels and methods are available for submitting complaints and suggestions:

- Telegram[2]-bot
- Grievance boxes
- Community Liaison Officer (CLO)
- Dissemination of information during meetings and public consultations with representatives of local communities
- Project website. www.cenergo.uz

Telegram-bot. Telegram is the most popular online messenger in Uzbekistan. Citizens actively use various features of this messenger, including bots created within it. Based on this, a special bot has been developed to allow users to submit grievances to the Company. Submissions made through the bot are monitored on a regular basis.

To facilitate the monitoring of grievances, a Telegram group has been established, which includes Company staff responsible for receiving and handling complaints. Every grievance submitted through the bot becomes accessible to the members of this group.

QR codes for accessing the Telegram bot are displayed in the following locations:

- on the premises of the Company

[2] *telegram* is the most popular messenger in Uzbekistan. Almost all citizens with internet access use this messenger for online communication.

- in the offices of the nearest *mahallas*
- in the contractor's office
- in the workers' accommodation camps

Below is the QR code for activating the telegram bot.

Figure 6: QR Code for Telegram GM

The bot allows submitting a grievance in one of the five main languages used by community members, Company personnel, and its contractors: Uzbek, Turkish, Chinese, English, and Russian.

Grievance boxes.

Grievance boxes are installed on the Company's premises and in the offices of mahalla committees. The CLO checks the grievance boxes daily. If a written inquiry or complaint is found, it is registered and reviewed in accordance with the established procedure.

Community Liaison Officer (CLO).

Employees of the Company, contractors, community representatives, and other individuals can contact the Community Liaison Officer (CLO) directly. The CLO's contact details are provided in brochures containing information about the GRM. These details are also known to the Company's employees, representatives of mahalla committees, members of the local community, and contractor staff.

Community Liaison Officer: Manzura Abdukarimova

e-mail: manzure.abdukarimova@cenergo.uz

tel.: +998 97 887 70 34

Dissemination of information during meetings and public consultations with representatives of local communities.

During meetings and public consultations with mahalla workers and local community representatives, information about the GRM is also disseminated. The CLO also contacts or meets with the leadership of all project mahallas twice a month to obtain information about verbal complaints received from mahalla residents, and to inform mahalla leaders of any updates or changes to the GRM, if applicable.

Project website.

There is a dedicated form on the company's website for submitting inquiries to the company. Inquiries and complaints received through this form are also reviewed by the authorized personnel of the company.

The website also provides the GENERGO's email address, as well as the addresses of its offices in Tashkent and the Jizzakh region. Below is the contact form available through the website.

3.2.1 Confidentiality and Anonymity

The Client will take measures to ensure confidentiality (upon request) and guarantee anonymity in the preparation of annual reports. Disclosure of personal data of individuals will be carried out only with their consent.

Investigations will be conducted with respect for the injured party and confidentiality. The injured party will have to recognize the need to disclose personal data in certain situations, and the Customer's representatives will identify such situations and request appropriate consent to continue the investigation and resolve the situation.

3.2.2 Complaint Reporting and Resolution

The Grievance Redress Mechanism, detailed in the SEP, is a formalized tool for receiving, recognizing, investigating and addressing complaints, grievances and concerns from affected communities and individuals, as well as other stakeholders.

The purpose of this mechanism is to offer predictable, transparent and credible processes for all parties that produce relatively inexpensive, fair and efficient results. It also aims to ensure a gender sensitive, inclusive and culturally appropriate process that will be accessible to all members of the community.

Effective stakeholder engagement aims to build trust and maintain a constructive relationship with communities and stakeholders, foster a positive perception of the Project and contribute to its successful development and implementation.

3.2.3 Appeals handling and reporting

The Client has its own Internet resource https://cengizenerji.com.tr/?lang=en / and a separate page for disclosing information about the Project https://cenergo.uz/environment-and-social/, as well as a tool through which the population can file complaints and appeals. Complaints and appeals can also be sent directly to a Community Liaison Officer (CLO). The CLO's contact details are listed in Table 3

Table 3 Community Liaison Officer

Name-Surname: Manzure ABDUKARIMOVA (Female)
Tel: +998902646844
E-mail: Manzure.ABDUKARIMOVA@cenergo.uz

The main stages of work with complaints and appeals include: receiving and registering, categorizing, investigating, preparing a response, demands/appeals, providing a response and closing a complaint/appeal.

Receipt/registration: Complaints and appeals will be recorded in a formal complaint registration system maintained by the CLO.

Complaints can be submitted in writing by filling out a special form (provided in the SEP Annex), by contacting the CLO directly, through a local government representative, or electronically through the Customer website.

CLO will report on the activities of the treatment of appeals monthly in the preparatory stage, weekly during construction and twice a year during the operational phase, excluding personal data of applicants in order to protect confidential information and guarantee anonymity.

This procedure will be free of charge and excludes any prosecution of persons affected by the Project or other stakeholders. The proposed procedure for dealing with appeals is schematically presented in the Annex to the SEP.

Manzure ABDUKARIMOVA has been appointed responsible for reviewing appeals from citizens and other stakeholders. Comments and requests should be sent to the address above.

4 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

4.1 Environmental Impacts

4.1.1 Impact on Atmospheric Air Quality

Construction phase. The main sources of air emissions will be construction machinery and site activities—welding and painting, concrete/mortar works, earth-moving (bulldozers, excavators), lifting with truck/crawler cranes, and traffic by construction vehicles and forklifts. Together they are estimated to emit about 15.435 tons per year across 17 pollutant types, with a peak release rate of about 5,584 g/s. Air-dispersion modelling covered a 4.2 × 7.0 km area that includes the plant's sanitary protection zone (SPZ) and the nearest homes in Sharaf Rashidov district, using a 100 m calculation grid and 19 residential receptor points at 2 m height (breathing level). Results: in residential areas, no exceedances of Uzbekistan's maximum permissible concentrations (MPCs) are predicted during construction.

Operation phase. The plant's main equipment is one Siemens SGT5-4000F V10 gas turbine (365.3 MW) and one Siemens SST-700/900 steam turbine (185.3 MW). Additionally, smaller emission sources include a diesel generator, hot-water boiler, welding/metalworking stations, oil and fuel storage tanks, an express laboratory, and battery-charging stations. According to the project's Environmental Impact Statement, emissions will include 20 pollutant types in total, with a maximum short-term emission of 92.3693 g/s and annual (gross) emissions of 3,046.52 tons/year. Results: predicted concentrations at the SPZ boundary and in nearby residential areas remain below national air-quality limits; the overall increase in ambient pollution is small (less than 0.1 MPC).

Conclusion. With modern equipment, good construction practices, and compliance monitoring, the project is expected to meet air-quality standards in nearby residential areas during both construction and operation.

4.1.2 Assessment of Climate Change

Emissions of greenhouse gases determine the impact on the atmosphere. In accordance with the global standard for accounting for greenhouse gas (GHG) emissions, the Greenhouse Gas Protocol, 3 GHG emissions of the following "levels" can be accounted for/scope:

- Level 1 (Scope 1) – direct GHG emissions produced by an organization: as applied to an enterprise. – emissions associated with fuel combustion, with freon emissions.
- Level 2 (Scope 2) – indirect GHG emissions associated with electricity purchased from third-party producers.
- Level 3 (Scope 3) [4] – indirect emissions associated with the extraction and production of purchased materials, fuel and services, including transportation on vehicles not owned by the enterprise. Emissions of this category are the result of the company's activities but originate from sources that do not belong to it, and, accordingly, are not controlled by the enterprise. Scope 3 is optional for accounting

[4] It was not considered in the framework of this study. In the future, it is advisable to assess level 3 emissions based on an analysis of the procurement and supply chains, a set of activities (based on the impact on the business and the amount of reliable information).

and reporting5, but it allows the company to become one of the leaders in the field of GHG management.

The quantitative determination of GHG emissions is carried out by the calculation method for individual sources, groups of sources or the organization as a whole using the formula:

Eghg = EF * FC, where:

- E_{ghg} - emissions of CO_2 (and other GHGs), t CO_2;
- FC - fuel consumption, thousand ^{m3}, (for level 1), volume of consumed (purchased) electricity, MWh (for level 2);
- EF is the coefficient of CO2 emissions from fuel combustion, tons of CO2/thousand m3 of gas (for level 1), from purchased electricity, tons of CO2/MWh.

The calculation uses data provided by the Customer: consumption of natural gas, motor fuels, freons, electricity consumption, and other design data.

The results of the assessment of greenhouse gas emissions as a result of the plant's activities are presented in table 4.

Table 4 Greenhouse gas emissions from the company's activities, thousand tons of CO2 equivalent/year [2, 3]

Characteristics	Emissions of 1st and 2ng coverage
Emissions related to the combined cycle power plant construction project	1430

Greenhouse gas emissions generated as a result of the company's activities are significantly lower than the industry average due to the use of the latest combined cycle gas plant for electricity generation. The construction time of a combined-cycle gas power plant is much shorter than the construction time of traditional thermal power plants of other types. At the same time, the transition to a combined-cycle gas cycle makes it possible to improve the environmental performance of the plant and significantly reduce the level of harmful emissions into the atmosphere.

The total electrical efficiency of the proposed CCGT is 61%. The CCGT in question belongs to a relatively new type of power plant powered by natural gas. Combined-cycle gas units are designed to produce the maximum amount of electricity (primary and secondary from hot exhaust gases).

Since the estimated emissions of coverages 1 and 2 exceed 100,000 tons of CO2 equivalent per year, the company should consider ways to further reduce the formation of greenhouse gases generated from the company's activities.

In line with the Equator Principles (EP IV), the project has also identified and assessed key climate-related risks, including:

Physical risks, such as potential impacts from extreme temperatures, flooding, or water scarcity that could affect plant operations and cooling systems.

[5] A joint project of the World Resources Institute and the World Business Council for Sustainable Development. https://ghgprotocol.org/

Transition risks, including possible future tightening of emissions regulations, carbon pricing mechanisms, and shifts in energy market dynamics toward low-carbon alternatives, which may influence operational and financial performance.

These risks are being managed through the project's Environmental and Social Management System (ESMS), which includes adaptive design measures, monitoring programs, and ongoing engagement with lenders and regulators to ensure alignment with both national standards and international best practices.

