Non-Technical Summary

Alatau Zharyk Grid Reinforcement Project

Grid infrastructure modernization programme in Almaty and Almaty Region of Kazakhstan

July 2026

CONTENTS

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AIIS	Automated Information and Measuring System
AMI/CTME	Advanced Metering Infrastructure
ASKUE	Automated System for Commercial Metering of Electricity
AZhK	Alatau Zharyk Company JSC
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
E&S	Environmental and Social
ESAP	Environmental and Social Action Plan
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
IBA	Important Bird Area
JSC	Joint Stock Company
kV	Kilovolt
LAR	Land Acquisition and Resettlement
OHL	Overhead Line
OHS	Occupational Health and Safety
PCB	Polychlorinated Biphenyl
PS / SS	Power Substation / Substation
RES	Regional Electricity Network Division
RP	Distribution Point
SCADA	Supervisory Control and Data Acquisition
SEP	Stakeholder Engagement Plan
TP / CTS	Transformer Point / Complete Transformer Substation
UTM	Telemetry and remote monitoring devices

1. INTRODUCTION

The European Bank for Reconstruction and Development (the “EBRD” or the “Bank”) is considering providing financing to Alatau Zharyk Company JSC (“AZhK” or the “Company”) for implementation of the Alatau Zharyk Grid Reinforcement Project (the “Project” or the “Modernisation Programme”) in Almaty city and Almaty Region, Kazakhstan.

The proceeds of the financing are expected to support AZhK’s investment programme for 2026-2028, which forms part of Kazakhstan’s national grid modernisation agenda. The Project includes a package of investments in construction and reconstruction of substations, replacement and modernisation of 6-10 kV cable and distribution networks, development of 110 kV transmission/distribution links, and digitalisation measures including smart grid, metering and telemetry components.

This document represents a preliminary Non-Technical Summary (NTS) of the Project, reflecting outcomes of Environmental and Social Assessment, the site visit and detailed review of environmental and social documentation.

Based on currently available Project plans, is expected to be categorised “B” in accordance with the EBRD Environmental and Social Policy (ESP) (2024), as potential adverse environmental and social risks and impacts are expected to be mainly site-specific, largely reversible and capable of being avoided or mitigated through good international industry practice (GIIP), appropriate design and implementation of management measures.

2. PROJECT OVERVIEW

2.1 Project Need

Almaty city and Almaty Region are experiencing continued growth in electricity demand driven by urban expansion, industrial and commercial development, new residential areas, and increasing expectations regarding quality and reliability of power supply. Parts of the existing electricity infrastructure have become constrained by ageing equipment, limited capacity, technical losses and increased load on substations and cable networks.

The Project is intended to improve the reliability, safety and efficiency of the electricity supply system by replacing worn and overloaded equipment, increasing transformation capacity, reducing technical losses, improving system observability and accelerating response to faults. Several components will also support the transition from legacy 35 kV infrastructure to more reliable 110 kV assets, while smart grid and telemetry investments will improve network control and customer service.

2.2 Project Implementing Entity

The Project will be implemented by Alatau Zharyk Company JSC (AZhK), the electricity network company serving Almaty city and Almaty Region. AZhK operates power grid assets and is responsible for ensuring reliable electricity transmission and distribution to residential, commercial, social and industrial consumers within its service territory.

AZhK is expected to be responsible for overall Project implementation, procurement and contractor management, technical supervision, operation and maintenance of the upgraded assets, and implementation of environmental and social management measures agreed with the EBRD.

2.3 Project Location

The Project is located within AZhK's service territory in Almaty city and Almaty Region. The proposed investments are distributed across urban, suburban and peri-urban locations, including existing substations, distribution points, cable network corridors, local distribution networks and selected 110 kV overhead line routes.