In accordance with the Equator Principles IV (EP IV), since the project's annual greenhouse gas (GHG) emissions are expected to exceed 100,000 tonnes of CO_2 equivalent, the Project Company will be required to publicly disclose its GHG emissions on an annual basis.

This reporting will include both Scope 1 (direct) and Scope 2 (indirect) emissions, along with any mitigation actions or efficiency improvements undertaken to reduce the project's carbon footprint. The disclosure will form part of the company's ongoing commitment to transparency, environmental accountability, and alignment with international sustainability standards.

4.1.3 Acoustic Effects

The main sources of noise at the construction stage of the enterprise will be construction machines, auxiliary mechanisms and vehicles.

The peculiarity of the considered noise sources is their operation in an open space with constant movement on the construction site, while each piece of equipment can operate in different operating modes, which causes the variability, both in time and in space, of the sound energy emitted into the environment. Thus, the noise during the operation of machinery and mechanisms will be characterized by non-constant sound levels in time.

External noise sources include:

- earth-moving equipment (bulldozers, excavators);
- assembly equipment (truck cranes, caterpillar cranes);
- mobile air compressors;
- construction machines and vehicles, forklifts
- automobile and rail transport (delivery of construction materials, equipment and construction waste).

To assess the impact of noise, the noise level from noise sources from construction machinery and mechanisms was simulated. The solutions of the analog object, the construction stage, were used as initial data.

The calculation area measuring 4760 m by 6450 m, covering the adjacent residential development, was adopted with a step of the calculation grid of 50 m, height of 1.5 m.

Taking into account the location of noise sources, their acoustic characteristics, radiation direction, as well as the planning situation and regulatory requirements, the design points RT-001 – RT-033, 050, 051, located in residential areas adjacent to an industrial site, railway tracks and a highway, were selected.

The results of the calculated assessment show that the noise level at the design points and at the border of the SPZ of the enterprise during the construction period complies with the national sanitary standards SanPiN 0267- 09 [2] and WHO Recommendations [3], which indicates compliance with the requirements of the IFC [4].

The following significant noise sources were taken into account when predicting the acoustic situation:

- sources of technological noise penetrating from the premises to the territory;
- sources of ventilation noise emitted by the open ends of the ducts;
- sources of traffic noise, determined by the movement of road and rail transport near the territory of the enterprise.

The results of the calculated assessment show that the noise level at the settlement points and at the border of the terminal SPZ at the operational stage meets the selected criteria: national sanitary standards (SanR&N 0267-09 [2]) and WHO Recommendations [3], which indicates compliance with the requirements of the IFC [4], taking into account the implementation of noise protection measures. This is primarily due to the distance separation between the project site and local receptors

4.1.4 Impacts associated with waste generation

During construction (including the workers' camp(if needed)) the project will generate typical site wastes such as leftover building materials (concrete, brick, crushed stone, cement, timber, bitumen, insulation, paints and varnishes), excavated soils (including soil that may be contaminated with petroleum or other hydrocarbons), mixed construction waste, electrode stubs, ferrous scrap, cleaning rags, worn personal protective clothing, food waste, household refuse and sweeping waste; in total this is estimated at about 22,684.72 t per year across nine categories, dominated by removal of the soil and vegetation layer

To manage these streams the project will prepare and implement a Waste Management Plan (WMP) as part of its construction and operational ESMPs, applying the waste hierarchy (prevention, reduction, reuse, recycling, recovery, disposal), segregating waste at source with clear labelling, and providing compliant temporary storage (covered, secure areas; impermeable, bunded pads for hazardous wastes; spill kits and compatibility controls).

Clean excavated soil will be reused on site for backfilling and landscaping where suitable; ferrous scrap will be collected for recycling; food and household waste will be stored in sealed, pest-proof containers and removed frequently; oily or contaminated soil, rags, electrode stubs and chemical packaging will be kept in closed, labelled containers and transferred off-site as hazardous waste. All off-site transport, treatment and final disposal will be undertaken only by government-licensed waste management service providers under formal contracts that specify permits, acceptance criteria and emergency response. The project will use a manifest/chain-of-custody system (including weighbridge tickets and certificates of recycling/disposal), maintain a site waste register, and report performance monthly; staff will receive induction and refresher training on segregation, storage and spill response; no open burning or uncontrolled dumping will be permitted; regular housekeeping, litter control and vector management will be implemented at the camp (if needed) and work fronts; spill prevention and response (bunding of fuels/chemicals, readily available absorbents, drills) will be maintained; KPIs such as recycling rate, hazardous-waste tonnage and training coverage will be tracked and reviewed; a community grievance mechanism will be available for any waste-related complaints; and at demobilisation the contractor will remove all temporary waste facilities, clear remaining wastes and verify the site is clean before hand-over.

During the operational phase, the enterprise is expected to generate approximately 127 tons of waste per year, comprising 21 different waste types, as outlined in the draft Environmental Management System (EMS).

The majority of the waste will consist of low- and medium-hazard materials, with Class 4 and Class 5 wastes representing the largest share. Specifically, the waste composition includes:

- 18.22 tons/year of Class 2 (high-hazard) waste (6 types);

- 0.31 tons/year of Class 3 (moderate-hazard) waste (1 type);
- 94.42 tons/year of Class 4 (low-hazard) waste (8 types); and
- 13.38 tons/year of Class 5 (non-hazardous) waste (6 types).

Waste will be managed in accordance with the approved EMS, following national regulations and international best practices for segregation, temporary storage, transfer, and safe disposal to minimize environmental impact.

4.1.5 Impact on surface waters

During construction work, water is used to prepare mortar, irrigate the territory to reduce dust, and for the household needs of builders. Water supply during construction works will be carried out at the expense of the borehole (wells with obtained permissions - Jizzakh Regional Hydrogeology Station 31.04.2024) and the imported water supply. Imported water tanks will be filled from the sources of the water supply wells.

Imported bottled water, purchased independently by a construction contractor, is partially used for the drinking needs of builders.

During the construction of the power plant, about 650 builders and employees (50 people, including ETP) will work on the territory of the construction site.

The construction period is 36 months, about 950 days per year.

During the construction of a combined–cycle power plant, the water consumption rate per day is determined according to КМК[6] 2.04.01.98 g, where it is 25 liters per worker and 12 liters for ETP.

The total estimated water consumption during the construction of the power plant will be 79.80 m3/day. or 44.133,0 m3/year, of which:

- for production needs - 20.56 m3/day. or 2.540,0 m3/year;
- for household and drinking needs – 59,24 m3/day. or 41.593,0 m3/year.

Industrial effluents are not formed during construction. The water used for the preparation of mortar, irrigation of the territory in order to reduce dusting is irretrievably lost.

Household wastewater generated during construction is planned to be sent to a temporarily installed storage tank (sewage tank) with subsequent export to the nearest treatment facilities.

The total wastewater disposal (effluents) of household effluents during the construction of a combined-cycle power plant will amount to 59,24 m3/day. or 41.593,0 m3/year (excluding water consumption for production needs (irrevocable) and irrigation of the territory).

According to the data provided by the Customer, the production water consumption is formed conditionally based on the calculation of electricity generation per 1 MW of about 0,36 m3 of water.

The approximate water consumption is calculated taking into account the water consumption per 1 MW - about 0,36 m3 (water intake for the chemical water treatment system, recharge of the raw water tank, fire system and others).

With the production capacity of the power plant - 550 MW/h, the hourly water consumption will be: 550.0 x 0.36 = 200.0 m3/hour, 4800 m3/day.

[6] Building codes and regulations applicable on the territory of the Republic of Uzbekistan

CENERGO conducted consultations with the Jizzakh Lake Authority to confirm that the project's planned water abstraction from the lake will not adversely impact other users, including irrigation systems or surrounding communities that rely on the same water source.

Additionally, Cenergo assured the local government that the project's water usage would not negatively affect the water shareholders or local usersThen, further water intake for the needs of chemical water purification (primary sand filter, demineralization site, chemical preparation site, primary and secondary reverse osmosis and others) for production purposes will amount to (4.800 x 350) 1.680.000, m3/year or 1.680,0 thousand m3/year.

Calculations of industrial water consumption after chemical water treatment:

- for the needs of cooling, recharge of the steam–water cycle of the cooling tower – 80,5 m3/ hour, 1,932 thousand m3 / day. or 676,200 thousand m3/year;
- for the needs of a gas turbine (recharge, purge, flushing, cooling); – 35,5 m3/hour, 0,852 thousand m3/day. or 298,2 thousand m3/year;
- to recharge technologies with process water – 40.0 m3/hour, 0.960 thousand m3 /day. or 336.0 thousand m3/year;
- other consumption to the production needs (water treatment, preparation of solutions, etc.) – 44.0 m3/hour, 1,056 thousand m3/day. or 369.6 thousand m3/year.

Then, the total water consumption for the production needs of the power plant will amount to 200.0 m3/hour, 4,800 m3/day. or 1680,0 thousand m3/year.

The total water consumption (water consumption) for household, drinking and irrigation needs of the power plant is 174,665 m3/day. or 21.072,95 m3/year.

Additionally, the project design includes a treated effluent discharge point that will release into an existing drainage ditch located near the south-eastern corner of the project site.

The nearest surface water body to the designated construction site is a drainage ditch located approximately 11.5 meters to the east. The ditch has a maximum flow capacity of 20–25 cubic meters of water per minute, depending on the season, and an average depth of 1–2 meters at normal water levels. During the autumn and winter months, the ditch often becomes partially or completely dry, with water levels typically much lower than this depth.

As a result, no adverse environmental effects are anticipated as a result of the released water.

4.1.6 Impact on soil cover

The impact on the soil cover of the enterprise site is predicted during leveling and planning work on the construction site.

Airborne contamination of soils in areas adjacent to the enterprise is also not predicted due to the incomparable levels of impact of natural factors (natural transfer of suspended matter with wind currents) and levels of impact of sources associated with construction work (ground excavation, earthworks, etc.).

Contamination of soil-forming rocks can only be associated with improper practice of temporary accumulation of waste, storage and handling of fuels and lubricants, spills of fuels and lubricants, use of faulty construction machinery, equipment and vehicles.

The impact on the soil cover of the power plant territory is not predicted due to its future absence (the territory will be concreted).

The only type of impact on the soil cover characteristic of the stage of operation of the enterprise is aerogenic pollution of the territory adjacent to the power plant.

The intensity of this indirect impact is determined by airborne contamination of soils, associated not so much with the operation of the enterprise, but with the influence of other municipal and industrial facilities and transport, and with the influence of natural wind transfer of suspended matter.

Pollution of soil-forming rocks, as at the construction stage, at the operational stage can only be associated with improper practices of temporary accumulation of waste, storage and handling of fuels and lubricants, spills of fuels and lubricants, the use of faulty equipment, machinery and vehicles.

Areas designated for the storage or handling of hazardous materials—including fuels and chemicals—will be equipped with secondary containment systems and impermeable surfaces to prevent any potential leakage or seepage into surrounding soils.

4.1.7 Impact on the flora

The Project Area contains only modified habitats, which according to the IUCN Habitats Classification Scheme (Version 3.1) belong to type 14 Artificial – Terrestrial (Anthropogenic terrestrial habitats), subtypes 14.1 Arable Land (arable land), 14.2 Pastureland (pastures) and 14.4 Rural Gardens (rural gardens) and type 15 Artificial – Aquatic (Anthropogenic aquatic habitats), subtype 15.9 Canals and Drainage Channels, Ditches (Irrigation and drainage channels, ditches). There are no natural habitats in the Project area. At the time of the survey, construction work was underway on the site, and vegetation had already been destroyed throughout the western half of the site, and several dirt roads run through the central and eastern parts, along which heavy machinery continuously moves.

As a result of botanical research, it was established that the landscapes and vegetation cover of the Project area were completely transformed as a result of human economic activity, and the territory contains transformed habitats (agricultural irrigated lands, residential buildings, farms, infrastructure) with communities of cultural and weed synanthropic vegetation. There are no natural biotopes in the Project area. The species composition of the plants of the Project area is represented by species widely distributed in the developed plains and foothill regions of Uzbekistan. A significant proportion in the species composition and a high abundance in the vegetation cover of synanthropic, weedy plants, including adventitious ones, is an indicator of the anthropogenic transformation of the ecosystems of the studied territory. The survey showed that there are no vulnerable, rare and endemic plant species and critical habitats in the Project area that meet the criteria set out in Performance Standard 6 of IFC.

The temporary areas, such as the custom zone (figure 1), will be restored after the construction activities to be used again. The restoration plan and requirements will be done by a professional consultant.

4.1.8 Impact on terrestrial wildlife

As a result of zoological research, it was established that in the area of the planned activity, transformed habitats predominate (irrigated agricultural lands, settlements, industrial enterprises, infrastructure facilities).

The fauna of terrestrial vertebrates has undergone significant changes and is currently represented by a rather meager variety and mainly species capable of coexisting with humans – synanthropic species such as house mouse, gray rat, common pipistrelle, myna, magpie, etc.

Birds are represented by a wide variety due to the proximity of the project area to the Jizzakh reservoir, which attracts a large number of birds both during migration and for wintering.

During the surveys of the planned area, we selected 15 observation points that most characterize the composition of the local fauna of terrestrial vertebrates. 45 species of terrestrial vertebrates have been recorded in the studied territories, of which 2 species belong to amphibians, 5 species to reptiles, 40 species to birds, 3 species to mammals. Of these, 1 bird species (white stork Ciconia ciconia) is included in the national Red Book

It has been established that the existing impact on the animal world of the territory is associated mainly with population growth, expansion of settlements, and agriculture.

The project site is located on former agricultural land, with existing infrastructure impacts to the north and west caused by highways and railway lines, which have already partially restricted wildlife movement in the area. According to the findings of the detailed habitat survey, no Critical Habitat trigger species were identified within or near the project site. Consequently, the project is expected to have a relatively low impact on local fauna, and no specific fauna-related mitigation measures are deemed necessary.

4.1.9 Impact on ecosystem services

During the biodiversity baseline studies (August and September 2025), all details of the ecosystem services were elaborated and assessed by the biodiversity experts who are members of Hacettepe University in Türkiye.

Aquatic Ecosystem Findings

Hydrobiological surveys of the Jizzakh Reservoir and its irrigation canals show a generally healthy aquatic habitat with high species diversity. Researchers recorded ~162 algae, 36 zooplankton, 50 benthic macroinvertebrates, and 22 fish species, indicating a rich but typical freshwater community. Water quality at sampling sites appeared good, and importantly no endemic or rare aquatic species were found – the algae, plankton, invertebrates, and fish present are all widespread cosmopolitan species with no special conservation status. Several invasive alien fish (eight species) have been identified, introduced historically via aquaculture. These include the Silver Carp (Hypophthalmichthys molitrix, globally Near Threatened) and the Prussian Carp (Carassius gibelio), as well as Mosquitofish, which now thrive in the reservoir–canal system. Such invasives can out-compete native fish and alter food webs, though no native fish of high conservation value occur in the area. Benthic fauna is similarly common; an invasive Asian clam (Corbicula fluminalis, listed Vulnerable in Uzbekistan) was noted, but no other rare aquatic invertebrates were observed. The presence of certain bloom-forming algae (e.g. Microcystis) and temperature-sensitive mollusks signals that any changes in water flow, nutrient levels, or temperature from the plant's cooling water system could affect water quality. In particular, warmer or nutrient-rich discharges could trigger algal blooms or stress aquatic life. Overall, baseline studies indicate a resilient aquatic ecosystem of mostly common species, which will require careful management of water use and discharges to avoid degradation.

Terrestrial Fauna Findings

Field studies of amphibians, reptiles, birds, and mammals around the project site documented a typical assemblage of species, mostly common to the region. Two amphibians – the Green Toad (Bufotes viridis) and Marsh Frog (Pelophylax ridibundus) – were observed (and an Oriental treefrog is likely present); all are categorized as Least Concern on the IUCN Red List. Among reptiles, a desert lizard (Ablepharus deserti) was found, and others are expected (e.g. Greek Tortoise, Testudo graeca). The Greek Tortoise is notable as it is

Vulnerable (VU) and internationally protected, underscoring the area's sensitivity for reptiles. The bird community is diverse – over 40 species were recorded – predominantly waterfowl, waders, and farmland birds. Most are Least Concern, but the Northern Lapwing (Vanellus vanellus) stands out as Near Threatened (NT), indicating regional conservation concern. The reservoir and wetlands attract ducks, herons, grebes, and other waterbirds that are protected under international conventions, highlighting the ecological importance of these wetlands as feeding and stopover habitat. Mammals in the area include common species like the European Hare (Lepus europaeus) and Red Fox (Vulpes vulpes), observed during surveys. Additionally, evidence from literature and local records suggests small rodents (voles, gerbils), insectivores (e.g. Long-eared Hedgehog, Hemiechinus auritus), and carnivores like the Golden Jackal (Canis aureus) and Steppe Polecat (Mustela eversmanii) utilize the area. A few bat species are also present (e.g. Myotis, Pipistrellus, and the Greater Horseshoe Bat Rhinolophus ferrumequinum). Notably, several of these mammals – the hedgehog, ground squirrel (Spermophilus fulvus), polecat, and horseshoe bat – are listed as protected in Uzbekistan's Red Data Book, though they are not globally threatened. These fauna not only include species of conservation concern but also perform valuable ecosystem functions. For example, amphibians and bats naturally regulate insect populations, helping control agricultural pests, while predators like foxes and birds of prey keep rodent numbers in check. The presence of a balanced assemblage of herbivores, insectivores, and predators indicates an intact food web, contributing to pest control and overall ecosystem health.

Flora and Habitat Conditions

The flora survey found that the project area is largely a disturbed agro-ecosystem with few natural vegetation features. Approximately 80 plant species were recorded in the study area, the majority being common wild grasses and herbs, along with some cultivated crop species and ruderal weeds typical of farmland. No endemic, rare, or protected plant species were identified; in other words, none of the vegetation is listed on national or international Red Lists. This absence of sensitive flora reflects the high level of habitat modification – the site has experienced significant long-term human use (cultivation, grazing, infrastructure). Most of the land is actively farmed or recently developed, indicating a degree of habitat degradation and low naturalness. Only a small patch on the western edge of the reservoir retains characteristics of natural habitat (a semi-natural meadow used for livestock grazing), and importantly this particular patch lies outside the direct project footprint. Overall, the vegetation in the project footprint is dominated by cosmopolitan species and agricultural land cover, with low ecological sensitivity and no protected plant communities. However, maintaining remaining green cover and preventing further unnecessary vegetation loss will be important to avoid erosion and to support any wildlife using these areas.

Ecosystem Services

The project area's ecosystems currently provide several valuable services to local communities and the environment. Key provisioning services include the supply of water for irrigation and livestock: the reservoir and connected canals are an important water source sustaining the productivity of surrounding farmlands. There is also potential for local fishery resources, although fishing is restricted at the reservoir. Regulating services are notably provided by the wetlands and species present. For example, marshes and reed-beds help filter water and regulate water quality, and vegetated soils around the site aid in controlling erosion and maintaining soil stability. Native fauna contribute to natural pest control – amphibians and bats feed on insects, helping to reduce agricultural pests and thereby supporting crop health without pesticides. These natural regulatory functions are crucial for local agriculture and quality of life. As supporting services, the mosaic of wet meadows, canals, and fields creates habitat for wildlife, serving as breeding, foraging, and migratory stopover areas for numerous species. In particular, the reservoir's wetlands support food and refuge for waterbirds and

amphibians, underpinning the region's biodiversity. Lastly, the area holds cultural and recreational value. The presence of diverse waterbirds and a scenic wetland landscape offers opportunities for birdwatching, nature tourism, and education about local wildlife. While not formally a park, the natural elements contribute to the community's natural heritage and sense of place. In summary, these ecosystems provide provisioning (water), regulating (water purification, pest control), supporting (habitat), and cultural (recreation/nature appreciation) services, all of which are considered in project planning to ensure they are sustained or enhanced.