Project locations include, among others, the Medeu, Bostandyk, Zhetysu, Turksib and Auezov districts of Almaty city; the Borolday and Otegen Batyr area; Karasay, Ili and Talgar districts of Almaty Region; the settlements of Ushkonyr, Shamalgan, Zhetigen and Baiserke; the city of Qonaev; and the corridor between PS-143A "Robot" and PS-61A "Zhetigen").

The planned works are generally not located within nationally designated protected areas. One project component – the 110 kV overhead-line reconstruction associated with the Qonaev (Konaev) RES sub-project – partially overlaps (approximately 2 km) the internationally recognised Kapchagay Canyon Important Bird Area (IBA). This section, together with a few facilities located near bird-sensitive features (the Ili River and Kapchagay Reservoir, and the Bolshaya Almatinka), will be addressed through biodiversity screening and a proportionate Biodiversity Risk Management Plan.

The Project does not require large-scale land acquisition or physical resettlement; only limited, site-specific land acquisition and temporary easements are involved – a new plot for the "Sakharny Zavod" substation, a municipal plot for the "Teatralnaya" substation, and easements with permanent land take only for overhead-line tower footprints – which will be managed in line with EBRD ESR 5.

2.4 Project Components

The Project currently includes fourteen investment components (Figure 1), summarised in the table below. The final list and technical parameters may be refined during further Project preparation.

#	Component	Description	Indicative location / service area
1	Construction of 110/10 kV SS "Sakharny Zavod" with two 110 kV lines	Construction of a new 110/10 kV substation to replace the existing 35/10 kV PS No.35A "Sakharny Zavod", with load transfer, 2×40 MVA transformers and related 110 kV connections	Borolday settlement and Otegen Batyr area, Almaty Region
2	Construction of 110/10/6 kV SS "Teatralnaya" and decommissioning of PS 35 kV No.58A	Construction of a new substation to replace an existing 35/6 kV facility, increase capacity and replace worn equipment	Medeu and Bostandyk districts, Almaty city
3	In-out connection of 220 kV OHL Nos.2143 and 2153 to PS 220/110/10 kV No.154A "Koyankoz"	Connection of 220 kV overhead lines to the Koyankoz substation and development/extension of 110 kV switchgear to improve reliability and reserve capacity	Kokzhiek microdistrict, Zhetysu district, Almaty city
4	Smart Grid for Almaty consumers, RP-116 area	Modernisation of 10 kV ring cable network with automated fault localisation, selective protection, telemetry and metering	Bostandyk district, Almaty city
5	Reconstruction of PS No.60A "Baiserke"	Reconstruction of existing 110/35/10 kV substation, replacement of old transformers and equipment, and increase of installed capacity	Ili and Talgar districts, Almaty Region, and Alatau city
6	Reconstruction of overloaded 6-10 kV cable lines from PS-56A and PS-15A, RES-4	Reconstruction of approximately 55 km of cable lines and installation/modernisation of transformer points and associated distribution equipment	Turksib district, Almaty city
7	Reconstruction of overloaded 6-10 kV cable lines from RP-30, PS-150A and PS-118A, RES-6	Reconstruction of worn and overloaded cable lines and modernisation of distribution infrastructure	Auezov district, Almaty city

#	Component	Description	Indicative location / service area
8	Reconstruction of 6-10 kV cable lines from RP-108 and RP-107, RES-7	Reconstruction of cable lines and old transformer substations to reduce failures and losses	Taugul-3 microdistrict, Almaty city
9	Construction of 110/10 kV SS “Ushkonyr” with two 110 kV lines	Construction of new 110/10 kV substation replacing existing 35 kV PS No.126A, with load transfer and loss reduction	Karasay district, Almaty Region
10	Construction of 110/10 kV SS “Shamalgan” with two 110 kV lines	Construction of new 110/10 kV substation replacing existing 35/10 kV PS No.64A, with 2×40 MVA transformers and 110 kV connections	Karasay district, including Shamalgan and nearby settlements
11	Reconstruction of 10/6-0.4 kV distribution networks in Qonaev	Replacement and modernisation of cable and overhead lines, transformer substations and distribution assets	City of Qonaev
12	AIIS CTME and UTM	Automated metering and telemetry systems, including meters, data collection and transfer devices, controllers, communications and integration with SCADA/ASKUE	AZhK assets in Almaty city and Almaty Region
13	Construction of 110 kV OHL PS-143A “Robot” - PS-61A “Zhetigen”	New 110 kV overhead line to unload existing 110 kV transit and improve power supply reliability	Between “Robot” and “Zhetigen” substations
14	Reconstruction of PS No.61A “Zhetigen / Nikolaevka”	Reconstruction of 110/10 kV substation, including 110 kV switchgear and additional 110 kV bays	Zhetigen settlement and adjacent territories, Almaty Region