Mitigation and Monitoring Measures

Aquatic Biodiversity: The project includes targeted measures to mitigate impacts on aquatic ecosystems. Construction works in or near water will be timed to avoid the peak fish breeding season (approximately April–June), preventing disturbance to spawning periods. If in-stream work or pipeline crossings are necessary, the plan is to temporarily divert flow and work "in the dry", then restore the channel to its natural state to minimize turbidity and habitat loss. Existing macrophyte-rich bank areas (which serve as fish spawning and nursery habitat) will be left intact as much as possible; any disturbance to river or canal banks will be followed by rehabilitation with native vegetation to rapidly restore habitat and prevent erosion. In operation, the cooling water intake will be designed with a fish-friendly system – a wide, low-velocity intake and fine mesh screens – to significantly reduce entrainment or impingement of fish, plankton, and other aquatic organisms. Similarly, discharge structures will dissipate flow to avoid scouring habitats. Water quality safeguards (such as treatment of any process water if needed) will be in place to prevent pollution. These measures, alongside restrictions on harmful chemical use near waterways, aim to protect aquatic life and maintain the current good water quality.

Terrestrial Biodiversity: A suite of measures will protect fauna and habitats on land during construction and operation. The project footprint will be kept as compact as possible, with a buffer zone (≥100 m) around sensitive wetlands and reedbeds so that core habitat (e.g. wet meadows by the reservoir) is untouched. Critical habitats like the reservoir shore will thus remain available for wildlife. To prevent animal injuries or mortalities, the site will be secured: temporary fencing will deter fauna from entering active work areas, and any open trenches or pits will have sloped escape ramps so that small animals can climb out if they fall in. Wildlife rescue procedures are in place – for example, if any tortoises or other slow-moving reptiles are found in the construction zone, qualified biologists will relocate them to safe nearby habitat before work proceeds. Habitat connectivity will be maintained by retaining corridor vegetation (field edges, hedgerows) so animals can still move across the landscape. The timing of activities will also reduce impacts: during the bird breeding season (approx. April–July), pre-construction nest surveys will be conducted and any active nests will trigger a no-work buffer until the young have fledged. Similarly, to avoid disturbance, the heaviest noise and machinery use will be scheduled outside of peak nesting and breeding periods. Lighting at night will be minimized and directed away from natural areas to prevent disorienting nocturnal species (like bats and migratory birds), and the use of pesticides or harmful chemicals on site will be strictly limited to protect insect populations (which are food for many species). During operation, key habitats will be managed: for instance, reservoir water levels will be kept stable (avoiding sudden drawdowns that could dry out wetlands) to preserve amphibian and bird habitat. Overall, these mitigation measures are designed to avoid or reduce habitat loss, wildlife disturbance, and pollution, ensuring the terrestrial ecosystem remains functional.

Monitoring Program: To ensure the effectiveness of these measures, a robust biodiversity monitoring plan will be implemented for both aquatic and terrestrial resources. Aquatic monitoring (water quality and biology) will occur at least twice a year – typically in spring and autumn – to capture seasonal variations in plankton, fish, and habitat conditions.

This will help detect any changes in the aquatic ecosystem (e.g. algal bloom trends or fish population shifts) early. On the terrestrial side, annual or semi-annual wildlife surveys will be conducted: amphibian call counts and wetland surveys in spring, reptile and bird surveys (e.g. breeding bird point counts) during appropriate seasons, and camera trapping for mammals year-round. Particular attention will be given to indicator or sensitive species (such as tortoises, lapwings, bats) to verify they remain unharmed. The monitoring results will be reported to regulators and used in an adaptive management process – if unexpected impacts are observed, the project will adjust its mitigation measures accordingly. This ongoing monitoring and reporting ensure that biodiversity protection is a continuous commitment throughout construction and operation, not a one-time effort.

IFC PS6 Compliance and Biodiversity Status

In line with IFC Performance Standard 6 (PS6) on biodiversity conservation, a Critical Habitat Assessment was performed. The findings confirm that the project site does not qualify as Critical Habitat at the global or regional level. No species listed as Critically Endangered or Endangered (IUCN) are present, and although a few species of conservation concern are noted (e.g. the VU Greek Tortoise and NT Northern Lapwing), their presence is not enough to trigger a Critical Habitat designation under IFC criteria. However, the area is recognized to contain Priority Biodiversity Features (PBF). These are significant biodiversity values of regional or national importance that merit special attention. In this case, the PBFs include the assemblage of Vulnerable and Near-Threatened species (such as Testudo graeca and Vanellus vanellus), several nationally protected mammals (e.g. hedgehog, ground squirrel, steppe polecat, and a rare bat) that are present in the broader area, and the wetland habitats (reservoir and wet meadows) that serve as vital foraging and stopover sites for migratory waterbirds. Even certain ecosystem processes like natural pest control by amphibians and bats are noted as contributing to these priority features. While none of these triggers global critical habitat status, they do require the project to apply robust mitigation and management measures to align with PS6. In other words, under IFC PS6 the site's biodiversity must be safeguarded through species- and habitat-specific conservation actions and ongoing monitoring, commensurate with its PBF designation. The project has incorporated these requirements into its Biodiversity Management Plan, as summarized above. Compliance with IFC PS6 is therefore achieved by avoiding impacts to critical biodiversity values and actively managing the priority features present. With the planned mitigation and monitoring fully implemented, the residual impacts on both aquatic and terrestrial ecosystems are expected to remain manageable and acceptable at the local scale. In conclusion, the 550 MW Jizzakh Power Plant project is being developed in a manner that meets international biodiversity standards (IFC PS6) – the site is not a Critical Habitat, but its identified Priority Biodiversity Features will be protected and monitored to ensure no net loss of biodiversity values and the continued provision of essential ecosystem services.

4.2 Social Impact

4.2.1 Impact on the labor market

During peak construction, the project will employ about 650 people working mainly on shifts, housed in a contractor-run camp (if needed) or commuting from nearby Jizzakh, with a mix of locally hired workers from Sharaf-Rashidov district and Jizzakh city (especially for entry-level roles) and qualified specialists brought in from other regions of Uzbekistan and, where necessary, from abroad (e.g., China). This short-term labour demand is expected to have a positive, temporary effect on the district labour market.

The plant is planned to start operation in 2027, at which point around 70 permanent jobs will be created—about 65 in operations and maintenance and 5 in management and specialist

roles—with full staffing reached that same year. As with construction, the operator will prioritise local candidates for production and maintenance posts where the required technical education is available.

As of January 2024, the average monthly salary in Sharaf-Rashidov district was approximately 2,743,000 UZS; by attracting higher-skilled roles and specialist contractors, the project is expected to nudge wage levels upward toward those in Jizzakh city. Beyond direct jobs, the project should stimulate indirect employment across suppliers and service providers and create induced benefits through employee spending: using an international employment multiplier cited for power plants (about 14.7 jobs in related industries per direct job), the scheme could support more than 1,000 additional jobs in the wider economy, mainly in the energy and transport value chains, while typical service-sector linkages (around three jobs per industrial job) suggest roughly 210 extra positions in catering, retail, accommodation and other local services.

To ensure communities can access these opportunities, the developer and contractor will run transparent local recruitment in Uzbek and Russian through employment centres, hokimiyat channels and college career offices; prohibit applicant fees; and implement a Local Hiring and Training Plan with targets for local participation, women and youth. Short courses and on-the-job training will be offered for construction trades (e.g., scaffolding, rebar, banksman, equipment operation) and a pre-operations trainee programme (classroom and practical) will prepare local operators and maintenance technicians for commissioning and steady-state operations. Working conditions will comply with national labour law and good international industry practice, including fair wages, social insurance, PPE, safe transport or decent camp (if needed) accommodation, zero tolerance for child/forced labour and harassment, and access to worker and community grievance mechanisms.

Local businesses will also benefit through fair, open procurement that favours qualified local suppliers where feasible (materials, transport, catering, cleaning, PPE, waste services), accompanied by supplier briefings on HSE and quality requirements. In sum, the project will provide a balanced mix of entry-level, semi-skilled, skilled and professional roles with clear pathways for local residents to gain skills and secure employment, while only a limited number of highly specialised positions will require external hires—paired with local trainees to build long-term regional capacity.

4.2.2 Impact on economic development

The scale of the project will provide electricity to a number of districts of Jizzakh region and Jizzakh city.

Construction companies and subcontractors, transport and service organizations will be involved in the construction. Construction materials, finished reinforced concrete products and structures, etc. will be purchased on the local market.

Participation in the project will provide additional income, preservation of existing or creation of new workplaces, tax payments to budgets (VAT, income tax, etc.).

Income growth will stimulate the subsequent consumption of goods and services.

The main factors contributing to GDP growth (gross domestic product per employee) are labor productivity growth and employment growth. The project assumes simultaneous growth of employment and labor productivity.

An increase in labor productivity will ensure the creation of more efficient and, accordingly, higher-paying workplaces.

During the period of operation, it is necessary to provide for contributions to the social development of the region /charity in the amount of 2% of net profit in the design calculations.

The implementation of the project will also create an opportunity for socially significant investments and charity. Improving the infrastructure of the Sharaf Rashidov district and through repairs, reconstruction of highways, as well as the construction of additional facilities to provide electricity.

Additional tax revenues to the budget during the operation of the power plant will increase budget financing for education, health, culture, and social policy, including state benefits and compensation payments to the population at the local, regional, and national levels.

Thus, the wages of those employed in the public sector are increasing, new jobs are being created in social sectors, which affects the level and quality of life of the population: the situation on the labor market is improving and employment income and social transfers to the population are increasing, the availability and quality of social services are increasing.

The project activities will make a significant contribution to increasing income and raising the level of internal solvency of the population of the Sharaf-Rashidov district, as well as the Republic of Uzbekistan as a whole. The growth of household incomes and the expansion of effective demand are the result of paying for the work of those employed in the workplaces created at the projected facilities and the development of current production.

The implementation of the project will give an additional incentive to the development of the energy industry of Uzbekistan, through the implementation and contribution to the development of the "Concept of providing the Republic of Uzbekistan with electric energy for 2020-2030"

4.2.3 Impact related to training, professional development

At the construction stage, contractors will involve specialists of construction professions based on the requirements and qualifications necessary for the implementation of the construction process.

Professional development and training of personnel will be carried out on occupational safety and health at construction sites.

There will also be awareness-raising activities and training on the risks of socially-related diseases and ways to control them, interaction with the population of the project area and the Code of Conduct for Contractor Employees.

Already at the construction stage, the training of project personnel for the operational stage will begin.

Providing training is required not only for the launch of production, but also in the future, since improving qualifications, improving management, and replenishing personnel (for example, due to employees retiring and leaving their positions) is a continuous process.

The training program will include:

- theoretical internship;
- internship at a similar enterprise;
- internship at the facility site.

At the final stage of installation and during the commissioning period, a practical internship on equipment designed and supplied by Siemens will be conducted for the staff.

The positive impact of training and advanced training will also be exerted on newly recruited project personnel selected from the residents of Sharaf-Rashidov district and Jizzakh.

The implementation of the project will create a demand for skilled labor. This means that the implementation of the project, by presenting a demand for highly qualified labor, will ensure an increase in the educational and qualification level of the labor force and reduce the scale of unskilled labor in the region.

The improvement of professional qualification requirements for employees is an incentive for the development of the vocational education system at the levels of the region and the republic as a whole.

4.2.4 Land acquisition, economic relocation

The study aimed at assessing the impact of the project on households, agricultural producers, and business entities showed that , the project affected a land plot belonging to the “Donabek Sano” farm enterprise. Before construction, the Khokimiyat of Sharaf-Rashidov district commissioned an independent valuation of impacts and paid compensation in full; the farm confirmed that it is satisfied with the assessment and compensation outcome.

There are no cases of physical displacement associated with the project — no households or individuals are being relocated from their homes or residential land. The only impacts identified relate to economic displacement, specifically involving the farm owner and agricultural workers of the “Donabek Sano” farm, whose land was partially acquired for the construction of the project facilities.

While compensation for land acquisition was carried out in accordance with Uzbek national legislation, the project lenders require further alignment with the International Finance Corporation’s Performance Standard 5 (IFC PS5) on Land Acquisition and Involuntary Resettlement. To address this, an ongoing Livelihood Restoration Plan (LRP) is being implemented to close any remaining gaps between national regulatory processes and the international safeguard requirements.

This LRP focuses on ensuring that all Project Affected Persons (PAPs) — including the farm owner and his workers — receive adequate support to restore and, where possible, improve their pre-project income levels and livelihood conditions. It also establishes a transparent monitoring and reporting framework, ensures continued stakeholder engagement, and maintains an accessible grievance mechanism.

Through this approach, the project demonstrates its commitment to responsible land acquisition, social sustainability, and compliance with lender standards, while minimizing any residual social risks and ensuring equitable outcomes for affected people.

The land-related impacts were associated with temporary and permanent land acquisition, resulting in loss of rain-fed areas and demolition of farm buildings. No additional land take or economic relocation is envisaged during operations; all activities will remain within the allocated site boundaries. In addition to compensation, the project is developing a Livelihood Restoration Plan (LRP) for this Project-Affected Party (PAP) to manage any residual and transitional impacts in line with Uzbek legislation and lender requirements, and consistent with the IFC Resettlement Handbook and good international industry practice.

The LRP summarizes the approach to addressing economic displacement impacts associated with the Combined-Cycle Gas Turbine Power Plant (CCGTPP) project in Sharaf-Rashidov District, excluding associated facilities and temporary land restrictions. The land allocated to CENERGO LLC has undergone a Social Compliance Audit (SCA) to assess prior land use and identify any legacy issues.

As the project seeks international financing, it will comply with the IFC Performance Standards (PS), particularly PS5 on Land Acquisition and Involuntary Resettlement. Accordingly, the Livelihood Restoration Plan (LRP) establishes the framework for ensuring that all affected persons are properly identified, compensated, and supported in restoring or improving their livelihoods.

The LRP defines eligibility criteria and an entitlement framework for Project Affected Persons (PAPs), aligns national laws with international safeguard standards, and outlines procedures for land acquisition, compensation, and livelihood support. It also incorporates findings from the SCA, sets out roles and responsibilities of implementing entities, and proposes a Grievance Redress Mechanism (GRM) to address any concerns.

Finally, the plan includes a monitoring and evaluation system to assess the effectiveness of compensation and livelihood restoration measures, ensuring that affected households achieve sustainable recovery in line with World Bank and IFC requirements.

The study showed that the employment status and income levels of the farm workers have not changed, meaning that the Project has had no impact on these workers.

Continuous monitoring of the LRP implementation is being carried out. For this purpose, an LRP Committee has been established with the participation of representatives from the local authorities, the cadastral office, the Department of Agricultural Development, and the mahalla.

An agricultural expert has been engaged to assist the farmer in improving the profitability of his farming activities.

Ongoing assessment of the potential impacts of the project is also being conducted.

The plan will also include a grievance redress mechanism accessible to the PAP, a consultation and disclosure program with the farm and local authorities, roles and responsibilities, budget and schedule, and monitoring and evaluation with measurable indicators of income and production recovery (with follow-up reviews—e.g., at 6/12 months—and corrective actions if targets are not met). This approach ensures that, beyond the compensation already paid and acknowledged, the farm's livelihoods are restored at least to pre-project levels, while maintaining full compliance with national requirements and the project's lenders' standards.

4.2.5 Labor influx and population change

The well-being of local communities and their social context may deteriorate due to the influx of outside labor. The lack of qualified labor resources will contribute to labor migration from other regions of Uzbekistan, possibly from abroad.

The potential beneficial effect of such migration may be to increase demand for locally produced products and services, which may create advantages for small businesses and farms in Jizzakh city and Sharaf-Rashidov district.

Of course, it is preferable to involve local labor, as this has many advantages; not only in terms of reducing the need for housing, but also because it increases direct and indirect benefits for the local population, the approach is supported in all aspects by the Project Lenders in alignment with the IFC Performance Standards and applicable WBG EHS Guidelines. However, the requirements for the qualification of personnel, the calendar schedule of the construction stage made it necessary to use the option with the use of shift personnel.

At the initial stage of the project, the question of whether housing for employees is required at all was considered. In this regard, the needs for labor, including skills and likely numbers during the project cycle, were analyzed, and an assessment of the capabilities of the local population to meet these labor needs was carried out.

The influx of labor can lead to conflicts between newcomers and local residents. It is highly likely that these conflicts will be local in nature and will not lead to a significant decrease in the level of security of the population.

An increase in the incidence of socially related diseases is also possible due to the influx of labor. The risk of this impact can be reduced by implementing within the Project its own program of medical examinations and a management system in the field of protection of employees' health, as well as by conducting systematic information and explanatory work to inform employees about the risks of infection with socially transmitted diseases and ways of controlling these risks.

It is necessary to provide mitigating measures in the form of the development and implementation of social assistance programs for vulnerable groups of people. The implementation of these programs will significantly reduce the likelihood of adverse consequences.

At the operational stage, the total number of new workplaces under the project will amount to 70 people, of which 65 (92%) workers and 5 (8%) managers, specialists and employees, including administrative and managerial personnel.

The work and rest schedule of key workers, duty personnel, managers and specialists employed in shifts is adopted in accordance with the operating schedule of the main process equipment - continuous, three-shift, 8-hour, for managers, specialists not employed in shifts, as well as for some repair personnel - a single-shift work schedule with two days off.

The influx of labor in connection with the implementation of the project will lead to a slight increase in the load on social infrastructure facilities such as hospitals and other medical institutions, schools, leisure and recreation facilities, housing, public transport and others.

The analysis carried out at the stage of basic socio-economic research showed that the population of Jizzakh city and Sharaf-Rashidov district is adequately provided with hospitals and polyclinics.

Despite the fact that in the short term, the influx of labor will lead to some increase in the burden on social infrastructure, it can be expected that an increase in demand will lead to infrastructure development, which will provide an additional positive effect.

Based on the assessment provided in 125-1105-ESIA-P0-Book 2, Sections 7.4 and 7.5, it was determined that the average school occupancy in Sharaf-Rashidov district is 585 pupils, which indicates a sufficient number of schools in the district.

At the same time, it is unlikely that the increased burden on social infrastructure in connection with the implementation of the project will lead to a decrease in the welfare of the population. Assisting potentially vulnerable groups of people who may be directly affected by negative impacts will be key.

An increase in inflation, in particular, food and housing prices, can also be caused by an influx of labor and a change in the level of demand. It is unlikely that this impact will actually lead to a decrease in the overall well-being of people, since demand will stimulate additional production and an increase in the number of services provided to the population, but it is necessary to understand that this impact may affect vulnerable groups.

At the stage of operation, there may be unsatisfied expectations of the able–bodied population in the field of employment, as well as dissatisfaction of the local population - those employed within the framework of the project, and those whose applications turned out to be unsuccessful.

4.2.6 Child and forced labor

Project task – to prevent any form of child and forced labor in the supply chain and project activities. Workers under 21 years of age will not be employed by the project.

Uzbekistan has ratified eight fundamental ILO conventions that address the "basic labor standards", including provisions on child and forced labor (for more information, see 125-1105-ESIA-PE- Book 1, Section 2).

The main impacts of the planned activities at the construction stage are related to the provision of services by contractors and the supply of products by suppliers using child and forced labor.

In order to prevent any forms of child and forced labor at the stage of construction of a combined cycle power plant, it is necessary to develop procedures for screening contractors and include provisions on child and forced labor in contracts with suppliers and contractors, and to determine measures of influence for their violation.

The risk and impact of any form of child or forced labour during the operational phase of the power plant is unlikely, as the HR Policy will ensure that the project as a whole does not involve the use of child or forced labour, and will also reflect in the policy national and international requirements for personnel and supply chain workers who are not in an employment relationship.

A grievance mechanism available to all project workers, including contract and subcontractor workers, as well as supply chain workers (discussed in Section 10.8) they will also help to minimize this risk.

4.2.7 Access to Transport Infrastructure

The following aspects of the project could potentially have an impact on social facilities and transport infrastructure:

- carrying out work on moving soil/excavation, transportation of bulky equipment may inadvertently damage existing infrastructure.

During peak periods of construction and commissioning of the facility in 2026-2027, traffic intensity is projected to increase by approximately 30% of the current level (see Table 10.710.7.1, 125-1105-ESIA-PE-Book 2).

Potential impacts:

- road surface wear/degradation – when using the road network to access the project area;
- traffic jams and delays (road closures), especially during periods of delivery of oversized and/or heavy goods.

No significant impact on access to infrastructure and its deterioration during the operational phase is expected.