2.5 Activities Undertaken to Date

To support project development and align with international financial institution requirements, a number of environmental and social studies and assessments have been undertaken. In particular, an Environmental and Social Due Diligence (ESDD) was carried out by an independent consultant on behalf of the EBRD. The ESDD comprised both a corporate-level review and a project-specific assessment, including:

- a review of the Company’s existing environmental and social management systems, policies and procedures (including labour, health and safety, and supply-chain management practices);
- an assessment of legal compliance and permitting status under national legislation;
- a review of available technical documentation, including project design, land status and environmental baseline information;
- a site visit and stakeholder discussions to verify project conditions; and
- identification of key environmental and social risks and gaps against the EBRD Environmental and Social Requirements (ESRs), forming the basis for the Environmental and Social Action Plan (ESAP).

The findings of the ESDD confirm that the Project is associated with site-specific environmental and social impacts, which can be effectively mitigated through implementation of the agreed ESAP.

In terms of national permitting, the requirement for an Environmental Impact Assessment (EIA) under the Environmental Code is determined by the type of activity. Most sub-projects, such as reconstruction of substations, reconstruction of 6–10 kV cables, distribution-network modernisation, automation and metering, do not trigger a mandatory EIA. Components involving new or re-routed overhead lines of 110 kV and above are subject to impact screening, following which the authorised body confirms whether a full EIA is required. Detailed design, permitting and State Environmental Expertise, where applicable, will be completed during further Project preparation.