4.2.8 Supply chain impacts

The social and environmental risks and impacts of the project supply chain are associated with suppliers of goods and services necessary for the implementation of the project. One of the objectives of the IFC PS-2 is to ensure the protection of workers, including vulnerable categories such as children, migrant workers, workers employed by third parties, as well as workers in the customer's supply chain.

The supply chain extends to equipment, materials, components, goods or products used in current activities.

The supply chain of goods may include suppliers of raw materials and suppliers of parts and components for assembly and production.

The term "primary supplier" refers to those suppliers who provide goods and materials required for the project's core business processes.

The supply chain of the Project can be complex and consists of a large number of suppliers at different levels. It is difficult to assess the full supply chain of a project, and areas of risk and impact are usually identified.

Supplier activity monitoring will be integrated into the overall Project management system. This will help determine if mitigation procedures and measures are being implemented correctly and provide feedback on new areas of risk and hazard.

The IFC PS-2 chain of custody requirements do not apply to materials and components used during the construction phase of the project.

The main social and environmental impacts and risks associated with the supply chain during the construction phase may include child and forced labour in the provision of services by contractors and the delivery of products by suppliers, in addition to where there is a high level of risk to the safety of workers in the supply chain. "Cenergo" LLC will introduce procedures and take measures to reduce the level of risk, ensuring that key suppliers and contractors take measures to prevent or eliminate situations that pose a threat to life.

The ability to completely eliminate these risks will depend on the level of administrative control or degree of influence over key suppliers and contractors. Where corrective actions are difficult to implement, "Cenergo" LLC will, over time, reorient the chain to suppliers and contractors who can demonstrate that they are capable of meeting the requirements of IFC PS-2.

The table below examines the main environmental requirements of "Cenergo" LLC for contractors and suppliers.

Table 5: Environmental requirements for suppliers of Cenergo LLC

Requirements for contractors and suppliers of raw materials, equipment, services	
Groups of requirements	Requirements for contractors
General requirements	Availability of a certified environmental management system and/or a certified integrated management system (HSE) Availability of an environmental management system and/or an integrated management system (HSE) Availability of standards and procedures in the field of HSE
Requirements to construction contractors	Maximum possible use of local raw materials for construction work, emergency preparedness, availability of the treatmentsystem in dangerous materials and substances (if necessary, their use), elimination of objects of temporary infrastructure in considering the possibility of reuse

Preventing climate change	Availability of a GHG management system accounting for fuel and energy consumption, and transmission of this data to Cenergo LLC for climate reporting purposes regularly the use of technologies, equipment and practices involving the use of renewable energy sources, the use of electric, hybrid, biofuel and/or gas vehicles
Resource conservation	Use of water efficiency measures in contractors/suppliers' operations (reduction of water consumption and conservation of water resources, for example, through the use of rainwater harvesting and use, as well as the introduction of recirculating water systems)
Waste management	• availability of a waste management system • application of technologies and materials involving the use of recycled materials and the use of complexes for the processing of solid household and biological waste use of waste-free and low-waste technologies in construction, the presence of a separate waste collection system • availability of waste composting solutions, waste management in the field of consumer services, nutrition and cleaning • liquidation of objects of temporary infrastructure taking into account the possibility of reuse, availability of equipment (technologies) for recycling waste that meet environmental requirements, availability of vehicles for transporting waste that meet environmental requirements, availability of waste disposal facilities that meet environmental requirements
Requirements for equipment, materials and raw materials	
Use of hazardous/toxic substances	refusal to use materials/raw materials that are considered dangerous or toxic to humans or polluting the environment (if reasonable alternatives are available), refusal to use ozone-depleting substances
Energy efficiency and resource conservation	Use of certified technologies (equipment) in the field of energy, heat and water conservation

As determined by IFC PS-2, Cenergo LLC must conduct due diligence in its supply chain to avoid receiving benefits or financial gain from such practices.

The project will make special efforts and conduct additional due diligence where such practices are widespread or known to exist at certain levels of the supply chain in specific industries or regions.

The financial benefit of child and forced labor is a specific risk where labor cost is one of the project competitiveness factors.

The project will make the most of its influence to eliminate child and forced labor in its supply chain. It is also necessary to take measures to prevent or eliminate life-threatening situations within the supply chain.

Implementation procedures, such as procurement procedures, will ensure that child and forced labor requirements and labor safety issues are included in orders and contracts with suppliers.

4.2.9 Cultural heritage

The impact associated with construction work on the designated site is considered.

Since the construction site is located on an agricultural territory that has been developed for many decades, the impact on the archaeological and cultural heritage on the territory of the construction site is considered to be minimal.

When studying the project documentation and holding a consultation meeting with the head of the Agency for Cultural Heritage of the Jizzakh Region, an answer was received about significant cultural and archaeological heritage sites located in this area.

The agency has provided information on the location of 3 cultural heritage sites located at a distance of over 5 kilometers from the construction site. Chance finds procedure has been prepared for construction period in scope of ESMS.

Impact on cultural heritage at the operational stage is not predicted (excluded).

A Chance Finds Procedure has been developed to manage any unexpected discoveries of cultural heritage or archaeological artifacts that may occur during construction activities.

Under this procedure, all contractors and site personnel are required to immediately suspend work in the area of discovery and secure the site to prevent disturbance or damage. The find must be reported without delay to the site supervisor and the relevant local heritage authorities, who will assess the significance of the discovery and determine the appropriate course of action.

Work in the affected area will only resume after official clearance has been granted by the competent authorities. The procedure forms part of the project's Environmental and Social Management Plan (ESMP) and is aligned with Uzbek national heritage legislation and international good practice, including IFC Performance Standard 8 (Cultural Heritage).

All construction staff will be trained and regularly briefed on the Chance Finds Procedure to ensure proper understanding, prompt reporting, and full compliance during the construction phase.

4.2.10 Workers' rights, safety and labor protection

It is expected that during the peak construction period, at least 650 workplaces will be created within the framework of the project, the duration of which is directly related to the construction period of the power plant. The majority of the workers will be engaged by the Contractor and will consist of unskilled and skilled labor.

Expected impacts include the operation of heavy machinery and transport, working at height, construction work, the use of electrical equipment, the handling of hazardous materials and other hazardous activities.

Due to the nature of the activities carried out during the construction phase, the safety of personnel is a key risk with the possibility of accidents that can lead to injury and death, as well as loss of working time.

Occupational Health and Safety Plans and Procedures (OHS) will be prepared by the Contractor prior to commencement of construction work.

The Contractor will ensure strict implementation of the OHS plan through its occupational safety and health officer.

In addition, the Contractor will conduct a series of training courses and safety meetings.

The Contractor will regularly inspect, test and maintain all security equipment (including fire-fighting equipment), scaffolding, fencing, work platforms, lifts, stairs and other means of access, lifting, lighting, marking and security equipment

Employees (before the work starts) will be provided with appropriate PPE free of charge suitable for performing electrical work, such as protective boots, harnesses, helmets, gloves, protective clothing, goggles and protective headphones.

Concerning the rights of workers and personnel, the Contractor must ensure that the following measures are implemented:

- The provisions in the Contractors' contract should include, as far as practicable, clauses to address issues related to collective bargaining, downsizing, placement of employees and shortage of employees, to ensure compliance with the requirements of the ILO and IFC;
- development and implementation by the Contractor of a Personnel policy (Human Resources and Human Rights Policies) for hiring, training, evaluation and remuneration of the project workforce;
- The policy should prevent all employees of any form of discrimination in the workplace and ensure fair and equal treatment;
- establishing a grievance mechanism so that employees can raise reasonable workplace issues. The contractor will inform employees about the complaint mechanism when hiring and make it easily accessible to them;
- employees will not be restricted in joining or creating workers' organizations, as well as in negotiating collective agreements, and the Contractor will not discriminate against employees who form or join collectives or conclude collective agreements;
- preparing a redundancy plan to mitigate the impact of sudden termination of employment contracts, including, for example and where appropriate, the implementation of a transparent redundancy process and labour consultation mechanisms. The contractor will explain the temporary nature of the workplaces during the hiring process and will explain to workers the need to prepare for job loss and manage their income wisely while employed.

All employees will have contracts describing their job responsibilities and working conditions, as well as explaining their content. The contractor will hire a group of occupational health and safety specialists to implement and manage the above tasks.

All subcontractors of the project will be provided with copies of the ESEMP (Environmental and Social Environment Management Plan) of the Contractor. All subcontracts will include provisions ensuring compliance with the ESEMP at all levels of subcontracting.

All subcontractors will have to appoint a safety officer who will be on the construction Site for the duration of the relevant subcontract. To implement the above points, the contractor will appoint qualified personnel for environmental protection, health and safety at work.

Occupational health and safety management will be carried out in accordance with national regulatory documents and at the operational stage of the project.

The process of improving working conditions will be carried out systematically. In order to achieve sound Health & Safety (HS) conditions, it is necessary to finance the establishment of permanent mechanisms for their review, planning, implementation, evaluation and appropriate action.

This will be achieved through the establishment of occupational health and safety management systems.

The selection and implementation of specific measures to prevent industrial injuries and diseases among workers depends on the main hazardous factors and expected injuries and diseases.

The main hazardous production factors are:

- natural gas leak and gas contamination;
- steam leakage; electric current;
- explosion and flame;
- location of work places and equipment at height.

Harmful factors of the production process, if exposed to a person over a long period of time and intensively, can lead to the development of occupational diseases in the worker. These factors include:

- thermal, ultraviolet, ionizing and other radiation;
- electromagnetic fields;
- dust and gas are released into the atmosphere of the production premises;
- high level of noise and vibration, ultrasound.

The personnel of the combined cycle power plant will be exposed to all of the above factors.

The probability of exposure to each hazardous factor should be assessed in accordance with the provisions of the instructions of the International Labour Organization

"Occupational safety when working with chemicals" and "Environmental factors in the workplace", or other provisions of equal or greater importance.

Activities to assess the effects of hazardous factors are carried out by competent persons in the process of certification and inspection of workplaces with the provision of information to staff about the results of the assessment.

Ensuring safe working conditions includes timely staff training and periodic monitoring of staff knowledge, training in first aid rules, and regular medical examinations of staff.

It is recommended to develop and implement a long-term training program in the field of OHS, provided by specialists in the relevant field of OHS.

The expected impact on the health, safety and labor protection of personnel at the operational stage is as follows:

- risks for employees in connection with hazardous work;
- impacton the health of personnel due to hazardous and harmful production factors;
- violation of workers' rights.

The proposed mitigation measures described will help reduce the risk of incidents. As a part of the project ESMS, OHS policies and management plans have been developed to manage these risks. For each 40 workers 1 OHS staff will be in place to manage this potential risks.

4.2.11 Health, safety and well-being of the population

Potential impacts on public safety:

- conflicts between construction site and camp (if needed) security and safety personnel, workers and local residents (risk of injury);
- an increase in the intensity of traffic flows on roads used by the population means – an increased risk of road accidents leading to accidents and, potentially, injuries or deaths.
-

Potential public health impacts:

- an increase in the number of disease vectors, such as rodents (if food/drinks are stored incorrectly and solid/liquid waste is not managed properly), with a concomitant increase in the incidence of vector-borne diseases;
- an increase in the number of cases of infectious diseases as a result of interaction between workers and the local population. With a potential peak population of 600- 850 people (mainly men), there is a risk of infectious diseases spreading (for example, tuberculosis and sexually transmitted diseases such as HIV, etc.);
- risk of water-borne diseases in case of inefficient waste management;
- increased pollution levels due to increased traffic and transportation of construction materials.

The risk of multi-mediated exposure due to aerogenic precipitation, contamination of drinking water, and food is predicted to a lesser extent.

The health of the population is interconnected with the state of the environment. Ecologically determined classes of diseases can vividly indicate the impact of the environment on the health of the population. The most sensitive to the effects of environmental factors are the hematopoietic, cardiovascular, central nervous, genitourinary systems, as well as the respiratory organs.

According to baseline studies (see report 125-1105-ESIA-PE-Book 2), in the area of the planned activity, classes of diseases (diseases of the respiratory system, diseases of the blood and diseases of the hematopoietic organs) are more pronounced, largely associated, among other things, with environmental conditions, in particular, with the level of air pollution and the lifestyle of the population.

Accordingly, activities to organize health monitoring of the population of the Sharaf-Rashidov district are of priority importance for the project. The main tasks of monitoring are monitoring of health impact factors (atmospheric air quality), assessment of the predicted state of health and planning of measures aimed at improving the health of the population.

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING

5.1 Environmental protection and monitoring measures

The results of the impact assessment provided the basis for developing measures to prevent/reduce their level. The mitigation and monitoring measures outlined in this section are commensurate with the type, scale, and level of risk associated with the environmental and social impacts identified through the ESIA process. These measures ensure that potential adverse effects are effectively managed and that monitoring efforts are proportionate to the significance of the impacts.

The justification of the measures was carried out in accordance with the hierarchy recommended by the IFC Performance IFC 1:

- impact prevention;
- impact minimization;
- restoration of affected components/ecosystems/communities – if applicable;
- compensation to affected components/ecosystems/communities – if applicable;

In the ESIA, special attention was paid to impacts, the significance of which was assessed as "High". However, the Consultant and the initiator of the planned activity have considered measures for other impacts.

At each stage of the project life cycle, mechanisms will be used to prevent, minimize, and reduce potential negative impacts.

The Environmental and Social Protection Action Plans (E&SPAPs) present measures and management measures to ensure that the project meets national requirements and the applicable requirements of the IFC.

The effectiveness of the proposed measures is determined by monitoring the state of the environmental components and its individual indicators:

- atmospheric air;
- surface and underground waters;
- groud (soils);
- acoustic environment.

In turn, the E&SPAP is an important part of the loan agreement, the implementation of the measures of the Plans is monitored during the monitoring of the implementation of the project itself by the credit institution.

5.2 E&S Management Plans

The Environmental and Social Management System (ESMS) for the construction phase establishes a structured framework to ensure that all environmental and social (E&S) risks and impacts associated with project activities are effectively managed. The ESMS incorporates a comprehensive set of management plans and procedures designed to guide the Company, contractors, and other involved parties in achieving compliance with national regulations, lender requirements, and good international industry practice (GIIP). Each plan outlines specific objectives, implementation responsibilities, and actions necessary to maintain environmental protection, safeguard community welfare, promote occupational health and safety, and uphold sound labor and stakeholder engagement practices throughout the construction phase of the Project, see table below.

Table 6: Description of ESMS Management Plans for the Construction Phase and Responsibility for Implementation

Number	Name	Overall Description / Objective	Lead Implementation[7]
01	ESMS Manual	The ESMS drives compliance with E&S obligations for the construction phase through identifying: 1. the overall structure and outline for the ESMS implemented for the construction phase, by all involved counterparts to include the Company, contractors and other; 2. E&S policies and commitment requirements; 3. Structure of the key E&S procedures and plans to be implemented to ensure all risks and impacts are properly managed; and, 4. the institutional framework and responsibilities to ensure that such procedures and plans are implemented effectively and efficiently.	Company
02	Contractor Management Plan	The Contractor Management Plan (CMP) is to be implemented by the Contractors before and during the construction phase of the Project as part of the ESMS, to ensure that Subcontractors hired for the project comply with the project E&S requirements.	Contractors
03	Stakeholder Engagement Plan	The SEP provides a systematic approach to identify the actions the Project needs to undertake to ensure that a timely, consistent, comprehensive, coordinated and culturally appropriate approach is taken for consultations and Project disclosure. The SEP includes specific requirements for stakeholder identification and mapping, engagement, information disclosure, consultation meetings and public participation. The SEP is a live document to be updated throughout the Project construction phase as required.	Company
04	Grievance Redress Mechanism Plan	A Stakeholder Grievance Mechanism is an established process to receive stakeholder concerns and grievances and to facilitate their resolution through a set procedure. The stakeholder grievance mechanism is implemented by the Company throughout the construction phase of the Project, for dealing with stakeholder grievances in order to: identify and manage stakeholder concerns and thus support effective risk management, prevent adverse consequences of failure to adequately address grievances, and build and maintain trust with all stakeholders.	Company Contractors
05	Livelihood Restoration Plan	Plan for the restoration of livelihoods of formal or informal persons/land users that are adversely affected by the Project to mitigate and fully compensate for economical displacement impacts.	Company
06	Labor Welfare and Working Conditions Management Plan	Identifies the main labor requirements and risks associated with the project during the construction phase and determines the relevant management measures to address labor issues and achieve compliance with project obligations and ESMS. **In addition, this plan in specific also includes the worker grievance mechanism.**	Company and Contractors

[7] This column identifies the lead responsible entity. Compliance is ultimately under the responsibility of the Company. Contractors and suppliers shall provide the relevant input for the documents and plans implemented by the Company. All parties shall comply with all relevant ESMS requirements.

07	Occupational Health and Safety (OHS) Management Plan	Establishes a set of guidelines and procedures that clearly describe the manner in which construction activities will be carried out to ensure employee safety and the safeguarding of personnel and property for both routine and non-routine activities. The objective is to prevent all OHS incidents to the greatest extent possible for all employees and ensure environmental protection at the place of work; zero fatal accidents and lost time accidents; and full compliance with legal and contractual requirements.	Company and Contractors
08	Emergency Preparedness and Response Plan	The objective of this plan is to establish a series of organization, operational and preventive measures in the event of an emergency that are adapted to the circumstances of such situations, which in turn will ensure the safety of workers, the environment and potentially communities.	Company and Contractors
09	Chemical and Hazardous Material Management Plan	The main objective of the Chemical and Hazardous Materials Management Plan, is to identify the types and quantities of hazardous materials sourced and natural resources used during construction phase, and to describe the procedures and responsibilities for the management, transport, storage and disposal of these materials, substances.	Company and Contractors
10	Water Management Plan	The water management plan identifies sources of water supply for the Project, estimation of required quantities, and procedures the sustainable use and management of water resources used throughout the construction phase of the Project.	Company and Contractors
11	Chance Find Procedure	Identifies procedures to be implemented during the construction phase of the Project where there is potential for as-yet undiscovered archaeological remains to occur (i.e. chance finds) underground during the construction phase of the project.	Company and Contractor
12	Code of Conduct	A code of conduct sets out clearly the Company's expectations for Contractor’s behaviour across the project in the areas of integrity, objectivity, confidentiality, professional behaviour and professional competence. It helps to ensure employees are comfortable in their working environment.	Company and Contractors
13	Human Resource Management Plan_	The purpose of the Plan is to organize personnel management in accordance with the applicable requirements of national and international labor legislation and Project Lenders’ requirements	Company and Contractors
14	Spill Prevention and Response Procedure	The objective of applying the requirements of these standards to the Project is to prevent or minimize the adverse effects of hazardous materials and substances as a result of spills and leaks on public health, personnel and the environment.	Company and Contractors
15	Waste and Wastewater Management Plan	The main objective of the Waste and Wastewater Management Plan, is to identify the types and quantities of waste and wastewater generated at the project site during the construction phase, and to describe the procedures and responsibilities for the management, transport, storage and disposal of waste products.	Company and Contractors

5.3 Measures to protect and monitor the social environment

IFC PS 1 requires internal and external monitoring of all Category A projects (significant impact). Monitoring reports will be disclosed by Cenergo LLC every three months during the construction period, once a year during the first three years of operation.

Monitoring of social issues is extremely important, especially in relation to child and forced labor, working conditions and safety, health and employee complaints. Internal and external monitoring will have to ensure that the Project's obligations to respect workers' rights are fulfilled, in particular:

- Prohibition of child and forced labor.
- Minimum wage payments and overtime payments.
- Control of actions that prevent employees from exercising their right to association, organization, and collective bargaining.
- Exclusion of the practice of charging fees for employment within the framework of the project.
- Implementation of plans, procedures and training in the field of occupational health and safety.
- Observance of the principles of non-discrimination and equal opportunities in the employment cycle.
- The use of a mechanism for reviewing labor complaints.
- Availability of human resources policies, job descriptions, and written contracts.
- Providing information to the workforce about rights and working conditions.
- Employee training activities.

The utmost attention will be paid to monitoring the implementation of E&SPAP, occupational health and safety procedures. To ensure the effectiveness of the monitoring system, a warning system for violations and non-compliance will be created and implemented.

The project activities will be aimed at reducing the number of accidents among project employees, especially accidents that can lead to loss of working time, disability, or even death. Cenergo LLC will also conduct an audit of the contractor's work camps(if needed) for compliance with the conditions of the E&SPAP.