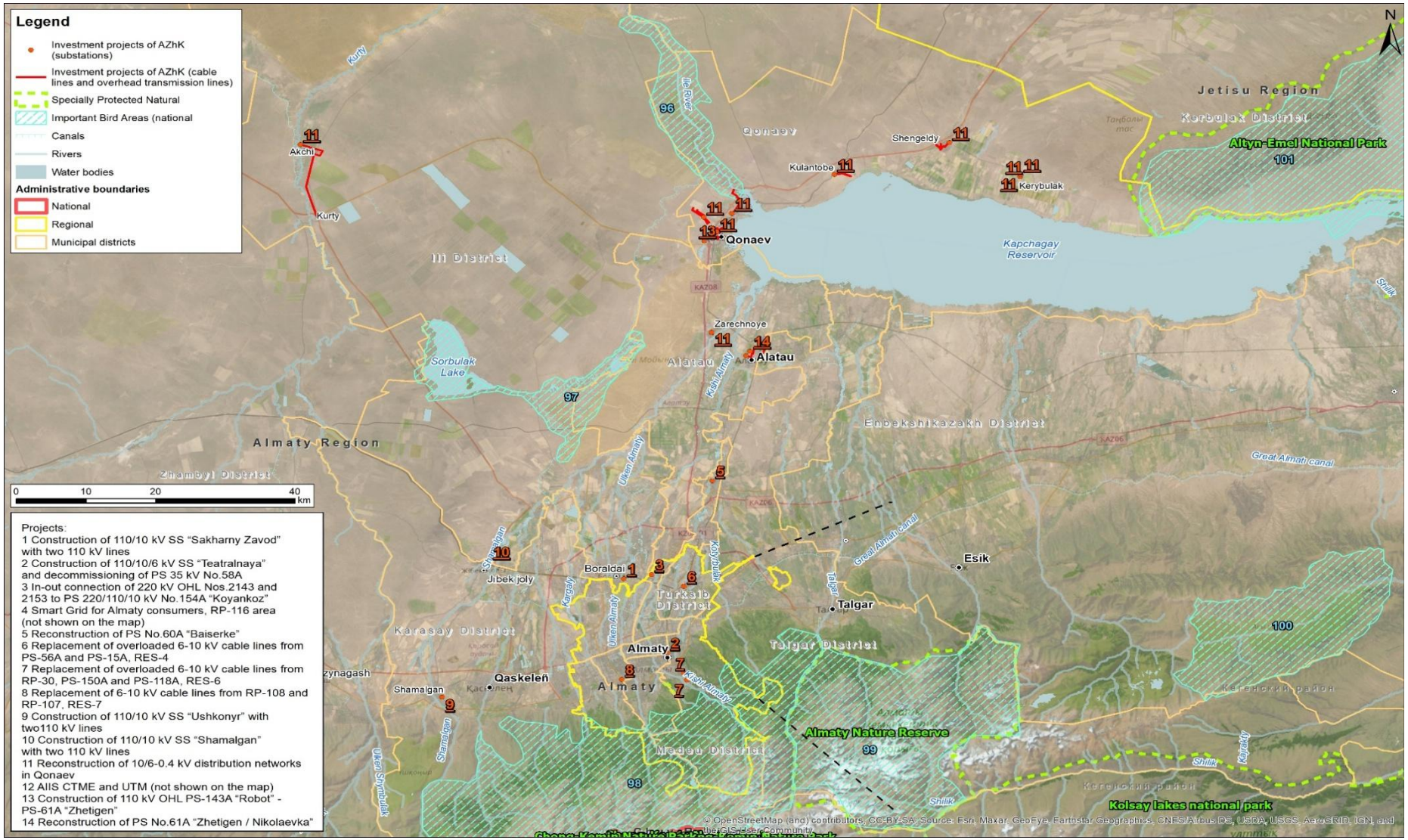

Figure 1: Project location and representative project points

3. ENVIRONMENTAL AND SOCIAL BENEFITS AND ADVERSE IMPACTS

3.1 Project Benefits

The Project is expected to generate a range of positive environmental and social benefits through modernisation of AZhK's electricity grid, replacement of outdated assets and deployment of digital technologies. The improvements are expected to enhance reliability, safety and efficiency of electricity supply for households, public services and businesses in Almaty city and Almaty Region.

Key benefits include:

- **Improved reliability of electricity supply** and reduced frequency and duration of outages due to replacement of worn equipment, increased substation capacity and strengthened network connections,
- **Reduced technical losses and improved energy efficiency** through modern transformers, replacement of overloaded cable lines and improved control of distribution networks,
- **Improved public and worker safety** as a result of replacing ageing and overloaded assets, strengthening protection systems, and improving visibility and control of network faults,
- **Support for urban and regional development** by increasing capacity for new consumers, residential areas, social infrastructure and industrial/commercial loads,
- **Improved environmental performance** through reduction of losses, better management of equipment containing oils and other hazardous materials, and improved waste management during replacement of old equipment,
- **Technological modernisation** through smart grid, telemetry, metering and data systems, allowing faster fault detection, improved billing transparency and better network planning,
- **Temporary employment and economic opportunities** during design, construction, installation, commissioning and maintenance activities.

Grouped project component	Main positive impacts / benefits
New 110/10 kV substations and associated 110 kV connections	Replacement of ageing 35 kV assets with higher-capacity 110/10 kV infrastructure; increased transformer capacity, improved supply reliability and power quality, reduced technical losses, improved operational safety, and additional capacity for residential, social, commercial and industrial consumers
Reconstruction and reinforcement of existing high-voltage substations and connection schemes	Improved resilience and flexibility of the 220/110/10 kV and 110/35/10 kV networks; reduced overloading and accident risk; replacement of obsolete equipment; increased reserve capacity; and improved reliability for consumers in Almaty city, Almaty Region and developing service areas
Urban 6–10 kV cable and distribution network replacement in Almaty	Reduced frequency of cable failures and emergency outages; improved reliability and safety of electricity supply in densely developed urban areas; reduced technical losses; improved ability to connect new consumers; and reduced risks related to overloaded and worn distribution assets
Qonaev 10/6–0.4 kV distribution network reconstruction	Improved reliability and quality of supply for households, SMEs, social facilities and enterprises; reduced operational costs, losses and outage duration; and support for local economic and urban development
New 110 kV overhead line connection between Robot and Zhetigen	Relief of overloaded 110 kV transit sections, improved transfer capacity and redundancy, reduced risk of interruptions during emergency and maintenance modes, and increased reliability for the developing Alatau/Zhetigen service area
Smart Grid, AMI/CTME and telemetry systems	Faster fault localisation and restoration, improved network observability and control, more accurate metering and billing, better detection of technical and commercial losses, improved data availability for SCADA/ASKUE, and stronger basis for network planning and energy efficiency

3.2 Adverse Impacts and Mitigation Measures

The Project is categorized “B” under the EBRD Environmental and Social Policy (ESP 2024), as the anticipated environmental and social impacts are expected to be site-specific, largely reversible, and manageable through the application of good international industry practice (GIIP), national regulatory requirements and project-specific mitigation measures. Most of the sub-projects involve modernization, replacement or reconstruction of existing electricity infrastructure within or close to existing substations, distribution networks, road corridors or established utility corridors.

As part of the preliminary environmental and social assessment of the Project, key adverse impacts and risks have been identified for the main groups of Project components, including new and reconstructed substations, 110 kV and 220 kV line connections, replacement of 6–10 kV cable and distribution networks in Almaty, reconstruction of distribution networks in Qonaev, the new 110 kV line between PS-143A “Robot” and PS-61A “Zhetigen”, and deployment of Smart Grid, AMI/CTME and telemetry systems.

Overall, most impacts are expected to be of **negligible** to **minor** significance, with a limited number of risks assessed as **moderate** before mitigation. The key potential adverse impacts include temporary construction-related disturbance, occupational health and safety risks for AZhK and contractors’ workers, community health and safety risks associated with works in urban and residential areas, traffic and transport safety risks, waste generation from dismantled equipment and cables, management of oils and other hazardous materials, temporary restrictions on access, potential land use constraints associated with new substations and line corridors, planned outages during connection works, and stakeholder concerns related to construction disturbance and service interruptions.

For the overhead line and high-voltage connection components, additional risks may include impacts related to localised vegetation clearance, disturbance within line corridors, bird collision or electrocution risks, and management of works near agricultural or privately used land. For digital and metering components, potential risks include data privacy, cybersecurity, temporary disruption during installation, and the need to manage any workforce changes linked to automation and modernization of operational processes.

AZhK and its contractors will be required to implement appropriate Environmental and Social Management Plans (ESMPs) and site-specific method statements covering, as relevant, occupational health and safety, electrical safety, contractor management, traffic management, waste and hazardous materials management, emergency preparedness, community health and safety, stakeholder engagement, grievance management, birds protection, chance finds procedures and reinstatement of disturbed areas.

Particular attention will be given to works in densely populated urban areas of Almaty and Qonaev, where construction activities may take place close to residential buildings, roads, businesses, schools, social infrastructure and other sensitive receptors. In such locations, mitigation measures will include advance notification of affected communities, safe fencing and signage of work areas, controlled access to construction zones, traffic and pedestrian safety measures, dust and noise control, prompt reinstatement of disturbed surfaces, and effective channels for receiving and resolving complaints.