During the construction phase and during operation, the following actions are proposed by third parties to monitor and account for mitigation measures:

- Receiving and registering complaints through the employee complaint review mechanism, the complaint log will be reviewed monthly by the Human Resources Department of Cenergo LLC to identify patterns or areas where actions can be taken to prevent repeated problems. Complaints related to land allotment and restoration of livelihoods will be accepted and recorded through a project-wide grievance mechanism, and the journal will be reviewed monthly by the CLO.
- Maintaining records of occupational health and safety training, especially in relation to:
  - OHS trainings;
  - security personnel training;

  - raising awareness about infectious diseases (e.g., tuberculosis and sexually transmitted diseases such as HIV, etc.);
  - emergency exercises.
- Maintaining logs of accidents, incidents and diseases to monitor OHS of Project employees in accordance with the Occupational Health and Safety (OHS) Plan.
- Maintaining confidential health records of project employees, including HIV/AIDS test results, medical outcomes, and data on occupational injuries or illnesses. These records will be recorded and checked anonymously by external auditors.
- Annual reporting on the audit of the supply chain, including in relation to child and forced labor as part of mandatory reporting on Loan agreements.
- Maintaining personal files for each employee of the project, including: contact details of the next of kin in case of an accident or emergency, social security number, copy of identity card, certificates and qualifications, internal and external training, vacation records, records of past abuse/ criminal records for security personnel.
- Maintaining security records that record the entry of non-employees into the Project area and any incidents related to security or security personnel.

The acceptance and registration of complaints from the public is carried out through a general project grievance mechanism, described in detail in the SEP. The CLO will analyze to identify and resolve common or recurring problems and complaints.

The company's management and contractors will work on these issues in order to identify the causes and take measures to prevent further repeated complaints.

All of the above will be regularly monitored during the construction and operation stages by the company's social, occupational safety and industrial safety specialists and their teams.

Monthly reports on social issues will be provided to the company's management during the construction phase and will be available to external auditors upon request.

6 CUMULATIVE IMPACTS

In line with the IFC *Good Practice Guidance on Assessing and Managing Cumulative Impacts* (2013), the CIA considers reasonably foreseeable effects arising from the Project together with other existing, planned or approved developments within the Area of Influence (AOI), based on scientific assessment and the concerns of affected communities, and excludes impacts that would occur without or independently of the Project. Cumulative Effects Social Components (CESC) were identified using stakeholder consultations (see Section 5, 125-1105-ESIA-PE-Book1) and the social impact forecast (see Section 10); receptors screened as “negligible” or “low” are not treated as CESC.

The principal social receptors comprise personnel and population together with socio-economic factors—specifically the labour market, transport infrastructure and social infrastructure. Applying this approach, the CIA finds a **moderate** cumulative impact on the labour market during construction and early operations, with **moderate residual effects** linked to long-term livelihood and quality-of-life improvements and a reduction in unemployment; these outcomes are supported by the Project’s environmental and social policy and priority local hiring for Jizzakh city and Sharaf-Rashidov district. The cumulative impact on **transport infrastructure** is **moderate**, driven by increased traffic intensity and freight volumes; residual impacts remain **moderate** with a Traffic Management Plan (TMP) covering routing and scheduling of heavy vehicles, worker bussing, junction safety and use of alternative routes.

The impact on **social infrastructure** is **moderate**, with **low residual** significance where mitigation is applied. Consistent with good practice, cumulative effects are defined with respect to **other projects** in the AOI: where none are known or sufficiently defined at the time of assessment, the CIA states this explicitly and focuses on the Project’s incremental contribution, while committing to maintain an “other projects register” and update the CIA if new developments become reasonably foreseeable. To prevent adverse social cumulative effects, the Project will participate in shared development of district infrastructure and implement targeted social assistance programmes for vulnerable groups as part of its social and environmental policy.

7 CONTACT INFORMATION

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8 CONCLUSION

Environmental and social impact assessment for the project

"Construction of the combined-cycle gas turbine power plant with a capacity of 550 MW" was completed in accordance with national requirements and applicable requirements of the Lenders to attract project financing.

The work within the framework of the integrated ESIA of the project was carried out by the company "Encompass".

The results of the impact assessment of the combined-cycle gas turbine power plant construction project on the environment and social environment indicate the fundamental possibility and admissibility of implementing the planned activity, taking into account the implementation of the proposed measures and recommendations for monitoring.

1. Possible alternatives to the implementation of technical solutions (including the location of the facility, the choice of technologies and /or others) do not have fundamental differences in terms of environmental impact. There are no grounds for abandoning the planned activity.
2. As a result of the studies, the characteristics of the expected impacts of the planned activity on the natural and social environment have been determined, which are characterized mainly by medium or moderate significance, local scale.
3. An overview of the impact assessment results for the planned activities for the construction and operation stages of the project is presented in Table 7.

Table 7: Results of the impact assessment of the planned activity on the natural and social environment

Item	Impacts	Stage	Orientation	Scale	Significance 58
1.	Impact on atmospheric air quality	C	–	Local	Negligible
		O	–	Domestic	Low
2.	Impacts related to GHG emissions and climate change	C	–	Regional	Low
3.	Acoustic and vibration effects	C	–	Local	Negligible
		O	–	Local	Low
4.	Impacts associated with waste generation	C	–	Local	Negligible
		O	–	Domestic	Low
5.	Impact on surface waters	C	–	-	-
		O	–	Domestic	Low
6.	Impact on soil cover	C	–	Local	Low
		O	–	Domestic	Negligible
7.	Impact on the flora	C	–	Local	Negligible
		O	–	Local	Negligible
8.	Impact on terrestrial wildlife	C	–	Local	Low
		O	–	Domestic	Low
9.	Impact on the labor market	C	+	Regional	Moderate
		O	+	Domestic	Moderate
10.	Impact on economic development	C	+	Domestic	Moderate
		O	+	Regional	Moderate
11.	Impact related to training, professional development	C	+	Domestic	Moderate

12.	Land acquisition, economic relocation	O	–	Domestic	Low
13.	Labor influx and population change	O	–	Domestic	Low
		C	–	Domestic	Low
14.	Child and forced labor	C	–	Domestic	Low
		O	–	Domestic	Low
15.	Impact on access to transport infrastructure	C	–	Domestic	Low
		O	–	Domestic	Low
16.	Supply chain impacts	C	–	Regional	Low
		O	–	Regional	Low
17.	Impact on cultural heritage	C	–	Local	Negligible
18.	Impacts on workers' rights, safety and labor protection	C	–	Local	Negligible
		O	–	Local	Low
19.	Impacts on public health, safety and welfare	C	–	Domestic	Negligible
		O	–	Domestic	Low
20.	Cumulative impacts	C	–	Domestic	Moderate
		O	–	Domestic	Moderate

53 The significance of residual effects is given (assessment after the implementation of recommended measures, if applicable).

4. The Project for the combined-cycle gas turbine power plant construction belongs to Category A according to the requirements of the IFC:
   - the project has the potential to cause significant negative impacts on the environment and social conditions;
   - the project's area of influence includes the territories adjacent to the project;
   - the implementation of the project will require the implementation of various measures to prevent and/or minimize negative environmental and social impacts.
5. Most greenhouse gases are produced by the use of natural gas in production processes and energy generation.
6. Air pollution in the residential area does not exceed permissible levels for any indicator; the impact of the power plant is acceptable.
7. Cumulative impacts on the social environment are also predicted – impacts on employment and the local economy, impacts on infrastructure. The implementation of the Project will have a positive impact at the local level through the creation of jobs, the purchase of goods and services by workers during the construction phase and the improvement of the infrastructure of the Sharaf-Rashidov district. During the operational phase, positive impacts are expected at the national level (increase in the country's gross domestic product, increase in government revenues and taxes). Given that most socio-economic adverse impacts are assessed as moderate or low, the project has a limited contribution to the cumulative adverse impacts.
8. The results of the impact assessment provided the basis for developing measures to prevent/reduce their level. The justification of the measures is carried out in accordance with the hierarchy recommended by IFC Performance Standard 1: avoid impacts, minimize impacts, restore affected components/ecosystems/communities (if applicable), compensate affected components/ecosystems/communities (if applicable). Particular attention is paid to impacts whose significance is assessed as “High”, but measures for other impacts are also considered.

9. The environmental protection solutions proposed in the ESIA include:
   - set of measures to protect atmospheric air;
   - prevention of waste generation and/or reduction of waste generation volumes;
   - measures to reduce water consumption (use of drainage water in the production cycle).
10. Solutions to ensure a favorable living environment for the population include:
   - organization of a sanitary protection zone;
   - measures regarding the acoustic environment, which provide for a set of planning, organizational and technical solutions to reduce the level of noise impact.
11. As a result of the assessment, a set of measures in the area of social responsibility, interaction with stakeholders, working conditions, health and safety of personnel and the population was substantiated, including:
   - adoption of the Personnel Policy(Human Resources and Human Rights Policies);
   - elimination of child and forced labor;
   - training and professional development of personnel;
   - Traffic Management Plan
   - creation of an effective grievance mechanism.
12. Based on the results of the ESIA, an Environmental and Social Action Plan (ESAP) will be prepared. The plan sets out the activities and management measures to ensure that the project complies with national requirements and applicable IFC requirements.
13. The effectiveness (efficiency) of the implementation of the proposed measures is determined as a result of monitoring the state of environmental components and/or its individual indicators (atmospheric air, surface and ground water, soils, acoustic environment), as well as social aspects.
14. ESAP is an important part of the loan agreement; the implementation of the Plan's measures is monitored during the project implementation monitoring.
15. The environmental and related socio-economic consequences of the planned activity are assessed as acceptable, provided that the recommendations substantiated by the ESIA study materials are fully implemented.
16. As part of the ESIA, Stakeholder Engagement Plan (SEP) was prepared. The SEP provides for continuous interaction with stakeholders throughout the entire project lifecycle.
17. Activities include consultations with community representatives, disclosure of information to local communities at key project milestones such as construction start and end, regular updates on the website and social media, updating of the SEP and annual project reporting.
18. Preliminary results of public information have shown the absence of public concerns and public preferences that require consideration when the customer makes decisions regarding the planned activity. The information and discussion processes continue.