The anticipated adverse impacts and proposed mitigation measures are summarized in Table 1 below.

Table 1. Summary of key adverse risks and impacts and mitigation measures

Legend: **Adverse Impact Significance** | Moderate | Minor | Negligible | No impact |

Adverse impact / risk	Construction of new substations	Modernization of existing substations	110-220 kV OHL construction and connections	6-10 kV cable routing (underground)	Smart Grid / metering / telemetry	Proposed mitigation measures
Construction disturbance (noise, dust, vibration, access constraints)	Moderate	Minor	Minor	Minor	Negligible	Prepare and implement site-specific ESMPs; apply dust and noise controls; maintain access; reinstate disturbed areas; schedule works to minimize disturbance
Waste generation from construction, demolition and decommisioning of cables and electrical equipment	Moderate	Moderate	Minor	Minor	Minor	Develop waste management procedures; segregate waste; use licensed waste contractors; ensure traceability of hazardous and electronic waste; avoid uncontrolled storage
Spill risks associated with hazardous materials and transformer oil management practices	Minor	Moderate	Minor	Minor	Negligible	Inventory oil-filled equipment; provide secondary containment; maintain spill kits and emergency response procedures; check PCB status where relevant
Land acquisition, easements and protection zone restrictions	Moderate	Moderate	Moderate	Minor	No impact	Confirm land status and rights; avoid physical/economic displacement where possible; implement LAR procedures where required; disclose restrictions and compensation arrangements
OHS risks (electrical activities, excavations, lifting operations, work at height, traffic)	Moderate	Moderate	Moderate	Moderate	Minor	Require contractor OHS plans; implement permit-to-work and lockout/tagout; ensure training, PPE, supervision, incident reporting and emergency preparedness
Community health and safety risks associated with traffic and proximity to residents	Moderate	Minor	Minor	Moderate	Negligible	Fence and sign work sites; implement traffic management; communicate planned outages and works; secure excavations; manage public access
Labor and working conditions risks in contractors and supply chain entities	Minor	Minor	Minor	Minor	Minor	Include E&S/OHS clauses in contracts; monitor contractors and subcontractors; ensure worker grievance mechanism and compliance with labour requirements
Risks to biodiversity, vegetation and birds from overhead lines	Negligible	Negligible	Moderate	Negligible	No impact	Screen routes; avoid sensitive habitats where possible; apply bird protection/diverter measures where needed; manage vegetation clearance
Risks of accidental damage to cultural heritage objects	Moderate	No impact	Moderate	Minor	No impact	Engage with relevant authorities and akimats prior to earth works implementation; develop and implement a chance finds procedure; stop works and notify authorities if cultural heritage is encountered
Planned outages and associated inconveniences to consumers	Minor	Minor	Minor	Moderate	Minor	Provide advance notice to consumers; coordinate outages; maintain emergency response; prioritise social infrastructure and vulnerable consumers
Cybersecurity and data privacy risks	No impact	No impact	No impact	No impact	Moderate	Implement cybersecurity and data protection controls; restrict access; ensure secure data transmission, backup and incident response
Risks related to tariff affordability and stakeholder perception of tariff increases	Minor	Minor	Minor	Minor	Minor	Communicate Project benefits; engage with regulator and authorities; identify support measures for vulnerable groups if required

4. ALIGNMENT WITH EBRD ENVIRONMENTAL AND SOCIAL REQUIREMENTS

As part of the Environmental and Social Due Diligence (ESDD) carried out by an independent consultant on behalf of the EBRD, both the Project and the Company's corporate environmental and social management practices were reviewed against the EBRD Environmental and Social Requirements (ESRs[1]). This combined a project-specific assessment of the planned sub-projects with a corporate-level review of AZhK's policies, procedures and management systems.

No major gaps or non-compliances were identified. AZhK has well-established management systems, including internationally certified standards, and generally complies with national legislation. A number of areas were identified where existing practices should be strengthened or adapted to fully meet the EBRD requirements. These are summarised below and will be addressed through the Environmental and Social Action Plan (ESAP).

- **ESR 1 – Assessment and Management of Environmental and Social Risks and Impacts:** the Company's certified management systems and risk-management process provide a strong basis. For the Project, these should be turned into a project-specific management plan, with clearly assigned staff, oversight of contractors, and regular monitoring and reporting to the EBRD.
- **ESR 2 – Labour and Working Conditions:** employment follows national law and a collective agreement, with a trade union and additional worker benefits in place. Improvements are needed to add clear statements against child and forced labour and against harassment, a confidential complaints channel open to all workers (including contractors), and closer oversight of contractors' labour practices.
- **ESR 3 – Resource Efficiency and Pollution Prevention and Control:** the Company runs energy-efficiency and waste-management programmes and reuses transformer oil. Further work is needed to strengthen the handling and containment of oils and hazardous materials, improve waste segregation and tracking, and expand greenhouse-gas accounting and climate-risk consideration.
- **ESR 4 – Health, Safety and Security**: a functioning health and safety system is in place and meets national requirements. For the construction works, additional project-specific safety planning is needed, including hazard assessments, contractor safety management, public-safety and traffic measures, emergency planning, and information-security (cyber) measures for the new digital systems.
- **ESR 5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement:** the Project is mostly built within existing sites and corridors and does not require resettlement. Limited land is needed for two new substations and for line easements and tower bases; this will be obtained by agreement with fair compensation, and a dedicated channel for land-related concerns will be set up.
- **ESR 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources:** most project activities are outside protected nature areas. Preliminary design routing indicates that one overhead-line section (near the Kapchagai hydropower plant) partly overlaps

[1] *ESR 7 (Indigenous Peoples) and ESR 9 (Financial Intermediaries) are not applicable to the Project.*

an internationally recognised Important Bird Area; this and other bird-sensitive locations will be checked by a specialist and managed with bird-safe measures and monitoring.

- **ESR 8 – Cultural Heritage:** national heritage rules are followed. As some works involve deeper excavation, a simple "chance finds" procedure and worker training will be introduced to protect any items that may be discovered during construction.
- **ESR 10 – Information Disclosure and Stakeholder Engagement:** AZhK already has well-used channels for public enquiries and complaints. A Project-specific Stakeholder Engagement Plan and grievance mechanism have been prepared and will be adopted, disclosed and made accessible (including for confidential complaints), so that communities and landusers are informed and can raise concerns.

5. ENGAGEMENT WITH STAKEHOLDERS

A Stakeholder Engagement Plan (SEP) has been developed for the Project and will be implemented by the Company throughout all Project phases. The SEP describes the mechanisms by which public, especially local communities, and other stakeholders are informed about the Project and given opportunities to provide comments and input to the Project development. The SEP is a “living” document and will be updated along with the Project progress reflecting needs for and specific of further engagement with stakeholders.

Activities included as part of the SEP refer to engaging with the affected communities to ensure relevant information is disclosed in a meaningful way and their key concerns in relation to the Project are recorded, understood and adequately addressed. Additionally, the SEP includes a grievance redress mechanism (GRM) to be implemented by the Company to allow external stakeholders, particularly community members, to submit and seek resolution for any grievances they may have with regard to the Project.

6. PROJECT MONITORING

In accordance with the EBRD’s Environmental and Social Policy, the Bank will review annual environmental and social reports on the environmental and social performance of the Project, the implementation of the ESAP and the compliance of the Project with the environmental and social covenants in the financing agreements. The EBRD may also periodically verify the monitoring information prepared by the Project through the site visits.

7. PROJECT FEEDBACK

We welcome your views on the Project. Interested parties are welcome to contact Alatau Zharyk Company to ask questions or provide comments through any of the methods below.

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